UNRULY LANDSCAPES: THE MAKING OF 1ST MILLENNIUM BCE POLITIES ON CYPRUS

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By

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ABSTRACT

UNRULY LANDSCAPES: THE MAKING OF 1st MILLENNIUM BCE POLITIES ON CYPRUS

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This dissertation is an examination of emerging landscape practices in one region of Cyprus during the early 1st millennium BCE (ca. 1100-700 BCE). The work argues that shifting environmental contexts and social practices co-constituted a re-investment in this region, the Vasilikos and Maroni Valleys of south-central Cyprus, after a period of dislocation at the end of the Bronze Age. This re-investment involved the creation of places for social gatherings, such as cemeteries and ritual spaces, as well as renewed activity in metallurgy, agriculture and water management, and trade. I conclude that the landscape practices that emerged across the island in the 9th-8th c. BCE, while contingent to local contexts, contributed to a shift in the island's political development.

The region of focus is both underexplored in the history of archaeology of 1st millennium BCE Cyprus, as well as demarcated as a supposed productive hinterland for two historic kingdoms. This research moves away from understandings of the period that privilege the city and the textual identity of the king (Gr. *basileus*). I focus instead, through a critical review of our evidence for the mechanics of the Cypriot polity, on the making of settlements and landscapes outside the city and their participation in the formation of diverse forms of social and political organization. I document a shift in the permanence of settlements, the formation of social boundaries, and the engineering of the landscape in the 9th-8th c. BCE, at a time when paleoclimatic proxies (including a new stable isotope analysis of charcoal undertaken in this

dissertation) indicate a shift to wetter and increasingly warmer conditions. I employ a relational approach to landscapes in order to examine the intersections of changing climate and developing structures.

This study employs an interdisciplinary methodology that integrates spatial analyses of archaeological survey evidence (both archived and surveyed material) and paleoclimatic studies, and moves between the scales of community, region, island, and eastern Mediterranean. The analysis ends with a survey of ancient representations of Cyprus in Greek, Roman, and Near Eastern thought, arguing that certain tropes have affected scholarly interpretations that emphasize the singularity of the Cypriot *basileus*.

BIOGRAPHICAL SKETCH

Catherine Kearns received her B.A. in Archaeology, with a minor in Classics, from The George Washington University in 2006. While at GWU, she interned at the Smithsonian Institute and excavated in Italy. In 2008 she received her M.A. in Classical Archaeology from the University of Arizona, writing a thesis on the designed landscapes of elite residences in the Roman province of Gallia Narbonensis, and interning at the Arizona State Museum. She began her doctorate at Cornell in 2008, using her summers to participate in field and survey projects in Italy, Jordan, Armenia, and Cyprus. In 2012-2013 she was the Fulbright student at the Cyprus American Archaeological Research Institute.

To my parents, Joe and Mary, for their unconditional support,

And to my pilot, Alex.

Enclosed by a low wall of odd-shaped stones which age sinks into the scabious,
At each corner lifted to the sky by the black jets of arborescent plants:
Trajectories of frozen slag, columns of ink with mimosa fringes,
The cypresses filters of the wind's most edgy song.

Who plows these hallowed grounds?
Who changes the grass rectangles into slabs,
And every day takes back a human surface from the flowers?
Who long ago near the villages circumscribed the assigned area for pawning the dead?
Who barks when the invisible dog barks?
Beyond, the azure grindstone sharpens the roof ridges
And the tapered slate glistens.

"The cemetery," Michel Deguy (*Fragments du cadastre*, 1960; trans. C. Eshleman 1984)

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How does the saying go – it takes a village to raise a child? The many-faceted nature of this project, stretching its fingers into the halls of classics, anthropology, geochemistry, historiography, geography, and even materials science, has required something like a village of collaborators, advisors, technicians, friends, and family to see it through to some hope of completion. So many, that in the 11th hour as I write these acknowledgements of heartfelt gratitude, the list continues to grow. Before beginning, I must at the start give my deepest thanks to Alex Lovallo, without whose charming wit and companionship, and always-enlightening discussions of climate, technology, and Greeks, I (and this dissertation) would have been lost.

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Other faculty within the Classics department at Cornell have been equally supportive, most especially Charles Brittain, Eric Rebillard, Michael Fontaine, Courtney Roby, and Caitie Barrett: many thanks to them for the willingness to fund some of my summer adventures, or for listening to my concerns and apprehensions about academic problems. I also thank Hayden Pelliccia, with whom I shared many interesting conversations on space in Greek literature, and whose field exam question provided the most fun I've had with the *Odyssey*. Being a graduate student at Cornell in Classics certainly could not happen without the friendly aid of Katrina Neff and Linda Brown, whose ability to keep me on track all these years (and to make sure forms were in on time) kept me above water, with a smile.

Despite needing the aforementioned advising and administrative help, I can say with complete honesty that this project would not be half what it became without the support of the graduate student community at Cornell who listened to countless talks, read and edited numerous drafts, and lifted up my spirits more times than I can count. Jeff Leon has been a great interlocutor, and I cannot thank him enough for his ability to keep me in check. And, for teaching me how to drive manual on the cobbled streets of Kalavasos: you have saved me too many times to count. My other Musketeer, Perri Gerard-Little, has equally been a rock, a roommate, and a delightful ear to vent my frustrations to on hot nights in Cyprus or cold nights in Ithaca; her intellect is wide-ranging and intimidating. The dissertation writing groups that I

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Introduction

In the mid-20th century, W.G. Hoskins took the study of landscape history and turned it upside down, or rather, like disassembling a machine, shook it into its parts and began observing how they interconnected. He wanted, as he put it, to study "the making of" the English landscape that surrounded him, "to explain as far as I am able how it came to assume its present form, how the details came to be inserted, and when" (Hoskins 1955: 14). What he fostered, decades later, some call a peculiarly British study of ancient landscapes as palimpsests (Johnson 2005; Fowles 2010); yet his use of metaphors of production, action, and the continuous *shaping* of the local landscape – by environmental and human forces – persists in a wide range of studies on place-making (e.g. Fisher 2009; Lawrence and Low 1990), on senses of place (e.g. Feld and Basso 1996), and on landscape history (e.g. Rackham and Moody 1990), to name a few.[1] Like these, this dissertation belongs to the growing field of scholarship that emphasizes the active and productive nature of space and landscape within human society, and especially the recursive relationships between them and social and political change (Smith 2003; Lefebvre 1991; Casey 1997). It concerns the making of an ancient landscape, its assembling and disassembling, and the mechanics through which it shaped, and was shaped by, an emergent political order.

This work investigates a critical era in the wake of dismantled practices and social organization in the ancient Mediterranean during the 11th to 7th c. BCE, marked by new patterns and relationships of settlement, trade and production that arose after the political and economic collapse of Late Bronze Age urban centers sometime around the end of the 12th c. BCE (Iacovou 1994; Knapp 2008: 280-297; see Cline 2014). Following the abandonment, destruction, or

[1] Hoskins' metaphor, and the local historical perspective, was equally influential in E.P. Thompson's *The Making of the English Working Class*, 1963.

renovation of the Late Bronze Age polities on Cyprus in the 12th/11th c. BCE, new forms of political association that have been named "city-kingdoms" were founded between the 11th and 9th c. BCE, and sustained their rule until the Ptolemaic conquest in the 4th c. BCE (Iacovou 2002, 2006; Papantoniou 2012).[2] I examine this early period of polity-formation on Cyprus through a study of shifting landscapes, arguing that these socially constructed sets of places were active in the making of new politics and interdependent with contingent shifts in local and regional environments.

I view landscapes - the interactions between people and their real and imagined surroundings, socially constructed and inherently dynamic (following scholars such as Alcock 1993; Wilkinson 2003) – not just as recursively tied to practice and human experience, but also embedded within their local, regional, and global environmental contexts.[3] Using an interdisciplinary methodology that combines archaeological survey material, isotopic analysis of archaeological charcoal, and textual analysis, I examine the development of complexity and political order in the newly re-settled and significantly changed landscapes of the island during the early 1st millennium BCE. In doing so, I shed light on the re-engineering and place-making practices of an understudied region, two river valleys in the south-central area of the island. I also trace the complicated history of thought in Cypriot archaeology on the period's landscapes. Against this prevailing framework, I challenge the dichotomies of urban/rural and collapse/post-collapse to elucidate the processes, activated in diachronic landscape practices, through which new forms of power developed.

[2] The timing of these developments anchors one of the controversial debates about the period; see discussion below in **chapter 1**.

[3] **Chapter 2** discusses this conception of space and landscape in more depth. For the spatiality of practice theory (as most prominently conceived by Bourdieu [1977] and Giddens [1984]), see e.g. Fisher 2009; Khatchadourian 2008: 46-50.

There are three layers to the term "unruly" within this project's title that expose its main questions and interests. The first refers to the vagaries of changing climate and environment, and to the complicated ways in which human settlements and uncertain, fluctuating surroundings co-create new political landscapes (e.g. Wossink 2009; McIntosh *et al.* 2000; Broodbank 2013: 19; Horden and Purcell 2000). In my project I avoid environmental or cultural determinism and instead emphasize the recursive interactions among landscape practices, climatic change, and the reappearance of forms of authority from contexts of unknown stability. In other words, I do not maintain that climate change alone drove the formation of 1st millennium BCE polities, nor do I hold that these polities emerged outside of their environmental context – but rather that the complicated give and take between environments, settlements, and lived practices can illuminate how new societal forms might have taken shape.

The period on which I focus broadly follows a shift from more arid conditions to wetter and progressively warmer ones around the 8th c. BCE, as seen in paleoenvironmental proxy evidence from around the Mediterranean (Kaniewski *et al.* 2010; van Geel *et al.* 2004; Schilman *et al.* 2001; Kuzucuoğlu 2003; Bar-Matthews *et al.* 1998, Bar-Matthews and Ayalon 2011). Recent data question how new conditions marked by more reliable rainfall and more stable growing seasons might have been conducive for growing populations to sustain subsistence and land use practices. The Holocene was often thought of as a rather stable climatic epoch, but recent research is revealing a much more "unruly" period with noticeable and abrupt shifts (Roberts *et al.* 2011; Walker *et al.* 2013; Rohling *et al.* 2009). The complications of semiarid environments on Cyprus, with decadal or often longer periods of drought, suggest that 1st millennium BCE populations learned to manage these unpredictable environments, not

necessarily subduing them, but engineering practices that would help to build new polities (Smith 2003: 278-9).

The second layer of "unruliness" invokes the island's uneven political and social configurations and their resistance to the all-too-neat traditional accounts of the re-generation of political forms in this period, long yoked to the city. The current arguments for polity-formation use archaeological evidence primarily to support a scattered collection of inscriptions and objects that locate *basileis* ("kings") in major urban centers around the island, whose political power remained relatively stable until the 4th c. BCE (e.g. Iacovou 2002, 2008a, 2013a, 2014; Satraki 2010, 2012). Yet the trajectory of that monarchical type, and the institutions of rule in what are assumed to be the territories of each kingdom (e.g. Fourrier 2002, 2013; Iacovou 2002), remain understudied. The making of these polities beyond the city, and the possibilities of resistant subjects or of alternate modes of practice and settlement that do not fall within or conform to these assumed models, have not been considered.

Traditional text-based topographies – based on Neo-Assyrian inscriptions as well as later sources – situate these polities within a type of peer-polity competitive network, with an organization of loosely- but regionally-defined borders (e.g. Iacovou 2007b). The map of these territorially distinct but culturally homogenous "city-kingdoms," however, elides non-documented landscapes (Rupp 1987: figs. 4, 6; see Fig. 1). In this project, I trace the mechanisms of increasing complexity from the "bottom up" and the local practices of landscape that produced and reproduced social boundaries outside of an urban center – and the possibility of an "unruly" region, caught between emerging authorities, which does not fit easily within existing hypothetical cartographies.[4] Social boundaries here refer to those ongoing, fluid processes of

[4] I discuss the term "bottom-up" and its methodological concerns in **chapter 2**; here I only note that my usage of the term is less a conscious discussion of historical subjects as collectives as opposed to kings (e.g. Sahlins 2004:

group consolidation linked with daily practice, or *habitus*, which involve the interaction of humans, materials, and places in the constitution and maintenance of collective difference (Dietler and Herbich 1998; Stark 1998; Bourdieu 1977). So, instead of assuming that one region became subject to another because of proximity or anachronistic, foreign geo-histories, I explore the development of non-urban political forms through the lens of surface survey and environmental analysis. These categories of evidence thus question matters of scale, the methodological challenges in identifying the intensification of practices or settlements, and the instrumentality of "landscape" for understanding social and political development.

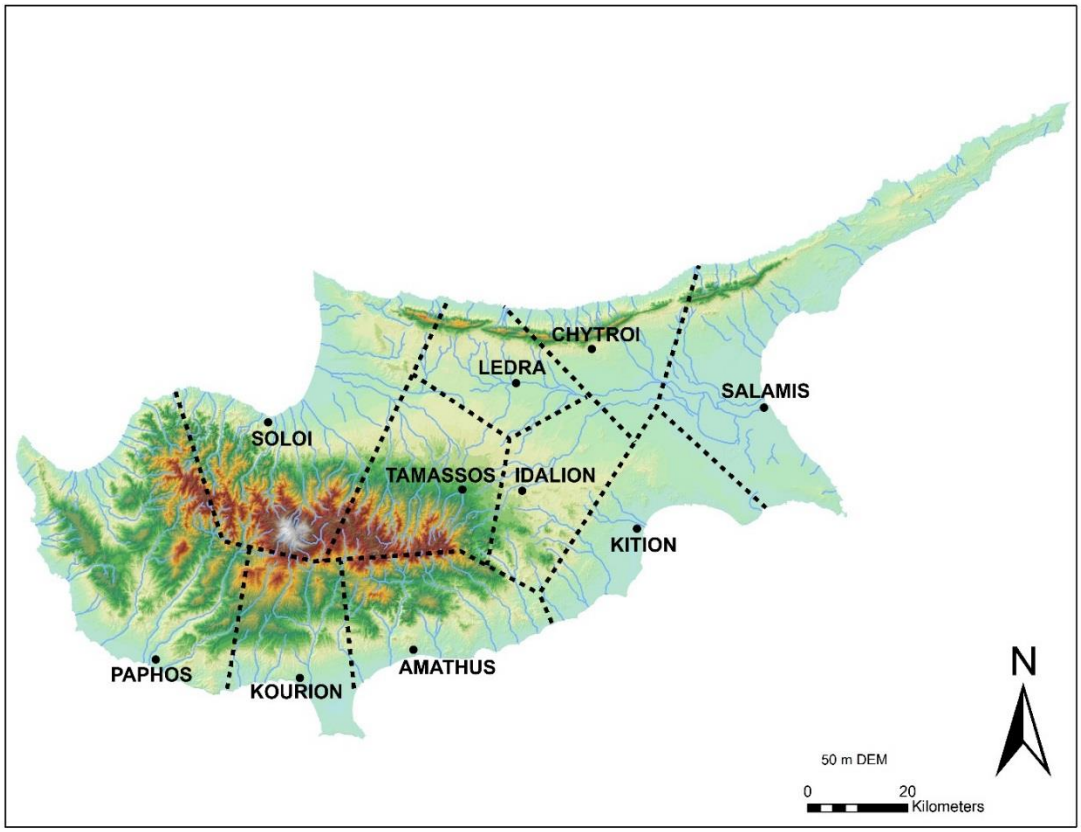


Fig. 0.1. Hypothetical boundaries of 7th c. BCE Cypriot kingdoms (after Rupp 1987: map 4). Created in ArcGIS 10.0 using data provided by the Geological Survey Department.

139), or driven by an explicit concern with labor/political economy (Silliman 2001), but is taken up more in the sense of examining, through survey material and environmental conditions, the practices of the to-this-point-unknown groups outside of the city center.

Finally, the third layer operating within the term "unruly" marks the academic production of an archaeology of 1st-millennium BCE Cyprus, which both embraces and simultaneously pushes against typical analytical frameworks of political organization, material culture, and Mediterranean interactions of this period. The scholarly terminology used to describe Cyprus does not conform with counterparts in the Aegean or Near East, reflecting both the island's position in the midst of eastern Mediterranean powers, but also the ways in which scholars have tried to coordinate the period's archaeology within established classical or Near Eastern traditions (e.g. Gjerstad 1948; Iacovou 2005b, 2006; Hansen 2006; Satraki 2010). Terms such as "city-kingdom," not used elsewhere, have been adopted with little critical analysis to explain the "non-*polis*" stature of the Cypriot regime (e.g. Steel 1996; Demand 1997; cf. Iacovou 2013c). What exactly was a city-kingdom, and what did it do? The "power vacuum" (Iacovou 2012; Georgiou 2012; Petit 1997), another commonly used term to discuss Iron Age power shifts, appears to have become a convenient, if undefined, way to explain post-collapse dynamics. Attending to the use of these words in scholarship, and the assumptions that they promulgate, builds up a more nuanced understanding of the period's social and political processes.

This unruly work – combining interdisciplinary scientific and survey data, classical sources, and social theory to resist certain long-standing truisms in Cypriot archaeology – has three central aims. First, I introduce current paleoenvironmental research, as well as theoretical discussions of human-environment relationships, to the scholarship on Mediterranean polity-formation and the emergence of new authorities in the 1st millennium BCE. While this work focuses on Cyprus, the arguments advanced in these pages about the importance of scientifically-rigorous paleoenvironmental studies are applicable to the larger field of archaeological investigations into landscapes and environmental dynamics, and thus belong less to

"Mediterranean archaeology" than to the archaeology *of* the Mediterranean (Horden and Purcell 2000; Harris 2005b).[5] Within this aim, the recuperation of the composition and complexity of the *land* within social theories of landscape using scientific analysis presents an innovative schema for new approaches in landscape archaeology.

Second, I emphasize the complicated and interconnected local political landscapes of 1st-millennium BCE Cyprus as critical to the study of emerging authorities. I argue that approaches to the generation of new forms of polity exist beyond the historical categories conditioned mainly by textual evidence, and that these examinations of non-urban practices, through survey and paleoenvironmental evidence, open new avenues for exploring polity-formation and social boundaries in other archaeological or historical contexts. And finally, this dissertation aims more broadly to highlight the importance of interdisciplinary, integrative analyses (Pollard and Bray 2007; McCormick 2011), which take "omnivorous" advantage of numerous lines of evidence and methods to investigate the past.[6]

Organization of dissertation

In the first chapter, I outline the historical context of the research and the existing approaches to polity-formation on Cyprus in the 1st millennium BCE. The chapter focuses on the present gaps in our understandings and their repercussions for the study of post-Bronze Age development in the east Mediterranean, by analyzing the main arguments of existing interpretations on the rise of the Iron Age polities on Cyprus. **Chapter 2**, which builds upon this

[5] In the sense that this dissertation works to examine how environmental dynamics of the Mediterranean shaped political development, and is not a singular study of paleoenvironmental reconstruction on Cyprus. See Shaw 2001 for further discussion on Horden and Purcell's (2000) *opus*; Harris 2005b.

[6] For the argument for a holistic ("an archaeology of the most omnivorous variety") view to Mediterranean connectivity and dynamics, see Broodbank 2013: 22.

review and analysis of previous scholarship, sets out the stakes and concerns of the work, namely the primacy of ancient place-making and environment-shaping practices that contributed to significant social change. In this discussion I put forward a theoretical approach to studying ancient landscapes that is relational, that attends to the dynamics of human-environment interactions, and that is bottom-up. **Chapter 3** details the development of thought and practice on ancient environments in the archaeology of Cyprus, from the 18th and 19th c. to the present. A critical examination of almost two centuries of archaeological investigations reveals several thematic concerns around which the study of ancient Cypriot environments has developed: environmental determinism, topographic survey, and regionalism. A diminutive **Chapter 3.1** builds upon the historical context and theoretical discussions in the first three chapters to introduce the regional setting and archaeology of the study region, the Vasilikos and Maroni valleys.

Chapters 4, 5, and 6 present my environmental and archaeological investigations of the mechanics of polity-formation on Cyprus, moving across the scales of site, region, island, and eastern Mediterranean. **Chapter 4** centers on the scientific analysis of paleoenvironmental material, by first introducing the state of paleoclimatic research for 1st-millennium BCE contexts in the eastern Mediterranean (see e.g. Kaniewski *et al.* 2013). I discuss the current hypothesis on an abrupt environmental change around the 9th/8th c. BCE (ca. 2800 BP), and present the method, theory, and results behind carbon stable isotope analysis on archaeological charcoal as an indirect proxy for precipitation change. These paleoenvironmental data constitute an important first analysis on Cypriot materials and provide the environmental context with which to integrate archaeological data.

Chapter 5 presents the results of survey investigations in the Vasilikos and Maroni Valleys conducted while on a Fulbright grant to Cyprus in 2012-2013. It shifts focus from individual sites or clusters of settlements to regional interactions with the rest of the island. The chapter outlines the problems of archaeological survey, particularly in the comparison of regional projects (e.g. Alcock and Cherry 2004; Bintliff and Howard 2004), and argues for the importance of "longitudinal" re-survey with updated methods (Thompson 2004). It also advocates for GIS spatial and computational analyses that do not rely on abstract, 2D distribution maps that fail to capture ancient landscape experiences (see e.g. Given *et al.* 2013a: 10; Llobera 2003; Bevan and Conolly 2013: 21; Conolly 2008 for references). The integrative nature of this project avoids depending on GIS as "the" approach to understanding past landscapes, and uses it instead as one powerful and analytically capacious tool oriented towards the process of asking and answering questions of multiscalar data (see Tomlin 1990).

Chapter 6 brings these two major lines of investigation into dialogue to consider the creation and investment in landscapes in the region in the early 1st millennium BCE. I work at three major scales, integrating the paleoenvironmental and archaeological evidence to consider these landscapes in-the-making: 1) the scale of the site and its relationship with its local surroundings; 2) that of the region of the two valleys and their relationship with settlement and land use trends across the island; and 3) that of the eastern Mediterranean, with a broader comparative analysis of 1st-millennium BCE polity-formation. In **Chapter 7**, I move both within and outside of Cyprus to consider its imagined landscapes as represented in textual and visual depictions. This chapter aims to expand upon the dissertation's framework to consider the perceived landscapes of the period and their relationships to emerging communities, on and off the island. I explore four different imaginative schemes of ancient Cyprus: 1) its exotic distance

out in the middle of the sea, 2) its role as a productive hinterland of copper, 3) its unique kings, and 4) possible local conceptions of landscapes. In the concluding **chapter 8**, I bring together these trends, themes, and key results in order to review important conclusions, to highlight remaining challenges, and to look beyond this dissertation to future investigations.

Chronological and geographical framework

One of the most controversial aspects of the study of the 1st-millennium BCE on Cyprus is its chronological framework (Nys 2008). As in other regions of the Mediterranean, the Three Age system proposed by Christian J. Thompsen in 1837 remains "the time scheme of choice" (Knapp 2013: 25). Archaeological remains on Cyprus were first categorized within the well-known horizons of Stone, Bronze, and Iron, in the late 19th and early 20th c., and later reified by the Swedish Cyprus Expedition (SCE) in the 1930s into culture-historical models built upon pottery seriation (see Stanley Price 1979: 1-4). These periods have been variously critiqued for perpetuating unilinear and continuous cultural sequences on Cyprus where "breaks" in material culture indicate abandonment, migration/invasion, or simply enigmatic yet powerful "transitions" (Knapp 2013: 25). For 1st millennium contexts, we lack much in the way of radiocarbon-derived absolute dates, as opposed to those accumulating for prehistory (e.g. Manning 2013b). The SCE's chronology does, however, remain accepted to the present day (with some minor challenges, e.g. Smith 2009: xvii-xviii).[7] For the post-Bronze Age periods, the traditional scheme is shown in this table:

[7] Knapp (2008, 2013) has been a most vocal proponent for an altogether "independently based" timescale, using radiocarbon data to avoid unwieldy terminology (e.g., Prehistoric Bronze Age to refer to Philia-Early-Middle Cypriot phases, Protohistoric Bronze Age to refer to Middle-Late Bronze Age phases).

Table 0.1. Chronological periods showing relative dates for late 2nd millennium – 1st millennium BCE.[8]

Period	Relative Dates (BCE)
Late Cypriot II C	1300-1200
III A	1200-1125/1100
III B	1125/1100-1050
Cypro-Geometric I	1050-950
II	950-900/850
III	900/850-750
Cypro-Archaic I	750-600
II	600-475
Cypro-Classical I	475-400
II	400-312
Hellenistic (Ptolemaic)	312-30

In this work I try to use these terms only when it is necessary to distinguish materials in published works (primarily ceramics), but opt instead for the broader, albeit more vague, "early 1st millennium BCE" to avoid problematic associations with other traditions. While this terminology conflates the LCIIIB, CG, and early CA (I) periods, I maintain that this 400 year period is better detailed through "century" terminology (e.g. early 8th c. BCE), than by terms that are locked to specific material classes. I equally refrain, except where necessary, from referring to the period as the "Iron Age," given the much earlier inception and widespread distribution of iron objects on Cyprus compared to other parts of the Mediterranean and the economy of the term as used in scholarship (Sherratt 1994, 2000; see Khatchadourian 2011: 464-66).[9] While new work has also attempted to combat these terminological concerns with phrases such as "age

[8] The relative dates for these periods remain modeled after those of Gjerstad (1948), with some recent revision, here following Smith 2009: xvii. Nevertheless, there are still problems with the periods; see e.g. Nys 2008.

[9] Principally in relation to the views of many (e.g. Coldstream 1985) of the Iron Age as 'sub'-standard to the prehistoric periods, especially on Cyprus. Furthermore, Khatchadourian (2011: 464-6) raises the important, challenging question: what ends the Iron Age, and how does the murky beginning of "history," with its well-dated written events and records, intersect and/or compete with the Iron Age?

of the kingdoms" (e.g. Satraki 2013), I find the importance attributed to this political formation – drawn fundamentally from nonlocal textual sources – problematic due to the nebulous state of evidence for what might have existed in the earlier parts of the period, e.g. the 11th-9th c. BCE, as well as the challenge of using this term for archaeological examinations.[10]

In this dissertation, I employ a number of chronological ranges, each with their own problems of resolution, due to the interdisciplinarity and multiscalarity of this work. For the archaeological material, the range extends from the 12th to the 7th c. BCE to encompass as much evidence as possible for the transition to and early part of the 1st millennium BCE. I discuss in **chapter 5** the complications in the study and dating of this period's ceramics, particularly those recovered through surface survey (e.g. Given and Smith 2003; Janes and Winther-Jacobsen 2013a). The paleoenvironmental evidence that I was able to collect, as explained in **chapter 4**, extends from the Middle Bronze Age to the Late Roman periods on Cyprus (early 2nd mill. BCE to mid-1st mill. CE). The resolution on many of these samples is poor, unfortunately, and thus the chronological scale relies mostly on relative periods (e.g. Late Roman). But, even with such coarse resolution, the paleoenvironmental data provide a unique and exciting climatic trend for this region of the Mediterranean upon which other studies can build. Finally, when turning in **chapters 6 and 7** to the dynamics of the Mediterranean in the early 1st millennium BCE, I refer to textual evidence from later historic periods (especially Greek and Roman sources), but with the important caveat that they cannot accurately represent 10th-8th c. BCE practices.

The case study of this dissertation consists of the Vasilikos and Maroni valleys of the chalky plateaus of south-central Cyprus (Pantazis 1967). These valleys have a long history of occupation, from the earliest Neolithic, at sites such as Kalavasos *Tenta* and Khirokitia *Vounoi*,

[10] This sort of term further upholds the focus on urban "power" that dominates discussions of the period, rather than the possibilities of non-city, non-royal political forms and processes, as I discuss in **chapter 1**.

to the Late Bronze Age with the important urban centers of Kalavasos *Ayios Dhimitrios* and Maroni *Vournes*. Their 1st-millennium BCE landscape histories are, however, unknown. While most of the data and interpretations focus on this region, the analysis of the construction of 1st millennium BCE landscapes in current scholarship requires a look at other regions on the island, including the well-known post-Bronze Age necropoleis at Palaepaphos, Kition, and Salamis, as well as the island's network of coastal and inland urban centers. Finally, the discussion in **chapters 6 and 7** extends to the eastern and central Mediterranean worlds to investigate the position of the emergent polities on Cyprus within the newly developed Mediterranean system (e.g. Sherratt and Sherratt 1993; Broodbank 2013: 445-584).

This dissertation now turns to landscapes in-the-making, those that are understudied as well as those whose developmental history remains under-explained by the scholarly *status quo*. From the landscapes existing on the edge of recorded history, and from outside the city walls, this work attends to the importance of space and environments within the production of an unruly, emergent political landscape.

Chapter 1

Engraved territories: Cyprus and the hesitant position of the polity

At some point around 708 BCE, during the reign of the Neo-Assyrian sovereign Sargon II (722-705 BCE), the regime commissioned an "image of the king" – an inscribed stele showing Sargon's garbed body – which would herald his recent accomplishments as well as stake claim to new territory (Cannavò 2010b; Radner 2010; Gjerstad 1979: 237; Fig. 1).[11] Such proclamations of the king's cosmos (Smith 2011: 424) were common practice within the Neo-Assyrian state, and examples survive from the various royal complexes such as Khorsabad and Nineveh as well as from the empire's frontiers (Harmanşah 2007). This stele's biography, however, is unusual. For the first time, according to this decree, a stele would stand at the westernmost edge of the empire, previously unfamiliar to the king's predecessors: the island of "Iadnana," Cyprus, far out in the "Upper Sea of the Setting Sun," an important spatial boundary since the transcriptions of the story of Gilgamesh (Cannavò 2010b: 170-171; Broodbank 2013: 511).[12]

At the end of Sargon II's list of deeds, we learn of those concerning Iadnana (ll. 28-53)[13]:

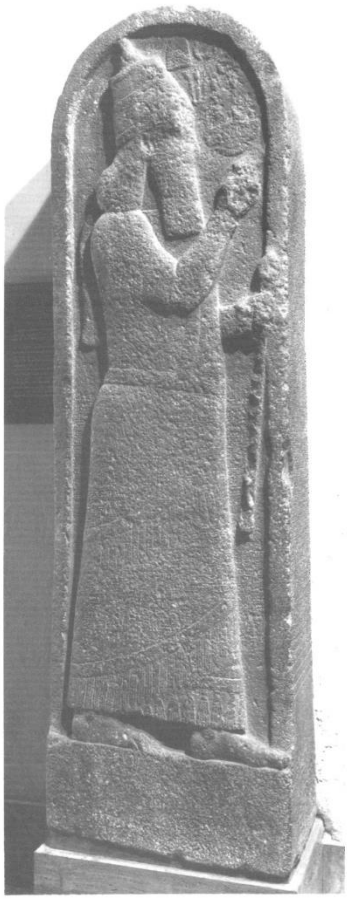
[And seven kings] of the land of Ia'a, a district
[of the land of (Ia)]dnana – a seven-day journey away
[in the middle] of the sea of the Setting Sun[14]
[they have residence] - their seats (are so) far away
[(that) since the] far-off days of the taking possession of the land of Assur

[11] The inscription dates to 709-708 BCE. The term used for "image of the king" is *salmu sarri* (Radner 2010: 432). For a recent dissection of the term's usage in Late Bronze Age political organization, in the earlier el-Amarna tablets from the mid-2nd millennium BCE, see Knapp 2013: 438-47. For a discussion of the Akkadian use of *salmu* (statue as substitute for the king) see Bahrani 2003.

[12] For a discussion of the identity of Cyprus as "Iadnana" during the 1st millennium, see Cannavò 2010b; Lipinksi 2007; Radner 2010; Iacovou 2006; Knapp 2008: 341-5; Reyes 1994: 49-60. Knapp (2008: 342-3) also calls attention to a Phoenician term for Cyprus, *'y'lsyy* ("island of the Alashiyan"), as a variant of the Late Bronze Age name for the island, Alashiya; Cannavò 2010b likewise discusses the Levantine word "Kittim," related to Kition.

[13] From Cannavò 2010b: 171-172. There is considerable damage to the stele, resulting in mostly incomplete lines. For translations see also Radner 2010; Lipinski 2007; Yon 2004: 345-354, no. 4001.

[14] In another inscription of Sargon II's at Khorsabad, he mentions "having caught like fish the Iamnaya who live in the midst of the sea" (West 1997: 616); see also A. Fuchs (1994) *Die Inschriften Sargons II aus Khorsabad* (Göttingen), 34.21.



[…] … the gods my fathers that [came] before (me)
[they did not he]ar the name of their land-
[the deeds that in the (mid]dle of) the land of Chaldea and in the land of Hatti
[I achieved], in the middle of the sea
[far afar they hea]rd: their hearts throbbed,
[the terror seiz]ed them; gold, silver,
[objects made of] ebony and boxwood, treasures of their land,
[to B]abylon, in front of me
[they brought, and] kissed my feet.
[That day] I had a stele made:
[the images of the] great [god]s, my lords,
[I sculpted] the image of my kingship on it,
[powerful fo]r my life, in front of them I had set,
[All the land]s that from east
[to we]st, with the help of Assur,
[Nabu and] Mardnek, gods my supports,
[under the yok]e of my rule I subdued,
[I wrot]e; up
[on the mount] Babil-arri, mountain
[…] … of the land of Iadnana I had it erected.

Fig. 1.1. Sargon II Stele discovered at Kition in 1865, front face (after Gunter 2001: fig. 6)

As others have noted, this depiction of Cyprus speaks more to the fabrication of Neo-Assyrian kingship through a heroic *res gestae* (a "spectacle of the state," Harmanşah 2012: 70) than to any specific mechanism of statehood on the island in the late 8th c. BCE (Cannavò 2010b: 173).[15]

[15] The number seven, for example, has clear ideological and mythical weight here, as Cyprus is certainly not a seven day sail from the coast of Syria/northern Levant.

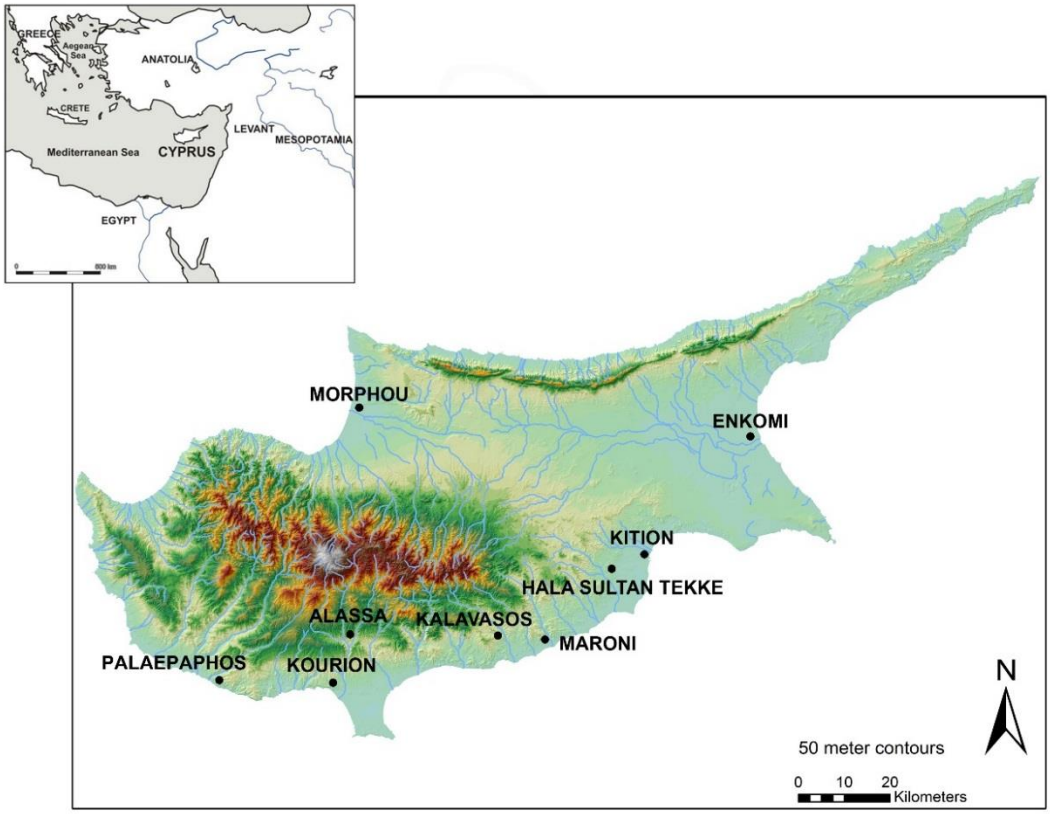


Fig. 1.2. A. Distribution of major LBA urban centers, created in ArcGIS 10.0 with data from Geological Survey Department.

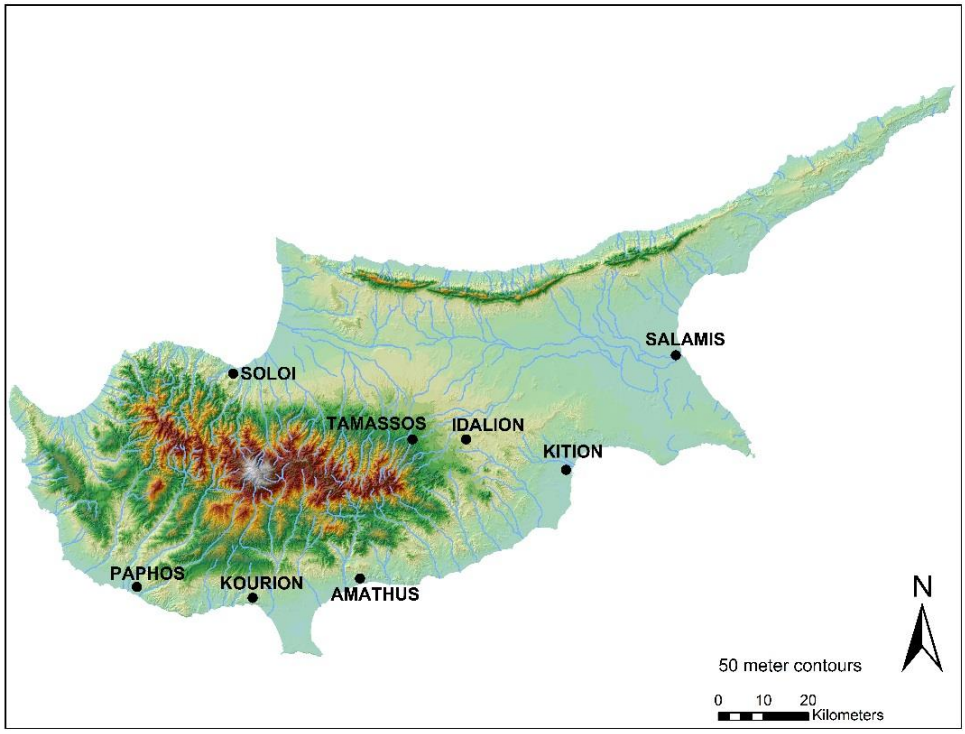


Fig. 1.2. B. Distribution of major Iron Age urban centers.

Within this cartographic imagination of the Neo-Assyrian realm (Broodbank 2013: 511), Cyprus, once known as "Alashiya" in mid-to-late 2nd millennium BCE letters between Mediterranean states, gained legitimacy in the eyes of Neo-Assyrian rulers.[16] Sargon II claims as much by enumerating the first "seven kings" of Cyprus whom he compelled to travel to the capital to bestow exotic gifts of tribute - gold, silver, ebony, and boxwood.[17] Adding to the stele's material history is the local gabbro (basalt) used to make it, from the island's igneous central Troodos mountain range. Somewhere within the high peaks of these mountains, or maybe at Mount Stavrovouni, the closest peak to the southeastern coast where the inscription was eventually found, the stele was set up for posterity to capture and to commemorate the extent of the Sargonid realm.[18]

This chapter interrogates the ways in which Sargon II's statement of geopolitical order has shaped the study of Cyprus' landscapes and of the island's early 1st-millennium BCE sociopolitical narrative at the transition from Late Bronze Age polities to Iron Age ones (Fig. 2). During the "crisis" that ended Late Bronze Age international trade systems and destroyed several large polities around the Mediterranean ecumene at the end of the 2nd millennium BCE, ca. 1200 BCE (Ward and Joukowsky 1992; Cline 2014), a combination of instabilities, both internal and external, broke apart the existing network of complex, regional polities on Cyprus, and its populations abandoned the major urban centers over a period of 1-2 centuries (Iacovou 2014a: 661). While a few of these sites (e.g. Hala Sultan Tekke, Palaepaphos, Kition) have evidence

[16] For extensive (and problematized) discussion of the identity of Cyprus as "Alashiya" in the el-Amarna tablets and other Late Bronze Age documents, see Knapp 2008: 298-335.

[17] The damaged stele indicates that these were seven kings, although the local meaning of that word (*sarri*) on Cyprus remains in question. On Neo-Assyrian engravings mentioning exotic foreign imports see Harmanşah 2012: 69.

[18] According to Radner (2010: 442), the mountain mentioned is likely Stavrovouni, the imposing peak that overlooks Kition (modern Larnaca) and the southeastern coast. The stele was found in the excavations at Kition *Bamboula* in 1845, but its exact findspot is unknown. See Harmanşah 2012 on Neo-Assyrian commemorative inscriptions.

dating from the 12th and 11th c. BCE, particularly in ritual or sacred areas, it is not until the 10th-9th c. BCE when evidence of new large settlements and their extramural necropoleis becomes more apparent: most of these Iron Age sites are positioned (similarly to LBA ones) along the coasts of the island, such as Amathus, Salamis, and Kourion, as well some situated inland, at Idalion, Tamassos, and Ledra. Each site, interpreted as a regional, autonomous polity, is presumed to have been ruled by a *basileus* (king), based on epigraphic and literary evidence, until the end of the 4th c. BCE (Iacovou 2014b).[19] In addition to major excavations at these sites, revealing large administrative complexes and storage areas, survey evidence from around the island also indicates non-urban settlement systems taking shape by the 8th c. BCE (Rupp 1987). By this period, Cypriot ceramic and copper products re-assume significant presence in coastal emporia and sites around the eastern Mediterranean (Broodbank 2013: 489). Inscribed objects hint at three distinct scripts in simultaneous use on the island: a Semitic language using the Phoenician alphabet, the Arcado-Cypriot dialect of Greek, and a local, undeciphered language using the local syllabic script called Eteocypriot (Given 1998; Iacovou 2014b: 797).[20]

Where then does Sargon's royal inscription and the practice of Neo-Assyrian place-making fit within this framework of Cypriot polities?[21] On the one hand, scholars concede that there is little indication, within Neo-Assyrian inscriptions or in the material record, to suggest that the Neo-Assyrian Empire conquered Iadnana or exerted any military presence on the island (Reyes 1994: 52-3; Iacovou 2002: 83). Rather than outlining a system of direct power, the inscription alludes to the negotiation of the Cypriot polities as mercantile client states (Iacovou

[19] A typical "endpoint" for the Iron Age kingdoms is the mid-4th c. BCE when the Ptolemaic state conquered Cyprus and forced it under the leadership of a single general, or *strategos*. See e.g. Papantoniou 2012; Iacovou 2002.
[20] West (1997: 612-613) posits that there were likely more languages in use: Luwian, Hurrian, and Ugaritic, among others.
[21] On Neo-Assyrian place-making see Thomason 2001; Lumsden 2004; Harmanşah 2007.

2002: 83). In a period with meager archaeological and even sparser documentary evidence, however, the mangled inscriptions of Sargon II's stele act (ironically?) as a benchmark to which discussions of 1st-millennium BCE polities consistently return (Satraki 2013: 126). The "seven kings of Iadnana" have become metonyms for seven distinct political entities in the late 8th c. BCE – each king equating to a kingdom *in toto*. Later inscriptions of the Neo-Assyrian kings Esarhaddon (ca. 673-2 BCE) and Ashurbanipal (ca. 667 BCE) mention Iadnana, and list the names of ten cities as well as ten kings, some with Greek names, some Phoenician (Yon 2004: 54-5).[22] The arithmetic results in a new 7th c. BCE political geography on Cyprus: ten kingdoms for ten kings (e.g. Iacovou 2002: 81).

Conventional thought on the period has used the lists of tribute-bearing kings and their cities as a type of formula for polity-formation and for the distribution of regional polities on the island (e.g. Fourrier 2013; Iacovou 1994, 2013a; Papantoniou 2012).[23] But as Clifford Geertz (1980: 6) has cautioned, fragmentary records can lead either to "endless controversies about hypothetical matters of fact" or to "the fabrication of a connected 'story' which, though it looks like history, is really retrospective crystal gazing." His caution is well taken in the case of Cypriot Iron Age polity-formation, in which fragmentary sources are used to reconstruct monarchies, a process which Franz Maier (1985: 83) has warned can be "unsafe (if not downright factoid-prone)." There is available space, therefore, both to question existing

[22] There is considerable debate over the names of the 10 cities listed in the later Esarhaddon prism (673 BCE): Idalion (Edial), Chytroi (Kitrusi), Soloi (Silliu), Paphos (Pappa), Kourion (Kuri), Tamassos (Tamesi), Ledra (Lidir) and Salamis (Sillua?). Two other names, Qartidihast and Nuria, have no equivalents to Cypriot sites, and many have pushed to define them as Kition and Amathus respectively, which are missing from the list, yet are assumed to have held influence in the 7th c. BCE. See the discussion in Iacovou 2002; Collombier 1991; Satraki 2013.

[23] Satraki (2012) for instance uses 707 BCE as the *terminus post quem* for the age of the kingdoms, and 310 BCE as the end.

synthesis on the Cypriot polities and to complement the subject of their development using a perspective focused on landscape, space, and environment.

In this chapter I introduce the evidence for Iron Age Cyprus and then examines the prevailing ideas on how political entities formed (and how they functioned) through a discussion of two larger concerns of perspective and methodology: 1) a linear framework of "collapse" and "post-collapse" dynamics in the study of sociopolitical re-generation and re-formation on Cyprus in the early 1st millennium BCE, and 2) an investigative focus on the metonyms of king and city, and the widely-used term "city-kingdom." I will argue that these concepts have led to an obscured understanding of what these polities actually *did* (Smith 2011: 419).

The early 1st millennium BCE: a brief review of the evidence

First: what do we know about early 1st millennium BCE land use, settlement, or economic practices on Cyprus – a period that is "affluent in cemeteries but destitute of settlements" (Iacovou 1999: 144; 2005b: 125)? Aside from the above-mentioned Neo-Assyrian stelae, the corpus of textual references to the polities of Cyprus consists of local inscriptions in Greek and Phoenician dialects, and later Greco-Roman documentary and literary sources (Cannavò 2010b; Rupp 1997).[24] More numerous are objects and architecture recovered from mortuary and sanctuary contexts, and studies of these materials have tended to overshadow investigations of settlement, economy and industry (Janes 2010; Smith 2009; Given and Smith 2003; Iacovou 2014c: 166). While few scholars have referred to the period as a "Dark Age" (but see Rupp 1987; Desborough 1972; Casson 1937: 70), due to the island's on-going importance in 11th-8th c. BCE maritime trade (Sherratt and Sherratt 1993; Sherratt 1994, 2000; Broodbank

[24] See Satraki 2012 for a thorough examination of the sources for the *basileus* and its diachronic trajectory. For a detailed but thematic discussion of textual sources, see **chapter 7.**

2013: 450), many still define the period by its archaeological invisibility (Coldstream 1985; Rupp 1997; Janes 2008). Several projects have recovered materials from this period that remain to be published, such as those of the important polities of Idalion and Marion, while sites in the north of the island have remained tragically inaccessible since 1974 (but see recent work by Diakou n.d.).[25] And, evidence of many 1st millennium BCE sites exists beneath most of the major urban areas on the island today (Iacovou 2014b), complicating and hindering investigations (Rupp 1997).

After the abandonment of LC sites by the mid-12th c. BCE, there is a shift to new settlements by the 11th c. BCE, some of which are only indicated by groups of tombs (Todd and Warren 2012: 50-51; Iacovou 1994). As noted above, the sites of Kition and Palaepaphos offer evidence of inhabitation and ritual practice continuing through the 12th-10th c. BCE (e.g. Karageorghis 1976). Two sites established in the late 13th/12th c. BCE, Maa *Palaekastro*[26] on the southwest coast and Pyla *Kokkinokremnos* on the eastern coast, suggest what might be a practice of founding temporary, fortified settlements, due to the short-lived nature of their occupation (Georgiou 2012; Karageorghis and Demas 1988; Keswani 1996: 234). Excavations at the major sites of Palaepaphos, Salamis, Amathus, Kition, and Idalion have uncovered segments of large buildings, often associated with spaces for storage or craft production, as well as some indication of city walls.[27] While estimates of urban site size are debated for the preceding LC period (see

[25] See also recent publication of exhibition of material from Polis *Chrysochous* (the polity of Marion/Arsinoe) in Childs *et al.* 2012. The year 1974 marks the highpoint of the crisis that began on Cyprus in the early 1960s, pitting ethnic/social groups and political parties against one another, culminating in the Turkish invasion and resulting in the current demilitarized zone separating the island into two parts, one an EU nation and one internationally un-recognized (the Turkish Republic of North Cyprus).

[26] Cypriot localities consist of two names: the name of municipal district, like Maa, and the name of a local toponym, often related to a feature of the landscape, like *Palaekastro* ("Old Fort"). Common practice italicizes the second name, as used throughout this work.

[27] For Palaepaphos: Iacovou 2008c; Maier and Karageorghis 1984; Salamis: Blackwell 2010; Kition: Smith 2009; Karageorghis 1976; Amathus: Blandin *et al.* 2008; Hermary 2013; for a recent treatment of large monumental architecture see Hermary 2013.

e.g. Iacovou 2007a; Manning *et al.* 2014), there is less understanding of 9th-8th c. BCE residential or urban site size, or corresponding estimates of population.[28] As a possible comparison, contemporary centers on the island of Crete were around 1 ha in the 11th-9th c. BCE but could range between 10 and 15 ha by the 7th c. BCE, such as Azoria in the Kavousi region (Haggis 2005: 34-35) or Phaistos in the Mesara plain (Watrous *et al.* 2004: 24-25). Outside of the urban centers on Cyprus, survey evidence suggests a range of village sites as well as the broad category of "small rural site" or "farmstead" which connected major centers on the coast through river valleys to inland resources (e.g. Pettegrew 2001 and references; Iacovou 2012). The classical farmstead site of Panayia *Ematousa*, near the south-eastern coast of the island, contained some evidence dating to the 8th-7th c. BCE (Sørensen and Winther Jacobsen 2006), but the need for other rural (and urban) excavation material is critical to filling this gap in our understanding of domestic settlements.

[28] For a discussion of settlement size as it relates to regional population, see **chapter 5**.

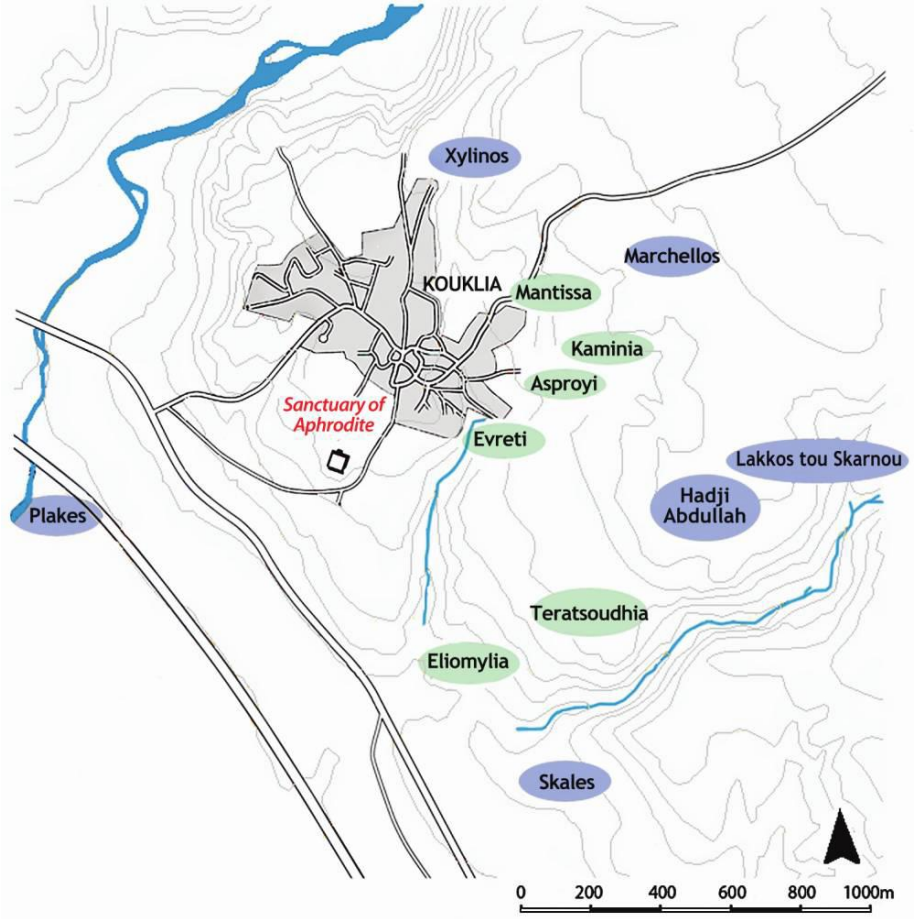


Fig. 1.3. Cemetery groupings around the site of Palaepaphos (modern village Kouklia), showing LBA tomb areas in green, and shift to extramural IA burials (purple) in elevated areas around the site and sanctuary (Janes 2013: fig. 5)

Also indicative of novel settlement practices are the extramural cemeteries that have been recorded surrounding several of the 1st millennium BCE sites (Janes 2008, 2013). While burials tended to be placed within, under, and between lived spaces in the preceding LC period, and were likely used to mark out certain social groups through the placement of later buildings (Manning 1998), necropoleis established outside city walls characterize later Iron Age settlement configurations (Hatzaki and Keswani 2012: 318-319, 322; Fig. 3). In addition to shifts in the placement of burials, funeral practices became "epic" (Hatzaki and Keswani 2012): multiple bodies were placed in rock-cut tombs with long entranceways (the *dromos*), sometimes with architectural embellishment (as at Tamassos). Tomb offerings grew in opulence, including the

entire sacrificed horse and chariot groupings outside of Tomb 40 at Salamis, dating to the 8th-7th c. BCE, which recall Homeric funerary practice (Blackwell 2010; Rupp 1987).

Sanctuaries mark an additional departure from LC social and political practice, and significant research has investigated the construction, use, and material culture associated with demarcated ritual areas both in urban centers (such as the temenos of Aphrodite at Palaepaphos or the temples at Kition, Karageorghis 1976: 55-57) as well as between them (Fourrier 2002; Ulbrich 2008; Papantoniou 2012).[29] Ritual assemblages – terracotta figurines, simple temenos walls – are also among the most diagnostic surface assemblages dating to the transition to the 1st millennium BCE (Given *et al.* 2013: 7; Janes and Winther-Jacobsen 2013a). It is possible also that communities in the 11th-7th c. BCE were using smaller, temporary shelters for independent practice rather than public spectacle. The much later 5th c. BCE example of *Laxia tis Skhistis* near the Iron Age polity of Soloi could offer such a template: a small rock-cut cavity, filled with incense burners, amphorae and other vessels, strainers, lamps, bull statuettes, and animal bones (Loulloupis 1989).[30]

The economic structure of the period is, as David Rupp (2001: 114) has noted, "recalcitrant." Many argue that Cyprus' economy was not halted in the 11th c BCE because of the continuing evidence for copper manufacture and trade and the early adoption of iron (e.g. Karageorghis 1994: 1; Bikai 1994; Broodbank 2013: 450; Sherratt 1994: 60; Kassianidou 2014). Mining and copper production were certainly an important part of the developing 1st millennium BCE Mediterranean economy, and have been treated in detail elsewhere in relation to production sites as well as to evidence of metallurgical innovation in the urban centers (e.g. Kassianidou

[29] The study of these urban and "extraurban" sanctuaries has been an important field in Iron Age scholarship, as discussed below and in **chapters 5** and **6**.

[30] See also the possible rock-cut ritual space found at Ayia Varvara *Almyras*, a 6th-4th c. BCE copper mining and production site in the central part of the island (Kassianidou 1994).

2013; Sherratt 1994, 2000; Fasnacht 1999; Hadjicosti 1999: 37-8).[31] Ship-building was also an important industrial enterprise (Iacovou 2014c: 168), and later sources such as Theophrastus (Strabo 14.6.5) noted Cyprus' rich timber resources, but evidence for the harvesting or selling of wood is difficult to find for the early 1st millennium BCE.[32] Also poorly understood are other facets of the economy that would have supported and complemented intensive mining and copper production and trade, and particularly those practices related to subsistence. As Maria Iacovou (2014c: 161) has cogently noted, the soils of the semiarid terrain of Cyprus would never have been able to support an industrial scale of agricultural development or the export of cultivated goods; nonetheless, more attention is needed to begin to interrogate how populations sustained local subsistence regimes, and how cultivated or pastoral products fit within the local economy.[33]

It seems probable that communities of the 11th to 8th c. BCE had a diversified agropastoral economy (Rupp 2001: 123; see Halstead and O'Shea 1989b: 123-4). If we look to contemporary Levantine cultivation and pastoral regimes for comparison, a system of low-intensity subsistence practices is common, characterized by an integration of agriculture and pasturage that was locally contingent, non-specialized, and strategic for the risks of a semiarid environment (Lev-Tov *et al.* 2011). From survey work on Crete, a shift in settlement during the Proto-Geometric period to control more arable land also suggests the increased significance of both cultivation and animal subsistence (Wallace 2010; Moody 2012: 242-243; Klippel and Snyder 1991). Risk-averse animal economies also make up the earlier part of the Cypriot Bronze

[31] Hadjicosti (1999: 38) suggests that an early LC/CG "industrial" area of Idalion, before settlement moved in the later CG period, had kilns, based on the amount of ash.
[32] For discussion of Theophrastus' statement about timber see **chapter 3** and **chapter 7**.
[33] In **chapter 5**, I discuss geomorphology and soils, and in **chapter 7**, I address the literary evidence for the subsistence economy of Cyprus, most notably within Strabo's description of Cyprus in his *Geography* (14.6.5).

Age, in contrast to the more intensive pastoral and agricultural practices of the Late Bronze Age (e.g. Spigelman 2008; Leon n.d.). It is therefore worth considering whether populations of the 11th to 9th c. BCE had constructed a subsistence regime marked by low-intensity, diversified cultivation and mobile strategies (Abdi 2003; Salzman 2004: 138-9). The evidence for the period's pastoral practices is minimal at this time, given the skew in faunal or archaeobotanical evidence from sanctuary sites (Reese 2013).[34] Only one published example of a press, found within a tomb at Kouklia *Skales*, dates to the late 11th c. BCE (Hadjisavvas 1992: 27), while by the 8th to 7th c. BCE, evidence of presses emerges again at sites such as Nicosia *PASYDY* (Hill of St. George) and Mari *Kopetra* (Hadjisavvas 1992: 85).

Previous approaches to the formation of 1st-millennium BCE polities

"We would do well to keep a keen eye for what are known as 'emergent properties,' as opposed to fully fledged systems, often evolving independently with little coordination amidst a wild-growth of alternatives" (Broodbank 2013: 22)

Cypriot archaeology, as a field, has tended to reserve the term 'emergence' for such prehistoric phenomena as the arrival of human populations and occupation of the island in the earliest Neolithic (e.g. Knapp 2013: 43-80; Held 1993), the growth of networks of villages and copper production in the Bronze Age (e.g. Frankel and Webb 2013), and the development of social complexity, urbanism, and international trade in the Late Bronze Age (e.g. Knapp 1994; Manning 1993; Manning *et al.* 2014). Discussions of the political organization of the 1st millennium BCE, however, seem to regard emergence as a fraught word, because it anchors a central debate about polity-formation which opposes 1) the early growth of the polity in the 12th-11th c. BCE, whose structures of rule took their definitive forms by the 9th c. BCE, with 2) an

[34] In **chapter 6** I will turn to a more in-depth survey of this zooarchaeological (and archaeobotanical) evidence.

episode of discontinuity after the Late Bronze Age (12th c. BCE) and subsequent secondary-state foundations beginning in the ca. 8th c. BCE. Others have outlined and described the two positions in detail (Cannavò 2010a; Petit 2001; Blackwell 2010; Knapp 2008: 281-97). What follows is a brief summary of their central theses with which to expose their basic conceits.

The "Traditional"/continuist argument

The first position developed in the early 20th c. during Einar Gjerstad's work with the Swedish Cyprus Expedition (SCE) on Iron Age art, architecture, and ceramics (1948; see Maier 1986: 314-16). Anna Cannavò (2010a: 39) has referred to it as the traditional theory because of its reliance on culture-historical theory, as well as its endurance.[35] In brief, scholars such as Anthony Snodgrass (1988),[36] Nicolas Coldstream (1985, 1989, 2012), Hector Catling (1994), Vassos Karageorghis (1986, 1990, 1994, 2000) and most recently Iacovou (e.g. 1989, 1994, 1999, 2002, 2008a, 2013a) and others (Satraki 2010, 2012; Papantoniou 2012; Georgiou 2012) argue that the kingdoms attested in Sargon II's inscription took their initial shape sometime in the 11th c. BCE after migrant populations fled from the Aegean region and its collapsing palatial centers, and arrived on Cyprus. These groups brought with them their styles of material culture (in the form of everything from pots to bathtubs), their formulations of hereditary royal power,

[35] Morris (2006) refers to similar arguments for continuity between Bronze Age and Iron Age societies in Greece as 'gradualist'. Whitley (1993: 227) took a more critical stance in suggesting that arguments for continuity have a deep tradition in late 19th c. attempts to see Greece as the evolved product of Mycenae, reinforced by classical focus on linear progression in Greek (e.g. Mycenaean to classical) art. For the prominence of culture-historical thought in Cypriot archaeology see Antoniadou 2004: chapter 1; Leriou 2007. As Knapp (2013: 29) notes, this culture-historical school developed on Cyprus under the British colonial regime, then under independence in 1960, followed by the violent incursion of Turkish forces in 1974: "during this time, Cypriot identity and its relationship to Cyprus' past were constantly being scrutinized and manipulated," leading to an archaeology deeply sensitized to national and supranational concerns.

[36] Snodgrass is also known for his arguments of Late Bronze Age to Iron Age continuity in the Greek mainland, e.g. 1980.

and their language (Iacovou 2002: 84-85, 2006).[37] The motivations behind these migrations are seen as economic, not colonial (Iacovou 2013a; see Sherratt 1998), but once these populations established themselves, they quickly became the regional authorities, and "perpetuated the political system of kingship which was prevalent in the Mycenaean mainland" (Karageorghis 2009: 20).[38]

For Iacovou (2008a: 650), these *basileis* were likely the leaders of immigrant groups and were principally economic officers in charge of the industry of copper metallurgy. In this sense *basileus* more closely aligns with its Late Bronze Age connotations of "chief or governor" as opposed to the *wanax*, "king" (West 1997: 15). Her argument works from 7th c. BCE Cypriot inscriptions that first mention the "*pa-si-le-wo-se,*" a relation to the "*qa-si-re-we"* known from Linear B tablets of the preceding Late Bronze Age period in the Aegean and that referred especially to those chiefs in control of bronze-working (2006: 328):

> That the Cypriote Iron Age *basileus* was hardly more than an industrial plus agricultural resource manager, ruling operations from a primary center (the capital), is clear even from the limited material evidence.

The Mycenaean form of authority acts as a critical conduit for the Iron Age *basileus* in this argument, yet the function of this latter position remains vague (Coldstream 2012: 12). This model strives to integrate both the "Great Man" historic centrality of the *basileus*, through mostly epigraphic sources, with the anonymous, migrating collectives who conditioned his power and who "behaved in an orderly fashion" (Iacovou 1999: 150; see Sahlins 2004: 125-158).

[37] Baurain (1984) and Vanschoonwinkel (1991) have argued instead for the predominance of Anatolian migrants establishing control of Cyprus.

[38] Maier and Karageorghis (1984: 20): "There is no unequivocal evidence of the political state of Cyprus in [the] 'Dark Age.' But there are good reasons to assume independent city kingdoms were already then formed in the island, combining elements of Mycenaean kingship with traditions of the Canaanite city kingdoms of Syria."

Scholars who favor the continuist argument have termed the 12th-11th c. BCE influx of Aegean migrants the "Hellenization" of Cyprus (e.g. Karageorghis 2001, 1994; Iacovou 1999), based on the appearance of Aegean-type material culture at cemetery sites like Palaepaphos *Skales* (Karageorghis 1983) and Gastria *Alaas* (Iacovou 2014b: 800), and the dominance of Greek-speaking populations on the island (as seen in written sources) by the 7th c. BCE (Coldstream 1989). There are also the epic stories of Greek heroes arriving on Cyprus and founding cities, such as Teucer[39] at Salamis or Agapenor[40] at Paphos, which have been used to connect a proto-memory of Hellenic migration with the foundation of the later polities (cf. Gjerstad 1944).[41] An 11th c. BCE bronze object, the "Opheltas" *obelos* (spit used in meat consumption) from tomb 49 at Palaepaphos *Skales*, spelled the Greek name of the owner using a local syllabic script (Masson and Masson 1983; Iacovou 2013a: 138-140; Fig. 4), confirming the presence of a Greek-speaking authoritative (or at least wealthy) class in this polity and on the island more generally.

Fig. 1.4. Opheltas *obelos* discovered at Palaepaphos *Skales* (Knapp 2008: fig. 62)

The integration of different languages on the island has led to wide-ranging discussions on the thorny concept of ethnicity during this period on Cyprus (see Voskos and Knapp 2008).

[39] Aes. *Pers*. 892, Pind. *Nem* IV. 75, Strabo 14.6

[40] Paus. 8.5.2, Strabo 14.6.3, Tac. *Hist*. 2.3

[41] At one extreme, Given (1991) claimed that the function of this archaeological model was to provide independent evidence for Mycenaean immigrations and "to prove the truth of ancient Greek foundation legends." See also Merrillees' (1975) criticisms of the widely used conflations of Cypriot material culture and ethnicity and what he called the "invasion syndrome" in Cypriot historiography.

As noted above, the languages include Greek, Phoenician, and "Eteocypriot" – a term created during the British colonial period to describe the ancient local, non-Greek and non-Phoenician residents (Janes 2010; Given 1998; Iacovou 2005b, 2008, 2013a; Sherratt 2005; Knapp 2008: 281-97).[42] It would be difficult to avoid discussions of the increased mobility of groups in this period given what we know about developing maritime trade and the onset of 8th-7th c. BCE practices of colonization (Morris 2003; Sherratt and Sherratt 1993; Broodbank 2013: 506-534). On a highly accessible island such as Cyprus, trade, migration, and movement would have resulted in a complex entanglement of ideas, people and material assemblages (Knapp 2008: 30-61). A rigid focus on ethnicity, however, is not a productive way to analyze shifting political and social order, and has in part confined the study of Cypriot identity to language use (see Voss 2008: 25). More importantly, as others have highlighted (Knapp 2013: 30-33; Knapp and Antoniadou 1998), the complicated history of archaeology's union with colonial and postcolonial contexts on Cyprus has created deeply potent concerns of ethnicity and heritage. In this dissertation, I focus broadly on the materials and places that can indicate social bounding and processes of identification during the development of 1st millennium BCE polities (see Stark 1998; Emberling 1997; Meskell 2002).

According to the traditional arguments for political organization, Aegean practices conditioned the island's trajectory and material culture, in effect "reorganizing the island" along regional but distinctly Hellenic lines (Iacovou 1999; Karageorghis 1990). This approach stresses continuity between 11th and 8th-6th c. BCE political entities across the island, although there is debate over the actual structure of the polities that emerged (Iacovou 2007b). Iacovou (2008a) cautions for example that Aegean migrants claimed authority in some regions early on, as at the

[42] For a critique of the term "Eteocypriots" and its colonial underbelly (used by the British to distance modern 20th century Cypriots from Greek ancestry) see Given 1998 and response in Petit 1999.

site of Palaepaphos, where there is evidence for the erection of the temenos of Aphrodite by 1200 BCE, while in others they did not. While not denying that major transformations – especially material - occurred between the 12th and 11th c. BCE, she asserts that the fundamental elements of kingship, script, and economy persisted using a distinctly Late Bronze Age form of territorial segmentation and autonomous political organization (Iacovou 2013b).[43]

It is worth briefly reviewing the current scholarship on Late Bronze Age political organization on Cyprus, since Iacovou's (e.g. 2002, 2014c) work explicitly argues for a system of political segmentation and inter-polity competition that prehistoric archaeologists have employed for these earlier contexts (see Knapp 2013: 432-38). There are two prominent schools of thought in the debate on Late Cypriot political and social organization, and they diverge on how power was obtained and used. On the one hand, scholars such as Bernard Knapp (2013, 2008, 1994; see also Peltenburg 1996) argue for an island-wide polity, with a primary center most often identified as Enkomi on the east coast,[44] which oversaw, through absolute rule, the intensifying production and trade of copper on and off the island (Muhly 1996).[45] This argument is mostly supported through 2nd millennium BCE textual accounts of international gift exchange naming one "king of Alashiya" as well as a suite of recognized artifacts found at the largest Late Cypriot settlements (e.g. Webb 1999: 307-308).[46] On the other hand, Priscilla Keswani (1993, 1996) has argued for a model of inter-urban competition between several regional polities,

[43] On territorial segmentation, see discussion in **chapter 2**. Iacovou (2008a: 1) also uses the phrase "indelible island-human identity" that was established after the Greek language rendered "obsolete" the pre-Greek ones. Iacovou (2012) argues for this main distinction with the other *megalonissos*, Crete, whose central authority in the Bronze Age radically differed from the apparent polity-network on Bronze Age Cyprus.

[44] See also Brown 2013. Other arguments suggest that Kalavasos *Ayios Dhimitrios* was the "capital" (e.g. Goren *et al.* 2003).

[45] Knapp (2013: 437) is perhaps most vocal about a central island-wide authority through the entirety of the Late Bronze Age; Peltenburg (1996), on the other hand, sees Enkomi as the primary center only in the 16th-14th c., followed by dramatic re-orientation and segmentation in the 13th c. into regional polities.

[46] Here, the textual documents are mostly the el-Amarna letters, which state that the copper-producing international player "Alashiya" had a single 'king', Knapp 2013: 434, 438-9; 2008: 335-41.

supported by evidence for distinct administrative practices, including texts and storage, in several sites of varying size, as well as the use of fine goods, such as precious metals and decorated wares, for elite display (Manning 1998). In addition, this argument cites the lack of consistent monumental style or of images of a centralized authority or kingship on the island. In this type of decentralized, peer-polity model, sites dispersed across the island challenged and interacted with one another through market-oriented exchange for control over productive regions or trade routes (South 2002).[47] Other versions of this argument emphasize the economic and administrative power of Late Cypriot elites, who developed out of merchant groups through entrepreneurial, inter-group competition (e.g. Manning and de Mita 1997; Merrillees 1992).

In arguments for a system of peer polities in the LC period, the "king" is the *primus inter pares* in a network of regional authorities reproduced through displays of kinship, political alliance, and wealth (e.g. Manning and de Mita 1997). While the debate itself has been criticized for focusing at the macro-scale and only on elites in relation to political economy (Leon n.d.; Andreou n.d.), these attempts to understand Late Bronze Age political organization do make use of considerably disparate lines of evidence to explore the relationships between commerce and control of resources, between international royal insignia and local aggrandizement. The seven kings mentioned in the Sargonid inscription, therefore, seem to confirm that the autonomous territorial polity was a persistent form of political organization on the island, rather than any type of centralized authority (Iacovou 2013b). In this way, Iacovou (1999a: 150; 2005a, 2013a) frames a distinction between regional polities, on the one hand, and the "cultural homogenization" of the communities of the 11th and 10th c. BCE, a pan-Cypriot "koine," based

[47] Keswani's model of heterarchical polities is of course more detailed than the brief description given here, involving kin-based negotiations over access to trade in coastal areas in the north and east, as well as substantial corporate groups located in more centralized, hierarchical systems in the south. For a recent discussion see Knapp 2013: 435-7.

on similar ceramic styles and tomb configurations in excavated (mostly mortuary) contexts across the island (see also Papantoniou 2012). Thus the "*basileus* was never but one homogenous institution" throughout the territorial polities, regardless of social or cultural practice (Iacovou 2006: 330).

Voskos and Knapp (2008: 661) have criticized the argument that Greeks quickly took up positions of power in Early Iron Age Cyprus for "assum[ing] that high culture, like water, flows downhill."[48] The traditional model confusingly argues that the breakdown affecting other places of the Mediterranean at the end of the 2nd millennium BCE had less of an impact on Cyprus' regional Late Cypriot polities, but allows for new residual Mycenaean migrants to establish themselves easily within local seats of power. As one of the major thinkers of Iron Age archaeology on Cyprus, Iacovou has recently, and expertly, cautioned against reducing the period to endless debates of cultural dominance (Counts and Iacovou 2013: 3):

> The long-standing (and tired) debates about the date of the formation of the kingdoms, their origins in endogenic vs. exogenic episodes, the (often) colonialist narratives of foreign influence, and the preoccupation with parsing the "ethnic identity" of the multilingual populations of the island has continued, for too long, to stagnate the field.

Iacovou emphasizes internal dynamics on the island during the "foundation horizon" of the city-kingdoms, the 11th – 8th c. BCE, and their "consolidation horizon," the 7th – 4th c. BCE (e.g. Iacovou 2006, 2012, 2013b).[49] It is in this latter phase, characterized by overt displays of wealth and power in tombs such as at Salamis (see Blackwell 2010; Janes 2013), that Iacovou argues the communities fused into political entities in order to respond to the trade afforded by the Neo-Assyrian empire. Rather than force outside models on Cyprus, Iacovou pushes for the

[48] "In such arguments, the superiority of Mycenaean culture, as well as its inevitable passive acceptance by native Cypriots, is taken for granted" (Voskos and Knapp 2008: 661).

[49] Iacovou (2013a) argues that all the kingdoms were founded no later than the CG period, either building upon earlier sites or newly established in the 11th/10th centuries BCE. On her earlier arguments for the transfer and 'ascendancy' of Aegean forms see Iacovou 1989, 1994, 1999, 2002.

"uniqueness of the *basileus* phenomenon" and the "individuality of the Cypriot institution" (2006a: 330) in what she names the "Cypro-centric" approach, now adopted by others (e.g. Counts and Iacovou 2013b; Papantoniou 2013; Fourrier 2013; Satraki 2013). This within-island point of view indeed provides fresh insight by considering local and pan-island changes rather than always looking at external influencing factors.

One important achievement of work arguing for continuity is the rejection of the arbitrary dividing line between the Bronze and Iron Ages. Iacovou (e.g. 2013b: 16) has long upheld an approach to Cypriot archaeology that does not recognize this severe break as a significant historical fault line, one which all too often segregates the study of the 1st millennium from work on earlier periods.[50] She strongly urges a "thousand-year macrohistoric view" on the 2nd and 1st millennia, which she and others have referred to as the "*longue durée*," the lasting time scale of deep-rooted structures as conceived by the French Annaliste historian Fernand Braudel (1980; see e.g. Iacovou 2013b; Papantoniou 2012, 2013: 34; Satraki 2012).[51] This usage of Braudel's terminology seems to serve both as a signifier of extended time periods (e.g. the second and first millennia studied together, Iacovou 2007b; Papantoniou 2012), as well as a sort of burden of temporality for modern scholarship, as argued by Iacovou (2002: 74): "the historic centers of Iron Age Cyprus have been the victims of their very own *longue durée*."[52] While this

[50] Iacovou (e.g. 2008a) has critiqued, for example, the work of prehistorians who consistently end their discussions with the terminal point of the Late Bronze Age, and go no further than the intermediate years before the beginning of the "age of the city-kingdoms." For a discussion of prehistoric/post-prehistoric distinction in Cypriot archaeological thought, see **chapter 3**. For Knapp's response to Iacovou, see 2008: 430.

[51] Braudel's view of history – as conceived in his *La Mediterranean et le Monde Mediterranean a l'epoque de Philip II* (1949) - rejects the primacy of recorded events and uses a tripartite, multiscalar approach to human-environment relationships, moving from slow and persistent structures (*la longue durée*), to broad socio-economic cyclical phases (*conjonctures*), to episodic history seen in coronations, coups, and battles (*histoire evénèmentielle*; see Shaw 2001; Horden and Purcell 2000).

[52] Iacovou (2002, 2013b) seems to evoke Braudel's work *longue durée* merely as "long term," when in context she actually is discussing the social history of the medium scale, in Braudel's tripartite schema. Papantoniou also uses *longue durée* to denote broadly the "long term" and "transformations and possible change of meanings" (2013: 34); see his (2012) work on *mentalites*.

appropriation of Annaliste terminology lacks the full force of the conception's original geologic and environmental underpinnings (e.g. Braudel 1980), the intent to take a diachronic perspective to social and political transformations has given traditional Iron Age studies of art history and ceramics much more breadth.

Secondary-state formation

A second paradigm argues for a break between the Late Bronze Age and the early 1st millennium BCE, or rather, the later development of the kingdoms sometime in the 8th c. BCE. Rupp advocated this position in the 1980s, following the Canadian Palaipaphos Survey Project's (CPSP) findings on settlement patterns and political economy in the southwestern region of the island (e.g. Rupp 1986, 1987; Rupp and Sørenson 1993; see Knapp 2008). Rupp (1987), one of the directors of that project, argued that Cyprus had indeed entered a culturally stagnant Dark Age in the 11th and 10th c. BCE when the drastically reduced populations of the island gathered together into petty chiefdoms following the breakdown of LC systems (see also Petit 2001). With the arrival of Phoenician merchants at coastal trading sites such as Kition in the 9th-8th c. BCE (CA I), who introduced Assyrian goods to Cyprus, these Cypriot leaders aggrandized their political positions by trading for and conspicuously displaying eastern luxuries. The competition between elites becomes a recurring feature in the iconography of the period's ceramics, for example in scenes of warriors and hunting, which some (Hamilakis and Sherratt 2012: 201) argue indicate a new "action-man ideology." With these practices, local elites elevated the political landscape of the island to one of states ("city-kingdoms") consisting of three distinct, hierarchical social classes (Rupp 1987).[53]

[53] Rupp is one of the only people to use the word "state" for the 1st-millennium BCE polities on the island, and gives a distinct chronological (rather than spatial) evolutionary explanation for its development: "Thus Kition

This secondary-state argument, influenced by processual archaeology and neo-evolutionary models of social complexity, regards the re-instigation of state-like entities as an external phenomenon driven by demand for natural resources, contacts, and luxury goods (Rupp 1987: 153).[54] Rupp reframed Marxist theory, with particular emphasis on modes of production via hinterland zones, to understand the political economy (2001). His spatial analyses mapped settlement hierarchy within the "definable spatial limits" of the state (1987: 148), including a three-tiered system of large fortified urban settlements, "fair-sized" town-like settlements, and small settlements in the Paphos area (1986). He also investigated how conspicuous consumption and elite manipulation of symbols in the use of prestige goods allowed certain groups to gain and maintain control, mostly through enclaving objects in elite burials (1989). Yet his model equally understood the Cypriot populations as inferior and subordinate to their Mediterranean colonizing neighbors (1986). Rather than interpret city-kingdoms as residual LC authorities, Rupp (1987: 155-6) was explicitly concerned with documenting the rise of the archaic state in the 1st millennium BCE, arguing that the Cypriot evidence provided a "classic example" of secondary-state formation; his interest in political economy and settlement networks were the first of their kind for the period and have proven to be important alternatives to the traditional model.[55]

Beyond the argument for secondary state-formation and the traditionally accepted model of continuity and Aegean-influenced rule, others such as Thierry Petit (2001) and to a lesser extent Knapp (2008; Voskos and Knapp 2008) and Cyprian Broodbank (2013: 449-451) have

established in 900/850 BCE is the *terminus post quem* for the emergence of the state on Cyprus" (Rupp 1986). See Iacovou 2014c for "micro-state."

[54] "The political and military actions of the Assyrians and Phoenicians were prime forces that caused the emergence of the Cypriot states" (Rupp 1986).

[55] For recent critiques of these neo-evolutionary paradigms, and of the terminology of the state more generally see e.g. N. Terrenato and D. Haggis eds (2011 *State Formation in Italy and Greece*, David Brown Books); Smith 2003: 33-53. I discuss Rupp's arguments about political economy more fully in **chapter 6** using the archaeological survey evidence.

framed the formation of the Iron Age using social theories of connectivity, identity and power. Petit (2001) has challenged the assumptions of continuity on the basis of fieldwork at the large Palais complex at Amathus, where there is no settlement evidence before the late 9th c. BCE, judging by architectural similarities with the contemporary 9th/8th c. buildings at sites like Ayia Irini, Idalion, and Kition. While his understanding of the site's development also relies on strict social evolutionary trajectories from chiefdom to stratified state ("well-known path to statehood," 2001: 73),[56] Petit refreshingly challenges the predominance of later literary sources in the traditional view and calls attention to the lack of information on settlement data. Knapp (2008: 281-97; Voskos and Knapp 2008), in focusing on identity and hybridization, has challenged the traditional model on different grounds, critiquing the assumption that Greeks and Phoenicians *de facto* controlled the island because of some assumed cultural superiority. In addition, Knapp (2008) and others take an economic approach that stresses Cyprus' important position in emerging 9th and 8th c. BCE trade routes in the increasingly interconnected Mediterranean world, which introduced accompanying internal sociopolitical changes (Sherratt 1994; Janes 2010; Broodbank 2013).

Broodbank (2013: 450), in his recent *opus* on Mediterranean prehistory and history, has situated the island's 1st-millennium BCE narrative within studies of the interconnected populations in the 2nd millennium, arguing that "it is within this cultural mélange, rather than as a consequence of the oft-advocated discrete early Greek migrations, that we should understand the uptake and local substitution of a range of Aegean-derived traits." He argues that after the destructions of ca. 1200 BCE, and as a result of iron's gradual replacement of copper as a major trade good, unknown engagements on the island would have stimulated competition in maritime

[56] For the traditional quadripartite evolutionary typology moving from band to tribe, chiefdom, and state, see Sahlins and Service 1960.

trade. Broodbank (2013: 450) sees Cyprus occupying a leading position in trade, becoming "ever more heterogeneous" as it both exported fine goods and drew in materials from Rhodes, Euboea, the Levant, and Egypt. He, like Knapp, looks to the role of iron production and mercantile entrepreneurship, which took advantage of open-sea navigation, in the making of Iron Age Cyprus.[57]

Despite differences in approach, current analyses of the period's polity-formation share similarly broad concerns with configuring the place of the territorial polity within the changes in political and economic organization on Cyprus during the 1st millennium BCE. Integral to both approaches, moreover, is a prevailing interest in establishing the development and chronology of these new Iron Age formations. Given the strengths of existing work in producing detailed syntheses of materials and texts, we are now at a position to investigate the actual mechanisms and processes of rule that produced these 1st-millennium BCE political entities. One point of departure, from which we can begin to create a complementary approach to polity-formation, is dissecting the term "city-kingdom." As I will investigate below, "city-kingdom" provides little sense of the interactions, practices, and subjects who mediated the constitution of authority. The "elusive" nature of these mechanics (Iacovou 2013b) partly results from negative evidence for non-urban contexts, and from the processes that allowed for the creation of potential hinterland subjects of royal power and participants in inter-state order. In my opinion there are two dominant concerns of scholarly focus within existing attention to the "city-kingdom" that require some deconstruction before analyzing the polity from an alternative perspective of landscape and environment: a chronology framed by "collapse," and the identity and role of the urban king in shaping the polity.

[57] I offer a fuller discussion of metallurgical activity on the island in **chapters 5 and 6**. For a recent discussion of Cypriot copper and iron production in the Iron Age, see Kassianidou 2014.

Scepters and swords: the making of the "city-kingdom"

After collapse

The concepts of "after collapse" or "post-collapse" invite a number of questions, most centrally "what is societal collapse" and "why is it relevant"? The archaeology of early 1st millennium BCE Cyprus sits as if under the shadow of an enormous monolith that is the "Late Bronze Age collapse," introduced above in relation to the abandonment of most urban centers and their settlement networks and harbors, the decrease in copper mining and production, and the disappearance of technologies like writing (in the form of the LC "Cypro-Minoan" script) from the archaeological record by ca. 1200 BCE.[58] While the term "collapse" can be used uncritically to account for unexplained ruptures of normative traits and features (Tainter 2006), archaeological studies continue to refine the term's productivity as it relates to anthropological theories of social and political structure and diachronic change (e.g. Tainter 2006; Yoffee and Cowgill 1988). There has been a push to reject neo-evolutionary, teleological models that view the state as the pinnacle of political development and to focus instead on the multiplicity of paths and the possibilities for growth and change after states (or other entities) lose or dismantle their power (Terrenato and Haggis 2011; Yoffee 2005). The old vocabulary of a unilinear social evolution (e.g. Sahlins and Service 1960; Fried 1967) is no longer viable in the wake of studies that reveal the flexibility and mutability of human groups and the complex and unpredictable ways that they form, develop, and break apart (Fisher *et al.* 2009; McIntosh *et al.* 2000; Terrenato and Haggis 2011).

[58] The literature on the causes of end of the Late Bronze Age is vast and wide-ranging, and includes both regional and pan-Mediterranean perspectives. For broad publications, international conferences and edited volumes, see e.g. Cline 2014; Ward and Joukowsky 1992; Mathers and Stoddart 1994; Fischer *et al.* 2003; for specific regional theories see e.g. Drews 1993; Kuhrt 1995; Nur and Cline 2000; Carpenter 1966; for Cyprus, see e.g. Baurain 1984; Karageorghis 2000; Kaniewski *et al.* 2010, 2013.

Studies of what happened after the breakdown of regional centers on Cyprus consistently return to the consensus that the 11th c. BCE brought with it a new set of practices that were directly, or indirectly, tied to the abandonment or survival of the Late Bronze Age regional centers. Scholars that argue for Late Bronze Age to Iron Age continuity as well as those arguing for a 'break' acknowledge the fundamental impact of the 12th c. BCE dismantlement of urban centers both on Cyprus and around the eastern Mediterranean – a "major, if temporary, step backwards" (Broodbank 2013: 462; see Rupp 1987; Knapp 2008; Baurain 1984; Georgiou 2012). On the other hand, the mechanics of the collapse at the regional and local scale are often taken for granted as constituting a "horizon" that occurred, but whose configurations in practice, and material mediations, remain underexplored. "Collapse" is always present in the background as "an irreversible turn of events" (Iacovou 2014a: 661), sending some populations into a few urban centers (e.g. Idalion, Palaepaphos, Kition), or out into the countryside to settle new places (e.g. Amathus), and eventually ushering in a new period of trade, production, and political organization. Thus emerges a post-collapse world, where communities responded to or held onto earlier institutions (as in the traditionalist model), or sought out new opportunities (e.g. Rupp 1987), but where the experience and memories of collapse linger.

But, did Cypriot populations in the 9th c. BCE, for example, really still think of themselves as inhabiting a "post-collapse" world, especially after 3-4 centuries? Or does "collapse" represent more of a scholarly preoccupation, one that we use to divide cultures into classificatory periods based on broad-stroked assumptions of "stability" and "instability" (see Matthews 2008; Purcell 2005)? It seems, from the critical review presented above, that the salient events of the Late Bronze Age "collapse" are consistently present in arguments of what came after, regardless of the mechanics of the collapse and the effects on later (re-)generations. I

use the term "post-collapse" loosely to define the period following the end of a suite of Late Bronze Age practices on Cyprus, and in doing so reference the complex, plural, and shifting responses to such contexts of dislocation centuries later.[59] To put it another way, "post-collapse" here encapsulates the murky few centuries following the Late Bronze Age decline, whose still-obscure patterns of materiality and interconnectedness sometimes appear to have oriented towards their antecedents, and sometimes turned away to other inspirations and influences. "Post-collapse" also hints, hopefully, to a new scheme of scholarship that interrogates – and does not take for granted - the experiences and perceptions of dislocation, upheaval and/or decline through the material and textual records that survive – moving beyond "collapse" as a thing-that-happened to collapse as a dynamic set of conditions. Here the "collapse-condition," in this Cypriot context, involves a complicated dynamism of abandonment or complete desertion at some urban centers, the re-orientation of economic, political, and social apparatuses at others, and the increased mobility – or alternatively the unsettled-ness – of fragmented communities. Any attempt to define this upheaval requires a more focused look at the ways in which different groups in a given area – subjects, authorities, etc. – negotiated their practices alongside these changes (and after them) in relation to local and regional or interregional order.

The processes that ended the Late Bronze Age political and cultural networks in the eastern Mediterranean have long been a seductive subject for archaeologists.[60] Until recently, much of the discussion revolved around the search for causes: catastrophe (Renfrew 1978), climate change (Carpenter 1966; Bryson *et al.* 1977), natural disaster (Nur and Cline 2000), internal instability and decline (Killebrew 2005; Kuhrt 1995), war (Drews 1993), and the

[59] In the same vein, the predominance of "collapse" studies in recent years has noticeable ties to modern anxieties over global instabilities related to war, climate, and overpopulation. See discussion in **chapter 4** on collapse and climate change.

[60] See n. 58.

enigmatic "Sea Peoples" and their exploitation/usurpation of maritime trade (e.g. Gitin *et al.* 1998; Oren 2000). More recently, scholars have started to question how the disintegration and/or renegotiation of the Late Bronze Age social, political and economic networks affected (or denied) the re-emergence of complex forms in the early 1st millennium BCE, throughout the circum-Mediterranean (Fischer *et al.* 2003; Gitin *et al.* 1998; Mathers and Stoddart 1994; Broodbank 2013: 445-505). By the end of the 12th c. BCE much of the Mediterranean and surrounding lands belonged to a new 'era' characterized by different trading networks, new technologies (e.g. iron, ships) and materialities, new patterns of mobility of groups and things, and new forms of political organization (Sherratt and Sherratt 1993; Morris 2003, 2006),[61] all encompassed by a relative lack of archaeological visibility as compared to the Bronze Age.

Scholars have noted that the collapse on Cyprus had marked regional effects (Georgiou 2012; Iacovou 2013b; Knapp 2008): some sites such as Maroni *Vournes,* Kalavasos *Ayios Dhimitrios,* Alassa *Paliotaverna* and Hala Sultan Tekke were abandoned or show signs of destruction (Iacovou 2012); some such as short-lived Pyla-*Kokkinokremnos* and Maa-*Palaikastro* indicate suddenly-acquired defensive walls and just as sudden demolition (Georgiou 2012); others persisted, with little evidence of distress and even enhanced monumental construction, such as Kition and Palaepaphos (Iacovou 2007a; Karageorghis 1990). Nevertheless, a range of site abandonments, destructions and gaps in the archaeological record shown in regional surveys suggest a period of intense social and political reorientation (Knapp 2012), and that "the extent of the damage has not yet been satisfactorily assessed" (Iacovou 2013b: 25). By the 11th c. BCE, new ceramic forms, new built environments and settlement patterns (Iacovou 1994), increased trade (but not state-level, e.g. Sherratt 1998; Knapp 2012) and

[61] On the emergence of iron production and trade and its prestige in this post-collapse period, see Sherratt 1994, 2000.

considerable use of iron technology (Sherratt 2000, 1994; Broodbank 2013) hint at a new insular political economy (Coldstream 1985). Most sites that would come to dominate the political landscape of the mid-1st millennium, concurrent with military entanglements with the Greeks, Persians and Egyptians (e.g. Hdt. *Hist*. 3.19.3, 3.91.1), show little to no continuous occupation or activity before the 9th c. BCE (Petit 2001; Knapp 2008).

Most research on Cypriot post-collapse dynamics thus tends to focus on regional variation and the continuity of LBA forms (Iacovou 1989, 1994, 2002; Georgiou 2012), or on the urban entities that followed in the 9th/8th c. BCE and their ethnic identities (see Leriou 2002). In Artemis Georgiou's (2012) important recent work on the material from Maa *Palaikastro* and Pyla *Kokkinokremnos*, she notes that these are the only two settlements that arose in the 12th c. BCE period. Other potentially new non-urban settlements, whose remains are only accessible through archaeological survey, are obscured. Without considering their potential local relationships, before or after, she argues that the sites are "without a past and a future," synchronically encapsulated in a brief moment (Georgiou 2012). Where did the occupants come from, and where did they go after they abandoned these new sites?

Despite the focus on continuity, the archaeology of social construction of the past is not as well studied in the framework of 1st millennium BCE Cyprus as in other parts of the Mediterranean (e.g. Antonaccio 1994; Wallace 2010). Nicholas Blackwell's (2010) study on the tombs at Salamis provides intriguing evidence for the re-use of architectural and representational elements from the nearby LC site of Enkomi for the purpose of legitimation by later groups, and other excavations have revealed the reuse of certain LC materials and spaces in Archaic periods, such as the Archaic sanctuary built on the ruins of the monumental Ashlar Building at Maroni-*Vournes* (Ulbrich 2012; Manning 1998). Sabine Fourrier (2013: 108) notes the widespread re-

use of Late Bronze Age material for later cultic practice and Giorgos Papantoniou (2013) attempts to trace "memory trends" throughout the later 1st millennium BCE through the re-use of older sanctuaries. Did elites in nascent communities project their authority alongside vestiges of the LC period? How did other non-elite groups utilize the past to resist or to create new narratives? Or, was there a tension (Bradley 2003: 223) between the enduring character of the LC built environments and the ways in which later groups used them, such that LC forms held little meaningful content as sources of power?

Theories that address external influences driving post-collapse change in the Iron Age Mediterranean, such as those of Coldstream (1985:50),[62] have shifted to make room for island-centric arguments for innovation and power, as noted above. But with the greater focus on large-scale decline, abandonment, or urban monumentalization, we can lose purchase on the local mechanics of these changes (e.g. Iacovou 2013b). As Broodbank (2013: 468) has recently argued,

> We need something less generic to explain why the Iron Age resurgence would look in crucial respects so radically different from anything seen before. This requires setting aside the rhetoric of catastrophe, and instead thinking of burning palaces as problem-solving and enabling moments for certain kinds of people, the integral birth pangs of a new social and economic order, rather than a disastrous retardant to its emergence.

While Broodbank's birthing metaphor provides a confusing generative chronology for the transformations of the later 9th and 8th c. BCE as already emerging with the destruction of the Mycenaean palaces (and one that Iacovou [2013b: 36] rejects as distilling gradual change into a single moment), he places particular emphasis on the decision-making and "problem-solving" moments "for certain kinds of people," the potential midwives, as it were, in this birth of a new order, reiterating the need to look at a variety of responses to post-collapse regeneration, not just

[62] Coldstream 1985: 50: "no new impulse enlivened the island's material record."

elite or non-local influences. Guy Middleton (2012) also advocates a comparative approach to the complex continuities and discontinuities of both palatial and non-elite, rural communities after the Aegean collapse (see also Schwarz 2013).

Archaeological studies have the potential to elucidate the social, spatial and temporal ties between former polities and their successors (e.g. Bronson 2006; Schwartz and Nichols 2006). Bennet Bronson's (2006) terminology for models of 'stimulus' or 'template' regeneration (Morrison 2007: 47; see Schwarz 2013) can frame elements of post-collapse scenarios that are either complete breaks from, or 'isomorphic' versions of what came before, while the complexities might reside somewhere in-between, and in the varied responses of urban as opposed to non-urban systems as well as elite as opposed to non-elite ones. The differing degrees of transformation after collapse are dependent on everyday practices, habitual social relations, and the historical consciousness of populations, including the significance of the past as reinterpreted by later generations through new or altered regimes (Bradley 1993; Kolata 2006).

As Norman Yoffee (2006) has noted, the multidirectionality of collapse or disruption contexts does not imply a "downward" movement to lower schemes of complexity, but a movement from contexts of settled-ness to unruly ones that dismember and unsettle. It is within these interstices in which the traces of post-collapse dynamics reside. In other words, we can begin to examine the practices, forged in both local settings as well as shifting geopolitical and environmental contexts, which connected new populations with previous ones, new settlements with the vestiges and debris of older ones, or severed authorities from the residues of earlier societies. Because of the focus in Cypriot studies of the 1st millennium BCE on the city and elite assemblages, these in-between areas of social practice, set in spaces often outside the city walls,

have received less attention. I argue in the following section that in addition to a preoccupation with a static "collapse," it is the ambiguity of the term "city-kingdom," and the hesitant understanding of royal power in the polity, that has helped to elide 1st millennium BCE political landscapes.

Defining the 'city-kingdom': kings with polis anxiety?

For studies of 1st-millennium BCE polities in the Mediterranean, the city is the terminological and conceptual keystone, and scholarship has concentrated on classifying and investigating the various systems of autonomous city-states that developed throughout the Aegean, the Levantine coast, and the central and western Mediterranean during the 9th -7th c. BCE (see e.g. Hansen 2006). On Cyprus, scholars do not call these polities *poleis* or city-states but "city-kingdoms," an enigmatic term unique to this island, and one that invites inquiry into the activities that defined the polity and its authority (Iacovou 2013b: 36).[63] Compared to the better-documented evidence for the structure and mechanics of the Aegean *polis,* for example, and especially its later 5th-4th c. BCE formations in the Greek ecumene, our knowledge of the Cypriot "city-kingdom" is rather poor. With only the excavations of segments of major sites and a handful of local inscriptions mentioning *basileis*, the Iron Age polities of Cyprus remain nebulous, making little appearance in cross-cultural studies of ancient city-state cultures, for

[63] The term "city-kingdom" has been very rarely used to describe Iron Age polities in the Levant (Syria-Palestine), e.g. I. Singer [(1988) Merneptah's campaign to Canaan and the Egyptian occupation of the southern coastal plain of Palestine in the Ramesside period. *Bulletin of the American Schools of Oriental Research* 269: 1-10], used once in abstract and not defined. G. Toffin [(2002) Les cites-royaumes de la vallee du Nepal ca. 1482-1769. In M.H. Hansen (ed) *A Comparative Study of Six City-State Cultures*, 107-125] also uses the term "cités-royaumes" to describe 15th – 18th c. CE Nepal. The term *polis* in the ancient Aegean/Mediterranean world meant two things: 1) the city, as center of the polity, and 2) the political community of citizens and state (Whitley 2001: 165).

example (e.g. Hansen 2006; Demand 1996).[64] Here I focus on the distinction of the city-kingdom from the *polis*, an underlying tension between eastern and western conceptions of kingship, and the identity of the king and his presumed palace as topics in need of further investigation.[65]

Traditionally, the need for the distinct term city-kingdom has been justified through later 7th-4th c. BCE inscriptions and texts that mention the *basileus* ("king"), and which mark some of the cities on the island as *basileis* (Iacovou 2006; Satraki 2010: 197). In addition, the discoveries of "royal" scepters,[66] swords, and other paraphernalia in monumental tombs at late 2nd-early 1st millennium BCE sites such as Kourion, Salamis, Palaepaphos, and Lapithos[67] confirm the presence and symbolic accoutrements of kings (e.g. Casson 1937: 64-67; Snodgrass 1988; Karageorghis 1990, 1994; West 1997: 17; cf. Maier 1999: 83).[68] Thus all Cypriot polities are considered monarchies (Satraki 2010; Papantoniou 2012), which would have had subjects, and not citizens (Coldstream 1989; cf. Demand 1997; see Hansen 2006: 56-61 for concept of *polis* as community of citizens).

The island's crossroads-geography has also helped to situate it within traditional east-west debates about political form (Knapp 2013: 28). In early 20th c. work, scholars distinguished the island from the *polis*-system by connecting it with "Oriental despotism," that brand of regime

[64] Within the publications associated with the Copenhagen Polis Project, which catalogues and investigates city-states across the ancient (and later) world, Cyprus only appears in one essay, and is otherwise not included in discussions of east Mediterranean city-state systems, despite its associations with Greece and the Levant. In her article in one of the Polis Project's volumes, N. Demand (1996) points out that the later 4th c. BCE author Isocrates, who wrote about the Cypriot king, Evagoras, names Salamis a *polis* (*Ev*. 49-50, 52-27; *Nic*. 9, 19, 24, 21), as does Strabo (14.6.5). Nonetheless, few have taken up Demand's arguments to use "*polis*" to describe Iron Age Cyprus.
[65] Iacovou (2013b: 36) has also recently published a critique of the term: "I am fairly convinced that the study of state formation in Cyprus has suffered from our use of the term 'Cypriot-kingdoms' or 'city-kingdoms', instead of city-states, polis-states, or simply polities," because it "conjures images of kingship from completely heterogeneous contexts and encourages scholars to think that these political units were something other than city-states." Her usage of "micro-state" for Late Bronze Age-Iron Age Paphos is less convincing (2014c: 162).
[66] Like the golden one found in Tomb 40 at Episkopi *Kaloriziki*, Coldstream 1989: 332-2.
[67] Sites "destined to become the Greek Cypriot city-kingdoms," Coldstream 1989: 328.
[68] Part of this acceptance must result from the continuing support of long-standing terms and chronologies, and the idea that Gjerstad and the SCE sufficiently examined and interpreted Cypriot past (Given 1991).

generated through 18th and 19th c. views of Near Eastern sovereignty (Serghidou 2001; see Gjerstad 1948).[69] The position of Cyprus in the eastern Mediterranean where the Orient meets the Occident (Karageorghis 1986), and its proximity to both the Aegean/Mediterranean classical world and those traditions of the Near East, has engendered a distinct bipolarity that dissects the island along eastern and western contours (e.g. Fourrier 2013: 81). Since the early antiquarian days of the 19th c., the Phoenician presence on the island, particularly at the type site of Kition, became a powerful driver for discussions of political and social change, while by the 20th c., nationalist attention to the Aegean on the part of an increasingly vocal local population under British rule had forced the Mycenaean and Greek character of the island into the forefront of 1st millennium BCE archaeology (Given 1991: 23).[70]

The east-west anxiety of this scholarship thus extends to the interpretations of 1st millennium BCE rule and the nature of kingship, which became a well-studied subject in late 19th/early 20th c. archaeology and anthropology more generally (Smith 2011: 417). Stanley Casson (1937: 64-67) believed that kingship had been brought to the island by the Mycenaeans at the end of the Late Bronze Age, and that it was a semi-democratic constitutional monarchy "of the type so fully illustrated in Homer." Casson argued that the Cypriot *basileus* was not an Oriental despot but a semi-divine figure whose decisions periodically required the agreement of his people. Gjerstad (1948), on the other hand, considered the 1st-millennium BCE Phoenician influence on the island (unlike Hansen 2006: 45) "pernicious," hindering the development of the

[69] The term "Oriental despot" has a long tradition in western historiography, beginning with Aristotle and Herodotus; in Cypriot scholarship the Marxist idea of despotism as the "Asiatic mode of production" is altogether absent, as the term used to describe the absolute authority controlling non-citizen, subjugated populations of the Near East. For the concept of the despot as it relates to the broader production of Orientalism, see E. Said (1977) *Orientalism*.

[70] Given 1991: 23: "To be seen as Greek, Cypriots had to step into and force their history into a nationalist structure constructed by the Westerner." See also Knapp and Antoniadou 1998; Given 2005.

polis in favor of oppressive autocracy in the form of the despot. It is only in recent decades, with the advent of island-centric perspectives on local political organization as well as theoretical discussions on hybridity and entanglement, that this east-west trope has fractured to suggest instead the interconnections between different cultural forms and asymmetrical power relationships (Knapp 2008; Broodbank 2013).

Anna Satraki has recently and cautiously set out to "excavate" the *basileus* through royal sculpture and numismatics and to reveal "valuable information regarding how this authority was manifested" (2010: 198; see 2012), but what *was* the city-king's authority? For Iacovou (2013a), the presence of trilingualism and particularly scripts on the island in the 1st millennium BCE allowed the ruling dynasty to use script as a distinct identifying signature. Franz Maier (1989), on the other hand, has examined authority through a study of the "priest kings" of the city of Palaepaphos (and later Nea Paphos), which has the largest corpus of royal inscriptions (Satraki 2010). Unlike all of the other city-kingdoms, which began, Maier argues, in the 8th – 6th c. BCE as hereditary autocratic monarchies, the Paphos region had a "sacral kingship" that combined the king's political powers with cult functions. The royal sculpture of the city, as well as inscriptions and literary traditions, do not reveal much about this theocratic form of rule, except that by the Roman period, the kings likely had divinatory powers associated with *haruspices* (Tac. *Hist*. 11.3; Maier 1989). Indeed for Aristotle, priestly functions made up one of the three defining roles of the king in early Greek society (*Pol*. 1285b, 23), in addition to being a leader in war and a judge (see West 1997: 15-18). At this point, more attention to the complexities of divination and hieratic sovereignty is required before making these identifications of Paphian (or Cypriot) rule (see Smith and Leon 2014; Papantoniou 2012: 270).

What Maier's discussion reveals is a potentially interesting variance in the regimes of the island,[71] but equally, it exposes the gaps in our evidence about the configurations of these forms of authority, as Sophocles Hadjisavvas (2002: 56) has noted:

> We can only speculate on the way those regions eventually developed into polities. The character of these polities is not clear, apart from the presence of a ruling power in the hands of the economic elite. When and how those elites led to the emergence of kingship we don't know. We can only suggest on the available evidence that a kind of hybrid kingship emerged already during the later phases of the Late Cypriot period.

Hadjisavvas' economic argument about the control of a region by an elite group with power over modes of production (copper and agriculture) points to another, less studied complexity of authority (but see Rupp 1987, 2001).[72] As noted above, Iacovou (2013b: 36; see 2008a: 650) has recently defined the *basileus* as "not simply a head of state but, first and foremost, the director general of his kingdom's metal industry," locating the role of the king firmly within the politico-economic control of copper and agricultural resources. Iacovou's economic and implicitly systems-oriented approach suggests that authority was somehow forged within the realms of industry and subsistence, and opens up space for investigating the ways in which the *basileus* institution maintained its subject populations and sustained its sovereignty through these practices.

The king's purported residence, the "palace," is another fixture of discussions of royal authority, with meager evidence (e.g. Hermary 2013).[73] The large structures recovered from the two sites of Amathus and Idalion make up the sample population of royal built environments for

[71] Cf. Papantoniou 2012a: "Cypriot *basileis* was never more than one homogenous institution;" also Iacovou 2006: 330.

[72] As in, the economic/political arguments made for the Late Cypriot period that see aggrandizing elites manipulating local trade relationships, e.g. Manning and De Mita 1997.

[73] Satraki (2010: 198 n. 4) notes that two royal buildings (Amathus and Idalion) are still under excavation, and other monumental buildings (such as Kouklia) are not fully published.

the early 1st millennium BCE, and both share a position on the acropolis at each site, in proximity to sanctuaries of female deities (Hermary 2013).[74] At both Amathus and Idalion, storage facilities and religious assemblages in connection to these large structures have indicated possible administrative complexes of the elusive "city-king" (Aupert 1996; Petit 2001; see Hadjicosti 1997a). Indeed, Satraki (2013: 126) has argued that the presence of these built forms "constitutes the clearest evidence for the emergence of the centralized and hierarchical Cypriot kingdoms, as well as the ascendency of hereditary *basileis*." Yet the limited amount of work published on the period's "monumental urban" architecture seems to lend itself to hypotheses of palatial design, based on the assumption that rule was monarchical and that the king must have a palace. Missing from these studies is the investigation of the complicated intersections of built environments and the reproduction of social practices in local or historically salient spaces (e.g. Smith 2003; Fisher 2009). In other words, when everyone is looking for the king's palace, it is found in the largest (excavated) built forms. Marguerite Yon (2002) has similarly criticized the continued assumption that Kition *Bamboula* was an acropolis, out of the need for a central, commanding administrative point for this ancient city, despite excavations revealing only a mid-1st millennium CE anthropogenic mound.

But what exactly makes a built form a palace? And what links these contexts to the mechanics and materiality of a kingdom? To date, the investigations of the spaces that might reproduce the local authority – monumental forms, open spaces for gathering, restricted spaces for the politically or socially powerful (e.g. Markus 1993; Fisher 2009) – are absent. Steel's

[74] The much later, and short-lived, 5th c. BCE complex at Vouni is also used within discussions of palatial architecture; I have argued elsewhere that this monumental built form, while possibly the residence of a king, was more likely an arena of local competition and overt display of shifting political power in a period of uncertain geopolitical status (Kearns 2011).

(1993: 152) attempt to list the essentialist criteria for the archaeological signature of a city-kingdom could describe any sort of complex political form, and is worth quoting in full:

> A city is a settlement whose function is not primarily agricultural produce to feed its population and which acts as the centre for a number of specialized activities. The increased specialization of activities results in intensive division of labour and a hierarchical organization of activities, and so there is increasing complexity of society. Ultimately the higher, more specialized activities (such as government) occur in a smaller number of centers. The city-kingdom is based on such a hierarchical organization of society, in which the ruling group exercises control over basic resources, removing surplus for its own consumption, and controls internal order, defense and foreign relations. The following criteria can be used to demonstrate the city-kingdom archaeologically: **spatial organization within a settlement, craft specialization, evidence for administrative activity and monumental architecture**. (my emphasis added)

It is important to note here that Steel begins with a Childean (1950) list of traits for the city set against an evolutionary framework. This focus on the urban set-up, with its development of hierarchical organization and complexity, elides the particular functions of the "–kingdom" part of the term. Steel's four archaeological criteria for a city-kingdom could extend to a broad range of varied complex political forms, not necessarily a kingship. Ultimately, such a city-centric definition emphasizes the "urban" features in 1st millennium BCE contexts rather than the spatial and material vestiges of the actual authority. More importantly, as Antoine Hermary (2013: 83) and others have noted, we still lack satisfactory understanding of town planning and spatial and demographic scale in this period, and have little knowledge of the processes and local contingencies of urbanism, or what it meant in the period (the "urban *habitus*," Manning *et al.* 2014: 5). Papantoniou (2012: 34) indeed notes that "the usage of the phrase 'urban space' can be dubious in discussions of Iron Age Cyprus," revealing a type of paradox in avoiding discussions of urbanism while simultaneously upholding the "city-capital" as the center of political and social practice.

Fourrier (2013: 104) has recently argued that epigraphic evidence from the 1st millennium BCE only mentions Cypriot kings in conjunction with a city, not a civic community (cf. Lejeune 2010). Thus the textual record reflects a bias toward the classical *polis-chora* ideal type of divided urban/hinterland landscape (Hansen 2006; see Rupp 1987; see Bintliff and Howard 2004 for the ideal *polis-chora* relationship).[75] Satraki (2012: 333-334) has gone as far as to claim that no settlements could have survived outside of this urban center without some sort of politically dependent incorporation, and Iacovou (2014c: 164-165) has recently emphasized how smaller sites would have linked copper resources with the important urban port. But what defined this dependency? How were those subjects created and maintained? And what were the landscape practices that constituted or reduced these spaces to a *chora*?

In stressing the "city" nature of the polity as its defining feature, rather than investigating its political mediations, archaeological work on Cyprus continues to focus on the monumental sculpture, art, and buildings of the 1st millennium BCE city-kingdom. What results is an understudied, almost blank set of hinterlands beyond these city walls (Satraki 2012: 333ff; Collombier 1991; Rupp 2001). Attending to the archaeology of polity-formation in the early 1st millennium BCE on Cyprus entails a re-figuring of the questions to consider the potentially unruly spaces and things that actively produced and shaped different political practices. In **chapter 2**, I turn to a more in-depth study of how these assumptions about cities and kings have bounded 1st-millennium landscapes within a metaphorical framework of homogenous institutions and spatial autonomy, and I lay out my own theoretical stances for understanding the period's political landscapes.

[75] Iacovou (2012), for example, uses the term "chora" in the title of her article on the formation of the kingdom of Paphos.

Chapter 2

Making places in 1st millennium BCE Cyprus

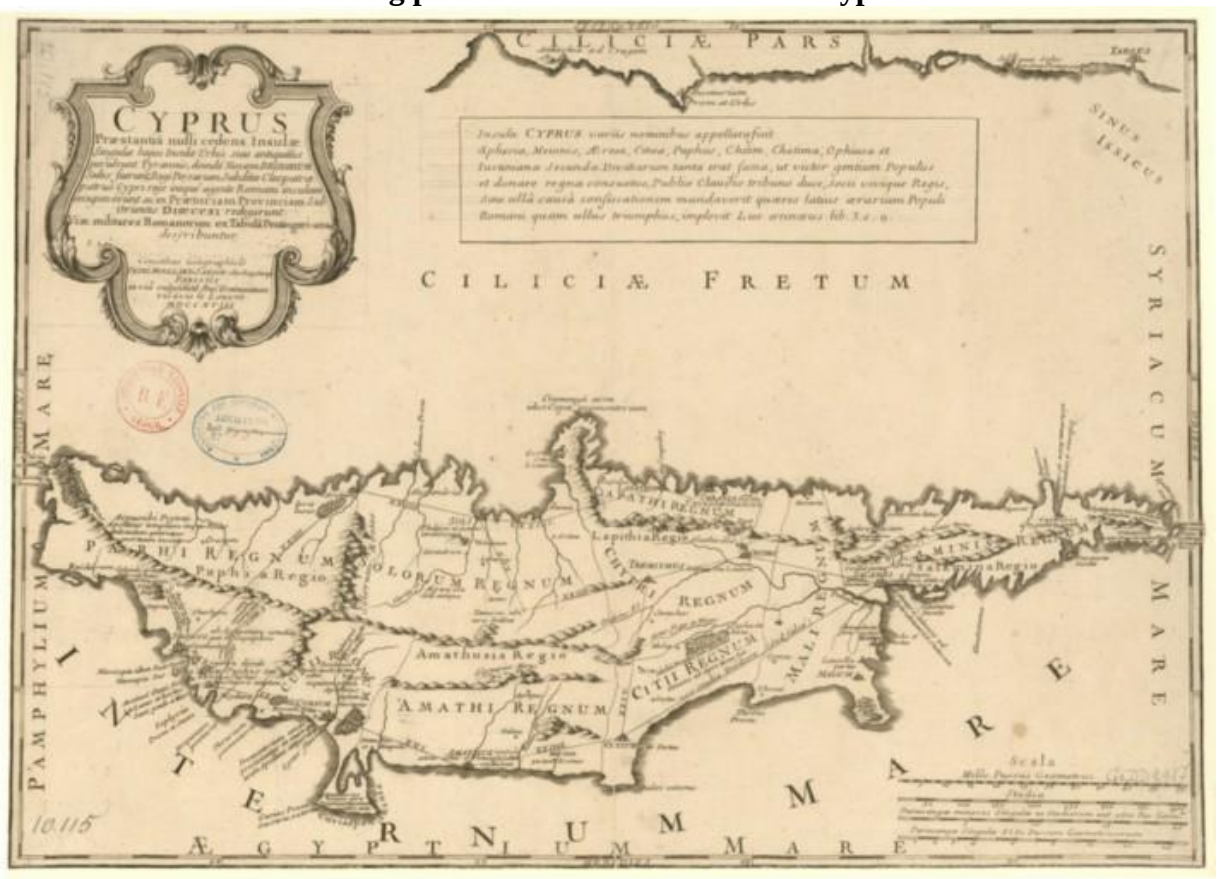


Fig. 2.1. Moullart-Sanson's map of Cyprus, 1718 (Iacovou 2004a: fig. 1)

In the early 18th c. CE the Parisian map-maker Pierre Moullart-Sanson constructed a map of Cyprus that rendered his views on the names and borders of nine city-kingdoms of antiquity, extracted mostly from Pliny's *Natural History* (Fig. 1).[76] As Iacovou (2004) has recently shown, Moullart-Sanson sifted through surviving literary sources to create a unique historical object, one built upon an assumed spatiality of the island's past. Moullart-Sanson ultimately sought to map

[76] Pliny (*HN* 5.53) actually records 15 towns in his day: *oppida in ea xv, nea paphos, palaepaphos, curias, citium, corinaeum, salamis, amathus, lapethos, soloe, tamasos, epidaurum, chytri, arsinoe, carpasium, golgoe. fuere et cinyria, mareum, idalium*. "There are fifteen towns on [Cyprus], Nea Paphos, Palaepaphos, Curium (Kourion), Citium (Kition), Corinaeum, Salamis, Amathus, Lapethos, Soloe (Soli), Tamassos, Epidaurus, Chytri, Arsinoe (ancient Marion), Carpasium, Golgoi. There used to be also Cinyria, Mareum, Idalion."

these polities for a contemporary cartographical publication, and not to explain their formation or development. While the delineation of the political boundaries of these city-kingdoms using textual evidence like Sargon II's stele (mentioned in **chapter 1**) or Strabo (14.6.2) and Ptolemy (5.13.5) has continued to captivate scholars of 1st-millennium BCE Cyprus since Moullart-Sanson's attempts, the endeavor has fallen short on explanations for the island's changing political landscapes. There remains a gap in our understanding of the places - inhabited, built, imagined - that were fundamental to the creation and maintenance of political authority in this period.

Geography and topography have been the topics of several works (e.g. Iacovou 2014c; Papantoniou 2012; Fourrier 2002; Rupp 2001; Satraki 2012: 333-370; Masson and Hermary 1992), including Iacovou's (1994) seminal mapping of 11th c. BCE settlements and her important recent contributions to the island's past landscapes (e.g. 2013b). The spatial terminology of city-kingdom territories in these studies serves mostly to foreground diachronic processes, such as the growth of regional economies, or historical events, such as the later Ptolemiac conquest of the island. At the macro-scale of inter-polity relationships, the Assyrian inscriptions of Sargon II of 708 BCE and his successor Esarhaddon of 673 BCE have come to substantiate a vacillating number of polities – seven mentioned by Sargon II, ten by Esarhaddon – whose supposed boundaries are determined most evocatively by their numbers. In discussing the political topography of Cyprus, scholars have used these inscriptions as isolated but accurate *termini* from which political constitution and territorial limitation can be measured in time (e.g. Collombier 1991; Fourrier 2002, 2013; Iacovou 1994, 2012, 2013b; Satraki 2012: 333ff; cf. Kiely 2005).[77] Similarly, Rupp's (1987: map 4; see Fig. 2) attempt to map the hypothetical boundaries of these

[77] Thus, for example, Iacovou (2013a) asserts that the maximum possible fragmentation of polities in the 1st millennium was 10, because the Esarhaddon prism only mentions 10 cities.

putative states views space as a social constant that political boundaries, serving as lines of distinction, easily segment. The inherent assumption is that there is a contiguous order of polities, in which every possible inch of land, every potential village, is allotted to some city-king's control (Satraki 2012: 334). Paradoxically, however, these lines of distinction are based on fragmentary evidence or topographical features like river valleys, and can at best provide only rough suggestions of what a given territory might have been.

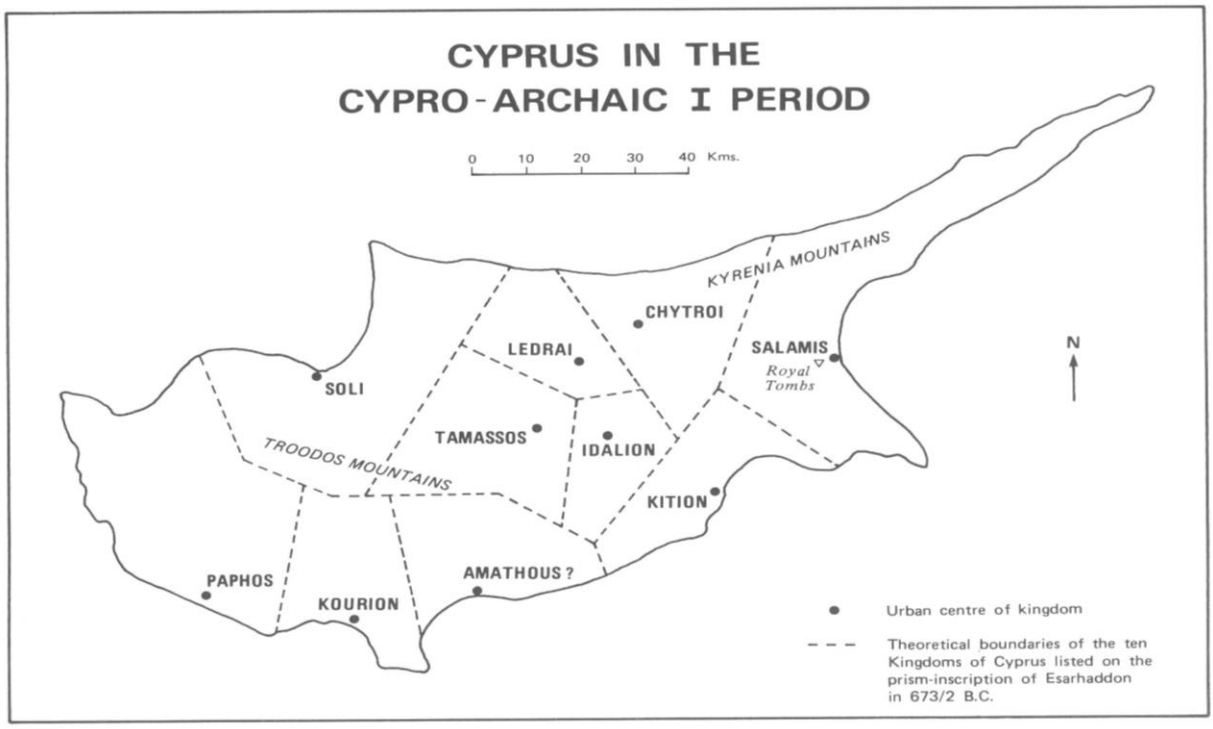


Fig. 2.2. Hypothetical boundaries of Cypriot city-kingdoms (Rupp 1987, map 4).

Even when these presumptions of boundaries are not implicit, and authors argue that borders were not necessarily always the same nor well-defined (e.g. Satraki 2012: 24; Iacovou 2013b: 27-28; Papantoniou 2012: 90-1),[78] the use of the Neo-Assyrian inscriptions to order our understanding of 1st-millennium BCE geopolitics persists (e.g. Kassianidou 2013). This chapter

[78] As noted above, Iacovou's position has argued for the shifting of polities in the "foundation" horizon ca. 11th – 7th c. BCE (2013b). She has also criticized Rupp's maps, not for their reliance on absolute space, but for their presumed "break" between the LBA and IA periods. See also Casson 1937: 147, in which he hypothesizes that the capitals of kingdoms probably shifted, and that kingdoms reformed and reshaped their boundaries.

asks whether these polities were as uniform in their distribution and composition as these arguments claim and how mutable and unruly were their features. To frame it another way: what were the landscapes and practices that forged inter-polity order? The present chapter argues for a theoretical and methodological approach to 1st-millennium polity-formation that takes as its focus the spaces, environments, and landscapes that conditioned and mediated new political and social orders in a period of wide-ranging and profound change.

Rather than seeing space as descriptive, I argue that it was critical to the re-formation of complex communities in the wake of environmental and social change. In the first section of this chapter, I outline the current explanations for political territories and interregional distinction in the early 1st millennium BCE. These include several perspectives on space and the polity that are not mutually exclusive, but emphasize particular assumptions about spatial practice, including the definition of a political territory as a formula dependent on physical resources, the argument that extraurban sanctuaries were used to enact political boundaries, and the importance of communal necropoleis for maintaining local identities. The second section lays out the theoretical purview of this dissertation. I argue for an approach to ancient landscapes that recuperates the significance of environmental practices, which have until now been linked (often pejoratively) to processual archaeology. That discussion sets up a more in-depth exploration of environmental thought within Cypriot archaeology that is the subject of **chapter 3**.

Bounding the 1st-millennium BCE polity

The study of the politics of 1st-millennium BCE Cyprus, as detailed in **chapter 1**, has traditionally fixed its somewhat astigmatized gaze on the king and his city. In this sense, urban centers with roughly sketched economic hinterlands support the existence of a "Cypriot" type of

fragmented political landscape that either persisted from the Late Bronze Age (Iacovou 2012; 1994) or emerged in the 8th c. BCE (Rupp 1987). Scholars have additionally focused on well-known, excavated sites such as Idalion (Hadjicosti 1997a), Paphos (Maier 2004; Iacovou 2012), or Kition (Yon and Childs 1997; Smith 2009). Most work which examines the spatial relationships of the period's cities and its territories, or intra-island networks of cities, has been descriptive rather than explanatory. And, underlying many of these concerns about territory is an imagined cartography of the island's polities, each with its own boundaries or frontiers, resources, and undefined dependent settlement networks.[79] In 1987, Rupp published hypothetical maps of these polities in which he used Thiessen polygons to statistically quantify regional territories, creating a map whose borders consist of hatched lines between city-kingdoms, configured in terms of natural topography (1987: maps 4, 6, **Figure 2**; see Counts 2008: 16; cf. Satraki 2013: 338). While the maps are explicitly heuristic (Rupp 1987) and serve more as tools to think with than as a definitive explanation of territorial control, they have been widely published, perpetuating a static conception of the period's political landscapes.

These maps are not without some detractors. Michael Given's dissertation on Iron Age political identities noted their problems (1991: 43):

> A glance at the relief map, or even better a journey across the Troodos, throws doubt on the relevance of another geographical notion which we take for granted today and which can all too easily be imposed on the city-kingdoms. This is the principle that any unit of territory must be defined by fixed linear boundaries. The lines representing the 'theoretical boundaries of the…kingdoms of Cyprus' on David Rupp's maps (1987: Maps 2, 4, 6) impose a contemporary framework of nation-states on the ancient landscape in much the same way as today's Attila Line cuts through modern Golgoi. We need to find out whether attention was focused on the center or the peripheries of the kingdoms, and be prepared to accept that there may have been huge areas of

[79] Snodgrass (1988: 14-15) for example argues that the average size of the Cypriot kingdom was 925 sq. km., similar to a Mycenaean state, based on Rupp's (1987) theoretical maps; Iacovou (2007a: 464) defines their size as equivalent to feudal states. There is incentive here to consider, however, Renfrew's (1975: 12-21) "Early State Module" and question the regularity of polity size, which he based on city-states in Etruria.

> indeterminate territory, particularly in the impenetrable Troodos. Perhaps landscape was indeed used to distinguish between the city-kingdoms, but the way in which those distinctions were made would not necessarily have been the same as what we are used to today.

Given highlights here some of the major shortcomings of the hypothetical inter-polity map: the imposition of an anachronistic schema of drawn borders – a phenomenon of the modern nation-state - and the assumption that monarchical space is absolute, and must be fixedly configured (Smith 2003: 33-54; see also Satraki 2012: 338). In other words, in Rupp's schema, all space must be assigned to a regional center, eliding the possibility of "non-regulated" or excluded areas between boundaries.[80] Equally absent are the intricacies of the landscape: borders are hypothesized along contours of copper or coast, paying less attention to more micro-scale articulations or conditionings of space. Landscapes, here, are the background to the identification of a given city-kingdom in a given period (e.g., the $11^{th}/10^{th}$ c. BCE vs. the 7^{th} c.). In the following discussion, I argue that studies of the period's landscapes have focused on ideal regimes, rather than on the social, political and economic interactions between space and environment. I do this via an examination of previous understandings of territory and border.

Space and landscape in the archaeology of 1st millennium BCE Cyprus

Iacovou (2007a, 2013b) has long examined the distribution of settlements in her arguments about the foundation of the polities, and she has particularly stressed the political fragmentation of the island as evidence for the continuity between the Late Bronze Age and Iron Age periods. In her view, the lack of a coherent capital in the LC period (cf. Knapp 2008: 324-65; 2013: 446) and the segmentation of power into apparent peer polities such as Kalavasos-

[80] Papantoniou (2012: 103) admits the possibility of "undetermined territory" of minor hamlets or farmsteads that were "fluid over time (politically/economically)".

Ayios Dhimitrios and Enkomi (*sensu* Keswani 1996) also characterized the early 1st millennium BCE and resulted in the distribution of Iron Age cities around the various coasts and inland foothills. In a way, these insular landscapes have become metonymically associated with segmentary political forms.[81] Her work raises important questions about what this fragmentation means in terms of the emergence of different polities, which are argued to be of one "homogenous institution" (Iacovou 2007a). Is it enough to simply state that Cyprus, when it was putatively "independent,"[82] was always spatially fragmented? And did this spatial fissuring mediate unruly political landscapes?

In Iacovou's words, "a Cypriot kingdom is a territorial formula: the potential to carry out an independent economy is based on a geographically consolidated territory that provides access to mineral resources and to a port of export" (2007: 348). She formulates three specific "spatial ingredients" of an independent polity: 1) economic territory to procure natural resources, chiefly metal and to a lesser extent timber; 2) a coastal "emporium"; and 3) a self-sustaining territory to feed its population (2013b: 32). Thus polities like Paphos, with a territory that stretched into the western foothills of the Troodos and with a harbor on the coast, were in prime position to produce metal, with a stable workforce, and to take advantage of increasingly accessible Mediterranean trade (Iacovou and Peltenburg 2012; Iacovou 2008b; see also Kassianidou 2013).

Within this construction, the geographical distribution of copper resources becomes the "single invariable factor that made the decentralized polity system prevalent" (Iacovou 2013b: 31), although the evidence for earlier CG (10-9th c. BCE) copper mining and manufacture is not great, nor are there convincing arguments for copper abounding in interregional markets

[81] See Appadurai (1988) and that edition of *Current Anthropology* for articles on the metonymical intersection of space, political formation, and anthropology.

[82] Iacovou (2007b) sees the end of this political fragmentation occur with the Ptolemies who forced the inhabitants to live as a unified state with a common *koine*.

(although 11th-10th c. BCE ingots found on Sardinia seem to have Cypriot provenience: Kassianidou 2014: 265).[83] The environment is "immutable" and "harsh," and its seemingly unchanging topographical layout demands a unique political and social organization of autonomous polities reliant on copper, hinting at the type of ecological and economic deterministic theories known in culture-historical archaeology, such as Karl Wittfogel's (1957) hydraulic model of the rise of the state (see Smith 2011: 418).[84] Such an economic (or econometric, see Kosiba and Bauer 2013) approach to regional landscapes does, on the one hand, acknowledge the risks inherent in copper production and accepts that sites do not hang "in midair….as if their establishment and day-to-day existence had no need for an economic *raison d'etre*" (Iacovou 2013b: 18). Yet placing all of the importance of landscape construction, site location, and regional variation on a single resource, and specifically the presence of copper and its economic exploitation, limits the mechanics of social change to a unilinear, causal relationship between local and international demand for copper and political organization. Moreover, as Sturt Manning *et al.* (2014: 6) have recently argued, Iacovou (2005a) sees the city emerge in the Late Cypriot period as a product of state formation, rather than "exploring the process of urban development…when considering the social, political and economic trajectories of societies."

This economic argument also implicitly views space as a matter of "ingredients" – "the 'triptych' par excellence of the Cypriot politico-economic activity" (Papantoniou 2012: 94) –

[83] Kassianidou (2014: 265-267) describes a couple of slag heaps in the Troodos with radiocarbon dates for the 9th-8th c. BCE, as well as a copper oxhide ingot from Hazor (Israel) dating to the 9th c. with Cypriot provenience, "the only known ingot of the Iron Age from Cyprus." The apparent evidence for copper trade is circumstantial: the wealth of 11th-10th c. BCE necropoleis (Kassianidou 2014: 266).

[84] Iacovou (2013b: 18-19) refers to both the island's geography and geomorphology as "non-variable coordinates," raising questions of what she means by a geomorphology that does not change. See Catling 1966: 33-34 for a similar idea connecting the political fragmentation of EC sites into discrete areas that would later become the city kingdoms; Frankel 2009: 19.

rather than as a dynamic force conditioned through human practice and perception, and undervalues the political and social agendas that produced and reproduced it. As Iacovou (2013b: 19) admits, she defines landscape in the minimalist tone of a "backdrop against which archaeological remains are plotted" (cited from Ashmore and Knapp 1991: 1), and is more interested in resource exploitation "than with the socio-symbolic dimensions that landscapes acquire partly as a result of long-term human interaction with their exploitable resources." These understandings belie the common materialist assumption in Cypriot archaeology that copper drove all change and complexity on the island.[85]

Other scholars working within the recent "Cypro-centric" turn have advocated taking a regional approach to the 1st millennium BCE, investigating the material and political variation across the island yet adhering to the delimited number of polities known from textual sources (e.g. Smith 2009: 2). Vassiliki Kassianidou's (2013) recent survey of archaeometallurgical evidence for copper production and export in post-Bronze Age Cyprus takes each of the city-kingdoms in turn, and addresses the evidence for nearby copper sulfide deposits, ancient metallurgical activity, and ancient bronze artifacts. Although she notes the problem of identifying boundaries, her regional framework rests on the Neo-Assyrian inscriptions and the hypothetical territorial extents drawn from them and later sources like Eratosthenes, Strabo, and Galen. The geopolitics of the copper industry of the period dictate Salamis as the port of trade for inland copper from Tamassos, since it was essentially "too rich not to have a big part in the copper trade," as shown in the wealthy objects from its Royal Tombs (see also Iacovou 2002). Thus this textual and epigraphic arithmetic of known cities constrains the political landscape

[85] See e.g. Knapp (2013: 406): "external demand for Cypriot copper was instrumental in the rise of the urban coastal centres." Recent research (Leon n.d.; Andreou n.d.) is also critiquing the top-down approach to political economy solely focused on copper to consider agropastoral and "grey" economies.

within parameters solely conditioned by copper production and distribution, and to a lesser extent ports and harbors (e.g. Iacovou 2012).[86]

As Derek Counts and Iacovou (2013: 9) have recently asserted, this turn towards regionalism in studies of the 1st millennium BCE – as opposed to a unifying model of direct Mycenaean hegemony and influence, for example – helps to avoid a single explanatory model, which cannot encompass the unique and complex developments of each of these polities and their associated landscape regimes. Defining a 1st millennium BCE region, however, is a difficult matter. Unlike the vast amount of research on prehistoric regionalism throughout the 19th and 20th centuries (see **chapter 3**), less work has gone into the articulation of post-Bronze Age regions. There seem to be two general understandings of boundaries in current scholarship. One template concerns physiographically-bounded areas such as watersheds or valleys (e.g. Iacovou 2012, 2013b). Thus Papantoniou (2013: 40) argues that "from physical regions one can move to political regions and consequently to the territorial construction of the Cypriot city-kingdoms."[87] These environmentally-conditioned areas are drawn mostly from geographic works on the topographic zones of the island (e.g. Christodoulou 1959), and project political boundaries upon mountain ranges or along river valleys by assuming that they confined ancient practice.

A more traditional model investigates the territories of the ancient city-kingdoms using inscriptions, literary sources and later historical maps of the island to piece together where different regions began and ended, much as Moullart-Sasson attempted in the 18th c. (e.g. Masson and Hermary 1992; Mitford 1980; Rupp 1987; Iacovou 2004b). Within this framework,

[86] For a recent approach to Late Bronze Age complexity in relation to the position of harbors, see Brown 2013.
[87] Papantoniou (2013: 40; 2012: 92) a sentence earlier does note that "in the case of Cyprus natural landscape phenomena do not necessarily define political space. They only create regional units which might have helped the political organization of the island."

scholars place the fragmentary record of numismatics or engraved tablets onto the topographic basemap of the island, and work backwards to hypothesize the limits of a given polity's territories. For example, epigraphic evidence suggesting that the king of Kition took control of the city of Idalion, and later Tamassos in the 5th c. BCE, has led scholars to expand its classical/Hellenistic boundaries from the southeastern coast into the inland foothills (e.g. Masson and Hermary 1992: 26). Less common are methods that trace the potential changes in materials between regions. Scholars such as Sabine Fourrier (2002), Joanna Smith (2009), Anna Georgiadou (2013), and Anna Satraki (2013) have turned to artifacts, in the form of coroplastic objects, ceramics, or sculpture, to identify regional styles and/or workshops.[88] The use of compositional analysis via x-ray fluorescence technology or neutron activation analysis might provide a unique lens for investigating possible production centers and regional distribution, but remains relatively untested for the 1st millennium BCE until the late Roman period.[89]

Sacred or ritual landscapes have also become prevalent in Iron Age Cypriot studies of the consolidation of territorial control (see Alcock and Osborne 1994). Following the original and provocative argument of Francois de Polignac (1987, 1994) for the rise of the *polis* in the Iron Age Aegean, scholars such as Fourrier (2002, 2013) and more recently Papantoniou (2012, 2013) have claimed that the distribution of sanctuaries – and especially extraurban ones in the rural extents outside of cities – can indicate the relative boundaries of newly formed polities, as sanctuaries became the places where new authorities tested their control through the deposition

[88] Gjerstad's (1948) work on the Iron Age ceramic material has been criticized for its lack of attention to regional differences in style, although he later attempted to map out distinct culture areas reflecting the general east-west division of the island.

[89] Rautman, M., B. Gomez, H. Neff and M.D. Glascock (1993) Neutron activation analysis of late Roman ceramics from Kalavasos-*Kopetra* and the environs of the Vasilikos valley, *Report of the Department of Antiquities, Cyprus 1993*, 233-64; Gomez, B., M. Rautman, H. Neff, S. Vaughan and M.D. Glascock (2002) Source provenance of Bronze Age and Roman pottery from Cyprus, *Archaeometry* 44: 23-36. Bartusewicz (2012) has used petrography to look at production and distribution at the site of Idalion, concluding that there were no distinct production characteristics at different parts of the site.

of votives and iconographic or coroplastic displays of royal power. Fourrier's (2002, 2013) work, for example, most directly follows de Polignac's theory that these outer sanctuaries served to mediate between emerging hierarchical polities, developing first as the rallying points in which communities gathered. According to this model, new authorities in the 11th-9th c. BCE did not use sanctuaries as landmarks in a "politicized countryside;" it was only the ensuing Cypro-Archaic period, the 8th to 6th c., that saw these extra-urban sanctuaries become places of political display, where elites linked ritual practice to a particular urban area (Fourrier 2013: 107).[90]

As Catherine Morgan (1994: 107) has noted, de Polignac's (1984) main aim in his seminal approach to Greek religion was to trace the origin of the Classical *polis*, and he collapsed evidence from non-mainland, Greek-colonized contexts into an 8th c. BCE image of Greek sacred space and state structure. Even as he stressed the distinction between the emergence of 8th/7th c. peripheral sanctuaries and their predecessors, de Polignac did not focus on change and development within the cult systems of individual regions (Morgan 1994: 108; Papantoniou 2012; see de Polignac 1994). Moreover, other scholars have criticized de Polignac's methodological sampling of sanctuaries that he argued caused the rise the *polis*: some sanctuaries seem to have become evocative only after the emergence of a governing order that controlled them (e.g. Antonaccio 1994; see Alcock 1993: 172-214). For the case of Cyprus, the use of de Polignac's theory has fostered new insights into the development and materiality of sacred spaces – and raises questions about the possibility of processions enacted at boundary-gathering spaces (de Polignac 1984).[91] These arguments need more work to elucidate the

[90] Satraki (2010) also advocates the importance of sanctuaries in the construction of territorial boundaries and as tools to "read" the histories of 1st millennium BCE polities.

[91] Perhaps one of the more interesting elements of the model, as proposed by de Polignac, but to my knowledge missing from Cypriot case studies. Papantoniou's (2012: 114, n. 241) aims to build a GIS model of sacred landscapes (with cost surface analysis to look at routes and paths between sites) might help elucidate these questions.

chronology of these sanctuaries, however, and how their materialities affected the processes linking new authorities with rural populations.

Papantoniou (2012) takes a space-centered and macrohistoric approach to the changes in sacred landscapes from the Iron Age to the Hellenistic period, arguing that the spaces of ritual and sanctuary and their continuities can explain concomitant shifts in political structure and relations of power as the island transitioned from a network of polities to the control of one appointed *strategos* under Ptolemaic purview.[92] In a wide-ranging study of evidence of sacred cult spaces on the island in the 1st millennium BCE, Papantoniou (2012, 2013) adeptly "re-contextualizes" the surroundings of these sanctuaries and places them within their social and political networks, suggesting that some acted within frontier zones as contested spaces between polities (*sensu* Fourrier 2002). For Papantoniou (2012: 34), however, space can be dissected along categorical lines:

> If the sacred landscapes of the Cypriot city-kingdoms are examined from a political point of view, then space should be considered in relation to centre and territory, and if they are examined from an economic perspective then space should be divided between urban and rural.

This rather neat division seems to imply that urbanism belongs to the economy, whereas the "center" belongs to the political. Within this schema of "spatial order," the hierarchical arrangement of sites (Papantoniou 2013: 26), the segmentation of activities into different spaces obscures the overlapping and often complicated practices, at a number of scales.[93] More importantly, Papantoniou's use of the "political" remains vague. If "rural" (and here the word seems to connote mostly agricultural people living outside the city, Papantoniou 2012: 90) only

[92] See also Papantoniou 2013, an article which argues for physical regionalization on the island as the basis for the creation of autonomous polities.

[93] While Papantoniou (2012: 90-91) does acknowledge that "our views of what was rural or territorial position are simply anachronistic," his use of extra-urban is defended through the de Polignac vision of town-periphery, thus positioning these extra-urban sanctuaries and cult spaces only in opposition to the town.

belongs to the economic perspective, how do we understand the populations living outside of the urban centers politically?

Recently, Sarah Janes (2013) has used spatial and temporal analysis, facilitated through a relational (ArcGIS) database, to explore the impacts of new sociopolitical conditions in the mortuary contexts of the 1st millennium BCE. Following Manning (1998), she argues that mortuary remains in the tombs and burial compositions of the 11th – 7th c. BCE reveal changing identities in different regions of the island that developed alongside "the movement and negotiation of territorial boundaries." While her articulation of these boundaries conforms to the above-mentioned corpus of textual evidence for numbers of kingdoms, her awareness of the possibilities of communities using and re-using parts of the landscape in their mortuary practices (e.g. Amathus) underlines an important contribution to the study of developing landscapes outside of the urban center. In her study of the several burials positioned on the hilltops surrounding the acropolis at Amathus, Janes (2013: 161) considers the potential intervisibility of impressive monumental tombs with "hinterland" communities, highlighting a "more fluid and possibly fractious relationship between the center and the rest of the city-kingdom than has been previously considered."

Ultimately, these discussions of 1st millennium BCE landscapes, and the ways in which authorities either manipulated raw resources or created displays of wealth in culturally-salient meeting places such as sanctuaries, work within a framework that takes as fact the number and general arrangement of polities across several centuries. While in recent work, as mentioned above, the regional topographies of the island are becoming more visible, the study of landscapes remains at the level of the metaphor (see Smith 2003: 7 for this critique).[94] In this sense, the

[94] Smith 2003: 7: "landscape in this sense refers only to a stylized sketch of intersecting political forces, as useful in its tropic conventions as 'political climate.'"

powerful and alluring concept of an island fragmented into autonomous, homogeneous polities, each trying to gain access to the invaluable resource of copper, has constructed a lopsided history of political and social development, instead of investigating the complex interactions between communities and the landscapes that they perceived, created, and experienced. As others have argued (e.g. Fisher 2009; Manning *et al.* 2014), the place-making practices that affirm and re-affirm the power and legitimacy of authorities, as well as mark out social boundaries and elevate particular interactions, are embedded within the construction and maintenance of community spaces. I turn now to an outline of my own approach to political landscapes.

Making place: the spatial and environmental mechanics of the political

"The black box of landscape requires 'opening' and its contents themselves brought into view." (Hirsch 1995: 1).

As the present chapter has argued, the political landscapes of the 1st millennium BCE political configurations on Cyprus remain a type of "black box," marshalled by scholars for various ends but nevertheless remaining "elusive" (*sensu* Iacovou 2013b). Whether seen as the constrictive geological and geographical force which herded communities in the 11th and 10th c. BCE around the *basileus* figure in control of copper production (e.g. Iacovou 2013b), or as the spaces belonging to rituals that created frontier gatherings between competing territorial regions (e.g. Papantoniou 2012), "landscape" requires some more explanation to explore the recursivity through which it shaped and was shaped by political or social processes. As the last three or so decades of anthropological and social research taken up by the "spatial turn" have shown (e.g. Smith 2003; Lefebvre 1991; Tuan 1977; Alcock 1993; Bradley 1998, 2000), landscapes and society are co-constituted through practical and ideational relationships, and the spaces, places and environments – real or imagined – that human groups perceive and create are directly

instrumental to the reproduction of their own social, political, and economic order. It is to opening the black box of these processes that this dissertation turns, exploring the mediations of landscapes through which the early 1st millennium BCE system took shape.

Defining "landscape" has become a significant and prevalent endeavor in the last few decades, across (and between) a wide variety of social and humanistic disciplines. While there is a "newly spatialized understanding of social life grounded in landscapes" (Smith 2011: 423; see e.g. Alcock 1993), the semantic complexity of the term has created a wide range of definitions, applications, and justifications for the very broad and encompassing "landscape studies," especially in the field of archaeology (see Johnston 1998; Fowles 2010; Ashmore 2009).[95] Where in early modes of archaeological thought landscape was either background or a synonym for region, implying a mere difference in methodological scale, now it is increasingly recognized that landscapes are configurations of spaces – implicated in practices of memory, ideology, community, and identity - which mediate between individuals and larger social institutions through the experiences of daily life (Feld and Basso 1996; Bender 1993; Ashmore and Knapp 1999; Anschuetz *et al.* 2001). Here, "practice" has emerged as a forceful concept that attempts to bridge the capacities and decision-making of individuals with larger societal and institutional structures, both of which together produce and re-produce society (Bourdieu 1977; Giddens 1984). And, where painterly connotations of landscape-as-text tended to treat it as something entirely produced through modern visual appropriation, studies are now thinking about what landscape-as-agent *does* (Smith 2003; della Dora 2009).

[95] E.g. Jackson (1986) The vernacular landscape. In E.C. Penning-Rowsell and D. Lowenthal (eds) *Landscape Meanings and Values*, 65-81. London: Allen and Unwin. On etymological and philological definitions of landscape via the Scandinavian "landskip" see Olwig (1996) Recovering the substantive nature of landscape. *Annals of the Association of American Geographers* 86.4: 630-653.

Interest in past landscapes ranges from research on larger-scale phenomena such as settlement patterns, peer-polity networks, and regional economic resource catchments (e.g. Cherry 1987; Wagstaff 1987), to the interrelationships between monumental buildings or structures and the spaces and dwellings around them (e.g. Fisher 2009; Parker-Pearson and Richards 1994). Exciting work is exploring the repercussions of landscape perceptions and imaginations (see e.g. Cosgrove and Daniels 1988) through ancient representations in various media (e.g. Mitchell 1994; Della Dora 2009), while others challenge the hierarchy of vision to explore synaesthetic and phenomenological understandings of space and movement (e.g. Tilley 1994; Bender 1993). Previous research has gone into great detail exploring the archaeological usages and discussions of landscape and its interactions with past societies, so I briefly turn to the aspects of this theoretical and methodological discourse salient to this project (see Ashmore and Knapp 1990; Smith 2003: 1-30; Anscheutz *et al.* 2001; Hirsch 1995). These include 1) a relational account of landscapes, 2) the importance of incorporating environmental factors (e.g. physical biota) into our examinations, and 3) the concept of a "bottom-up" approach, which withdraws from the figure of the king and his city to consider place-making in less-studied and unruly contexts (see Hritz 2013).

Adam T. Smith's (2003: 73-4) archaeological understanding of the three dimensions of political landscape conceived by Henri Lefebvre (1991) and David Harvey (1996) – experience, perception, and imagination – is an influential starting point for conceptualizing the interactions between people and physical spaces in the past, often across various media and spatial and temporal scales. These three dimensions – covering the material practices and technologies of space, the evocative perceptions linking human actors with their surroundings, and the discursive spaces invoked in real and imagined representations – work together "to build space back up in

close relation to a social account of temporality" (Smith 2003: 75). In this relational account of landscape, space and time are considered as sets of relationships that are not at odds and are not absolute – the focus instead is on the social practices that create, uphold, or even take apart the configurations of these relationships (Smith 2003: 69-77).

In this framework, the concern rests on the ways in which places mediate actions of authorization and subjection through local and contingent practices, drawing upon the concepts of *habitus* (Bourdieu 1977) and structuration (Giddens 1984). The former encapsulates the routines of everyday life that accumulate, through repetition and lived experience, to create the conscious (and often unconscious) instructions that reproduce those habits. Anthony Giddens' use of structuration works to explain how society is continuously created and re-created through actors constrained by social structures. Both of these concepts of practice theory are valuable for their interest in the spatiality of experience, as they articulate how places become the contexts in which social boundaries are tested and reproduced (see Fisher 2009; see e.g. Smith 2011 for a review of recent work on political landscapes).

Important recent contributions to the archaeology of social and political boundaries, such as Miriam Stark's (1998) edited volume, forward this focus on practice and the everyday, routinized actions – craft production, eating and drinking, constructing and inhabiting buildings - that produce the spatial patterns of community and power relationships. Given (2004: 138-161), for example, has explored how landscapes afford groups the possibility for resistance, not just in episodic conflict, protest, or violence, but in the quotidian practices of subsistence or travel. Others have examined how certain built or natural features can draw communities together through a perceptual or imaginative construction of social and political belonging (Stewart 1996), as well as reinforce existing asymmetrical divisions (Fisher 2009). Other concepts such

as territoriality (e.g. Brown 1987), the spectrum and mechanics of public and private space (e.g. Markus 1993; Hillier and Hanson 1984), and place attachment (e.g. Scannell and Gifford 2010), help to further articulate the tension between place, the political, and lived practice.

As conceptualized in this dissertation, the practices that forge landscapes of experience, perception, and imagination are constantly assembling and re-assembling (see de Certeau 1984: 102; Smith 2003: 70-71). Implicated in the political account of landscapes are the mechanics of authorization and ruler-subject relationships, and the practices that both fused and divided social groups in 1st millennium BCE Cyprus (*sensu* Smith 2011). Landscapes are inherently political (Bender 1993; Falconer and Redman 1999) – from the translocation of town centers away from non-elite Aztec markets (Garraty and Ohnersorgen 2009), to the micropolitics of slaves working the colonial garden estates of antebellum North America (Kealhofer 1999). While the material and environmental evidence of this dissertation precludes a discussion of the specific actors who controlled land use practices in the Vasilikos and Maroni valleys, the political landscapes that they created – terrace walls, community spaces, mines, and ritual areas – serve as the focus with which to understand 1st-millennium BCE human-environment interaction and the development and constitution of authority.

Attention in landscape studies to continuities or discontinuities in practice, and to the nonlinear temporalities that create political and cultural landscapes, has also questioned how "a sense of place emergent in re-membered ruins and pieced-together fragments" of the past articulates with new configurations of space (Stewart 1996: 137; see also Van Dyke 2008; Schama 1995). Recent research has explored the possible connections between older and newer forms of political organization, linked through the mediations of memory and place (Van Dyke and Alcock 2003; Smith 2011; Yoffee 2007; Khatchadourian 2007), and the changing content of

these memories over generations (Bradley 2003). As a number of scholars have noted, the practices of the everyday as well as those of the more *événementielle* are situated in places that structure social memory, acts of forgetting and remembering, and conceptions of the present. As shown in discussions of survey material in **chapters 5 and 6**, these connections between disconnected temporalities and remembered or disremembered places are important to understanding 1st millennium BCE (re)generation.

Integral to this relational characteristic of landscape is the instrumentality of the physical environment within the experience and construction of places. As interpretive approaches to past landscapes have focused on the ideational, symbolic, and sociopolitical roles that spaces and territories play within the production of society (e.g. Papantoniou 2012: 77), the connections to the actual land – its soils, organisms or inorganic matter, climates – have often been ignored. Indeed, work on paleoenvironments, catchment size, or the geomorphological limitations of given regions tends to be quickly nudged into the "processual" or culture-ecological camp of scientifically-minded and systems-centered archaeology of the 1960s and 1970s (e.g. Kosiba and Bauer 2013). Yet even the ideational landscapes of ritual practice or the development of regime-controlled urban spaces, for example, are often closely tied to their specific physical contexts, which are subject to local and regional patterns of climate and environment as much as they are human engineering. My concerns with landscape in this project work to recuperate a sense of the *lands* that participated in the developments of communities, and their climatic and environmental composition and changes (Smith 2003: 239). This reclamation is put forward to suggest that the study of 1st millennium BCE landscapes should inquire how lived practice within a low-elevation river valley with uncertain shifts in growing seasons and water availability might

condition and re-condition local *habitus* as well as the perception and imagination of community and control.

Attending to the physical matter of the environment and climate enrolled in the making and un-making of ancient landscapes runs the risk, however, of becoming too presentist. That is to say, in an "Anthropocene" age increasingly anxious about the dangers of climate change and environmental degradation (Crutzen 2002), and ever more wary of the fragility and finitude of our ecosystems (Mitchell 2008), is our burgeoning focus on past human-environment relationships more fad than fundamental to a robust archaeology (Dawdy 2009: 140-141)? I argue that this risk is only pertinent when we leave the discussion at the macroscale and personify climate or environment as primary movers, rather than execute detailed investigations of our human (pre)history of complex entanglements – real and perceived – with our surroundings. While the practitioners of archaeology have long been interested in ancient environments, under different guises, as I explore in more detail in **chapter 3**, I think that our current "environmental turn" marks an important development within the field. My work thus dovetails with trends in scientific and humanistic research on ancient environments that seek to understand the complicated and mutable interactions between people and their surroundings (e.g. Rosen 2007; McCormick *et al.* 2012; Sandweiss and Kelley 2011).

The innovative theoretical underpinnings of this project, in repositioning the environment as an important aspect of the dialectic co-constitution of societies and landscapes (Dawdy 2009: 141), might seem to push toward environmental determinism, or to the rising neo-determinism of the last decade (Hulme 2011). In insisting that environments do not create polities, and yet finding that environmental contexts – increased precipitation in semiarid coastal plains, access to copper, arable soils – do shape the development of new and unruly practices, I could be charged

with refashioning a type of determinism that has long been implicit within the field of Cypriot archaeology. But I believe that there is a distinction between generalizing statements of environments *doing* something to societies at the macro-scale, and research that seeks to examine the intersections between groups and their surroundings through more fine-grained analyses. The former are reductive and static, while the latter aim to understand the myriad ways in which those human-environment relationships are forged, by piecing together how specific environments were constituted within a given social and political order (Smith 2003: 279). Thus my understandings of landscape resist staying at one, macro-level, to explore instead the interweaving of physical surroundings, social formations, and experiences and practices of space. More importantly, they do not aim to create a *de facto* theory for all human-environment relationships in this period, but instead propose that multiscalar analyses can examine how certain environmental or climatic conditions were salient for ancient populations, and how their unruliness shaped social and political development.

And finally, as introduced in this chapter, this dissertation withdraws from the out-sized gaze on the city in Cypriot archaeology to examine the emergence of complex social and political order on the ground and from the "bottom-up." Here I do not push aside the dominant discourse of "top-down" approaches on Cyprus, which favor written testimonies of dynastic progression and the noteworthy vestiges of urban, elite or royal groups and institutions like the *basileus*; rather, I reveal the possibilities of non-urban and non-elite landscape practices as a complement that has to date been rarely examined. The bottom-up viewpoint, as noted by others (e.g. Silliman 2001; Sahlins 2004: 139), has its origins in Marxist and 20th c. structuralist discussions of labor and power in political economies. In this register, it advocates for the perspective of laborers-as-agents in contrast to the ruling authorities, and aims to gather the

many pieces together, at the bottom, rather than to start with the head, or center. For my purposes, "bottom-up" takes the perspective outside of the monarchical center of the 1st millennium polity, into the fields, harbors, and mines that produced and challenged its authority, and whose inhabitants – as multiple, diverse communities – exist beyond the written record. I argue in **chapters 4 and 5** that it is within these "unruly" contexts outside of the engraved lists of cities that evidence for the production and sustaining of new social boundaries might be exposed, through an integrated approach combining archaeological survey evidence with paleoenvironmental reconstructions. As recent work on ancient hinterland dynamics has shown (e.g. Cooper 2010), the common assumptions of a *chora* subject to its city center are often untenable, instead indicating their loose and wavering control, and even the possibility of "unregulated" frontier regions (e.g. Parker 2003; see Harris 2005a).

Such a lofty aim as to recover a sense of the spatiality of the polity from the bottom up necessitates a multiscalar approach, especially in contexts of fragmentary or poorly published data. Current anthropological archaeology is demonstrating that multiscalar spatial analysis can be one of the most productive tools with which to understand political processes of complex societies, moving from the scale of the individual subject to that of the settlement, polity, or even empire (Osborne 2011; Wilkinson *et al.* 2007; Khatchadourian 2008). Although the individual is a critical analytic scale for discussions of sovereignty or subjection in closely-knit conjunction with the history of the collective (Sahlins 2004: 125-193), the evidence available for this project is more suited to understanding how groups cohere into communities and institutions that frame, resist, worry, or elide the political. Archaeological survey evidence, as discussed in **chapters 5** and **6**, while integral to a study of land use, settlement organization, and political territory, remains excessively difficult to parse at the level of individual actors. And, while studies are

increasingly illuminating the dynamics of the micro-environment (e.g. Hritz 2013; Pournelle 2007), the paleoenvironmental evidence presented here necessitates a wider scalar approach, covering particular valley regions, the island, as well as the eastern Mediterranean. As this dissertation will argue, the scales at which the 1st millennium BCE polity on Cyprus emerged, and the landscapes and materials that mediated those spatial conditions, were interdependent and dynamic.

Before introducing the methodology, data, and interpretations of this project, I turn now in **chapter 3** to a closer look at the development of attention to landscapes, and particularly environmental evidence, in the history of the archaeology of Cyprus.

Chapter 3

Surveyors, archaeologists, and the enchantment of topography: a history of environmental thought on Cyprus, 1865 - 2013

In 1926, Einar Gjerstad, leader of the Swedish Cyprus Expedition and "father of Cypriot topography" (Catling 2008), claimed that "although it is not wise to give the guests the worst wine at first, this is what must be done. The topography is given first, as it should be, but unfortunately the material is very defective" (1926: 3). Four decades later, Robert Merrillees had concurred that "one of the most neglected, yet surely most interesting of all the factors which played a decisive part in the formation and development of Bronze Age civilization in Cyprus is its topography" (1965: 140). Three important factors that characterize the field of Cypriot archaeology reside in these statements. The most obvious is the attention to *topography* – in Gjerstad's case, the physiographic features that created culture areas, and for Merrillees, the relationships between surface and site distribution. For much of the course of the last century and a half, this term assumed great importance for examining, implicitly and explicitly, the surface features – mountains, coasts, rivers – that impacted on the development of human life on the island. An additional link in both quotes is the recognition that the study of ancient surfaces is defective on Cyprus, yet crucial to archaeological knowledge. These quotations reveal an oft-cited feeling in Cypriot archaeology that more information is required in order to study *ancient* settlements within the landscape, but that existing records are inadequate.[96] And finally, both Gjerstad and Merrillees are concerned with the topographies of prehistoric or Bronze Age sites,

[96] See for example Merrillees' later (1975) assertion that distortions in the archaeological record, created through shortcomings in scientific fieldwork, can lead to underestimation and obscuring of archaeological interpretation. But this call for scientific fieldwork seemingly belongs to the realm of others – scientists – not archaeologists.

and link the study of ancient land forms to prehistory, rather than extending it for the duration of the island's human history.

This chapter situates the field research on paleoenvironments and survey evidence undertaken in this dissertation within the broader context of archaeological attention to landscape histories and environments on Cyprus. The institutions of forestry and land management established under the British colonial regime, and a subsequent tendency amongst 20th c. scholars to focus on issues of topography and regionalism, has contributed, on the one hand, to the production of one of the oldest archives of studies on site distribution and location in Mediterranean archaeology (see contributions in Iacovou 2004a). On the other hand, many scholars following Gjerstad have rightly called attention to the dearth of environmental evidence for Cyprus and the disinterest in landscape change characteristic of many projects. In what follows, I consider this paradox by exploring how archaeologists have envisioned the environments of the island, how these ideas articulate with the developing archaeological academy of the 19th and 20th c., and some future directions.

While others have traced the general profile of archaeology on Cyprus (Bolger 1989; Pilides 2008; Knapp 1994), the history of environmental research has surfaced mostly in relation to the largely pessimistic picture of the island's paleoenvironmental records (Stanley Price 1979; Held n.d.; Noller 2010; Rupp 1997; Simmons 2009). Several brief surveys have noted that evidence for ancient environments on Cyprus still remains patchy after years of unsystematic field sampling, varying standards of publishing results, and a tendency to examine singular objects and monuments rather than non-human or ephemeral materials (Colledge 1989).[97] The

[97] Butzer and Harris (2007: 1932) describe the environmental record of the island as "inchoate" and fragmentary, and that an environmental history "cannot yet be assembled." Colledge (1989) also notes that such a study has not been possible beyond a general level, because of these inadequacies.

poor preservation of some organic matter such as pollen and the alarming loss of land through the expansion of modern development and mechanized agriculture further fracture our ability to study past environments (Butzer and Harris 2007: 1936).[98] These brief accounts, however, have either outlined specific sub-fields of environmental research (faunal remains, paleoethnobotany, geoarchaeology), or have considered environmental studies only within the rather narrow time frame of the last few decades. Attention to environments before the 1970s is therefore less known, and particularly, the perspectives of early 20th c. scholars – enmeshed within the rise of culture history and the focus on culture areas – which have been significant in the development of archaeology on the island. Rather than construct a presentist critique of earlier modes of research, this chapter aims to map the contours of archaeological thought on environments and to sketch the interweaving of scholarship and contexts of empire, independence, and invasion, as well as the persistence of particular themes, such as environmental determinism, which oscillate – with changing meanings - across decades. Building off of the discussion in the previous chapter on the archaeology of Cypriot spaces and landscapes, this chapter focuses on the use of "environment" throughout archaeological discourse on Cyprus.

Secondly, this chapter analyzes the production of an environmental history of the Cypriot Iron Age. The development of thought on landscapes and environments happened almost entirely within the study of the island's prehistory (often not even including the Late Bronze Age), restricting the study of later periods to objects, tombs, and singular monuments. As argued in this chapter, the overwhelming weight that ancient sources have commanded in arguments of post-Bronze Age landscapes has rendered their scientific and interdisciplinary examination relatively marginal. The drama of a Late Bronze Age island-wide calamity at the end of the

[98] But see e.g. Gifford 1978 on pollen from Larnaca and Kaniewski et al. 2013 on a lake sediment core, and pollen profiles, also from Larnaca Salt Lake.

second millennium BCE (see Cline 2014; Carpenter 1966), on the other hand, has further posited the Iron Age environments as degraded, without much supporting evidence. Excavated Iron Age (and later) sites, particularly those with material from decades of field seasons bursting out of store-sheds, have typically fostered the study of chronology and typology (particularly of sculpture and ceramics) rather than their surroundings. This chapter thus looks more closely at the enduring theories that have structured landscape studies as discussed in **chapters 1 and 2**.

First, I explore the period from the earliest antiquarian interest on Cyprus in the 19th century to the work of Sir John L. Myres in the early 20th c., when foreign officials began cataloguing the island's history via large-scale and methodologically-loose digging projects. Emerging in this context are the aesthetic views of Cypriot rural landscapes and the importance of self-observation and in-field autopsies, an emphasis on "seeing" that would remain significant throughout the 20th c. The second section addresses the period from the First World War, with the arrival of the Swedish Cyprus Expedition, to the initiation of the Cyprus Survey in 1955. In the third section, I examine the period from the tumultuous early years of the Republic of Cyprus to the digital methods of the present day. The quantitative or scientific turn in the 1960s and 1970s led interdisciplinary teams, directed by foreign missions trained in the emerging processual archaeology, to overhaul the culture-historical interpretations of ancient regional settlement patterns.

These moments of re-orientation in inquiry and research, outlined in the first three sections, emanate from particular scholars as well as changes in practice, conjoining new theoretical frameworks with innovative methodologies. They also reveal the political, cultural, and historical screens through which scholars have viewed and studied past landscapes. The last

section serves as a discussion of several themes that emerge in this history and which highlight areas for future work, most prominently in the collection of more high-resolution data.

Cesnola to Myres: antiquarians and the beginnings of geographical inquiry

Within the scope of 18th-19th c. Enlightenment interest in the natural world and its evolutionary history (O'Connor and Evans 2005: 1-4), studies on environmental phenomena throughout Europe coincided with, and sometimes interacted with, the early stages of archaeology. In 1848, for example, the Danish project led by Jens Worsaae pioneered the field study of the paleoenvironment by combining archaeological, geological, and biological training in order to outline a broad prehistoric chronology for Scandinavia through the analysis of tools found in distinct levels of forest vegetation and the introduction of a Three Age System (Trigger 2003: 130-133, 315). The beginnings of archaeology on Cyprus in the later 19th c., however, took place on an island that many Europeans and British travellers had never visited, and that existed within a vaguely imagined and mythic geography (Edbury 2001; Serghidou 2001). Descriptions of the island in the available encyclopedias of the late 18th and early 19th c., for example, juxtaposed the ancient escapades of Aphrodite with Orientalist connotations of loose women and degraded landscapes (Edbury 2001). By the mid-19th c., the unique forests, mountains, and coastlines of Cyprus and their insular peculiarities began to attract geologists, botanists, and paleontologists, such as the important geological survey work of F. Unger and T. Kotschy's (1865), who had started to collect and interpret evidence on the local terrain (Harris 2007: 8-9). Yet the authoritative descriptions that most 19th c. foreign travellers to Cyprus used to frame the island consisted of dramatic extrapolations from Strabo and Pliny and little actual information about the present day environments (Edbury 2001; Serghidou 2001). These perceptions would

not only color later descriptions of the landscape but also cloak the idea of the ancient environment within a world of fertility and prosperity. The incipient rush to collect antiquities, seen around the Mediterranean and Near East, confined itself to the description of discovered finds, set against a narrative of tomb-raiding peasants and poorly-maintained lands.

Figures such as Luigi Palma di Cesnola (1877) and Sir Robert Hamilton Lang (1878) lend 19th c. antiquarianism on Cyprus a particularly anti-scientific haze due to their primary pursuit of excavating objects to sell to fledgling world museums (Myres 1914: xiv; Tatton Brown 2001; Pilides 2008). The overwhelming interest in digging up sculpture and vessels from tombs certainly outshone the study of their surroundings; yet the methodology of the period relied on direct field observation and often included hypotheses about the original landscape setting of ancient remains (e.g. Cesnola 1877: 64-65; 87; 96; 183-185; 205-206). Cesnola (1877: 6-7), for example, opined that the entire island was originally covered with wood, echoing the diagnosis of Eratosthenes (Strab. 14.6.5) and foreshadowing the later 19th c. forest-recovery work of the British state. Lang's (1878: 256) personal account of the island's history, and his interest in estate management, included the geological and agricultural maps of Albert Gaudry (1862); but the majority of contemporary observations focused on objects, and "context" meant the fragmentary geography of ancient sources like Strabo or casual observations on the exotic and seemingly timeless terrain of rural Cyprus (e.g. Cesnola on Golgoi, 1877: 105-106; Steel 2004: 7; Serghidou 2001). Autopsies of tombs and temples and 'power of observation,' however, could be criticized: David Hogarth (1888:12), in a description of the area of Cape Drepano in the Akamas, chided Cesnola's failure to locate a particularly obvious "mass of ruins" and questioned "if the General ever went to Drepano at all." Viewing, and importantly the self-inspection of ancient ruins as complements to the accounts of Classical historians, established an

archaeological attitude towards environments as one of remarkable but ultimately auxiliary backdrops to art.

The transition to British imperial rule of Cyprus in 1878 brought with it several measures that facilitated this descriptive mode, as well as a preconceived judgment of the island's environmental and, importantly, insular history (Harris 2007; 2012). One was the intensive reconnaissance of H.H. Kitchener, who argued for the implementation of a triangulated survey that would chart the topographical relationships between environmental resources and features like antiquities (Shirley 2001; Harris 2007: 84). A second was the institution of a Department of Forests, one of the first in the Empire, which sent agents out to classify and mitigate what were assumed to be the degraded states of the island's forests, having been mismanaged for centuries under an Ottoman watch (Given 2002b). As Sarah Harris (2007: 18) has argued, colonial reports on the diseased, deforested expanse of the central lowlands drew from ancient sources such as Eratosthenes as well as from certain stereotypes of productive Mediterranean climates that did not meet imperial expectations. The resulting "forest hypothesis" that claimed that the dry central Mesaoria plain was once lush and wooded became a trope that would surface throughout the next century (e.g. Jones *et al.* 1958; Thirgood 1987).

In recent years several authors have challenged this accepted environmental history of the island, most successfully by highlighting the misuse of textual sources and by carefully examining colonial and twentieth-century *topoi* of degraded forests and mismanaged agricultural land (Harris 2007, 2012; Butzer and Harris 2007; Given 2002b; Burnet 1997). J. Ellis Burnet (1997) has critiqued the superficial adoption, and often non-contextualized use, of ancient Greek and Roman sources as evidence for deforestation and land misuse in the later first millennium BCE and Roman period. Harris (2007, 2012) cogently sifts through British-era official

statements and later colonial propaganda (such as the 1946 film *Cyprus is an Island*) in order to deconstruct the complicated imperial and scholarly motivations that contributed to a skewed place-making enterprise, one which pitted local shepherds against the forest-saving British government (see also Given 2002b). As she asserts, British and non-local assumptions of what a Mediterranean landscape should look like – forested, green, and not covered in patch shrub – contributed to a "Lost Eden" myth of degraded wilderness, and partly belonged to the corpus of landscape representations of contemporary Europe.

Yet the colonial state's prerogative to map and to see the island laid the groundwork for later archaeological practice and survey on Cyprus, before other areas of the Mediterranean, by recording various features in the landscape and establishing early methods for surface observations. Part of the Forestry Department's mission was to mitigate the coastal marshes in the Famagusta area, a strategy that led Max Ohnefalsch-Richter, serving briefly as Superintendent of Works for Replanting the island in 1881, to the site of Salamis (Ohnefalsch-Richter 1893: 24; see Gole 1996; Harris 2007: 432). In his seminal publication on the island's ancient connections to Near Eastern and Greek motifs (1893: 24), Ohnefalsch-Richter noted the conflict of interest between efforts to restore the environment and those to excavate: "the idea was a good one from the forester's point of view, but scarcely commended itself to the archaeologist." This early officer-turned-archaeologist, through his proximity to colonial accounts of the Cypriot environment and trained observations of landscape features, emphasized the role of place and nature in the study of ancient ritual (Ulbrich 2001: 99-101). Ohnefalsch-Richter's account of sacred sites is full of brief nods to their settings, such as the irrigation system and olive trees around the site of Voni (1893: 3), and he contended that sanctuaries associated with prominent reliefs or water sources reveal the human condition that unites ideas

with "the natural environment," defined via its aesthetic and visual signifiers (e.g. 1893: 3, 231; Tamassos, 11). His repetition of terms such as "fertile," however, belies a close reading of ancient sources (e.g. Strabo 14.6.5, *arête*) and less of a scientific understanding of the geology or hydrology. Within the established traditions of direct field observation, Ohnefalsch-Richter added his own conception of the ancient 'environment' as socially and culturally meaningful, yet only vaguely defined via its visual formations.

The move from descriptions of an assumed ancient topography, or its modern counterpart, to the first attempts to understand the composition of the ancient environment appears with Sir John Linton Myres at the turn of the 20th c. CE. Working at the time of, and alongside, influential geographers like Halford John Mackinder and Ellen Churchill Semple, the latter of whom introduced the concept of environmental determinism to the English-speaking academy, Myres reoriented the study of Cyprus' history through the lens of geography and culture-history (Trigger 2003: 317; Bolger 1989; Myres 1914).[99] Myres (1926) argued for the geographer's goal of observing, via immersion in the field, those environmental phenomena that shape and constrain human history, an uncommon method for Cyprus at the time (Catling 1962).[100] In his prefatory essay to the *Handbook to the Cesnola Collection* (1914: xxvi-xlii), for example, he juxtaposed a theory of past vegetation cover against the scattered available archaeological evidence for prehistoric settlements, drawn mostly from tombs, which refocused inquiry to the surroundings of sites - the culture area - and their capacity to impact human choices. "Where does this or that kind of occurrence occur," Myres (1926: 285) would later ask, "and how distributed among other occurrences in this or that region of the earth?" For a semiarid

[99] His *Dawn of History* (1911), for example, argued that all hierarchical societies developed from politically dynamic pastoral peoples who were forced by drought to leave their homelands and to conquer and rule less innovative peasant societies (see discussion in Trigger 2003: 241).
[100] Catling would describe Myres' period as one with little or no interest in field exploration for its own sake.

island such as Cyprus, with sites intimately associated with coasts and available water sources, Myres established a practical way to explain site location using emerging scientific data, and countered the aesthetic and overtly-visual importance of earlier interpretations.

Myres (1914: xxviii) distinguished three vegetation zones that he argued would have determined the locations of prehistoric settlements, a picture underpinned mostly by the few existing 19th c. geological surveys (Unger and Kotschy 1865; Gaudry 1862; Steel 2004: 7). Such an influential assessment is worth reading in full:

> *Before its appearance was modified by human effort, the surface of the island* was occupied by three types of vegetation: water-logged marsh in the central lowlands; dense forest, mainly coniferous, in the uplands; and between these a belt of parkland, composed in varying proportions of deciduous and evergreen trees and shrubs, with rich meadow fringing the fens. The distribution of the earliest sites and tombs shows that it was this parkland which first attracted immigrants; and at most of these first settlements we find the primitive corn-rubbers, and large milkbowls and ladles, characteristic of pastoral and agricultural people. The great fens were impassable early, and even now are but partially reclaimed; but the forests were more penetrable, and were gradually cleared for timber, and also, when the copper mines were opened, as fuel for the furnaces. (my emphasis added)

While he asserts in several places that the prehistoric landscape was different than the modern one, his conception both advances and muddies the picture of the ancient environment. Certainly, Myres' discussion of vegetation, types of forest composition, climate, and even the transformation of wood into fuel introduces a remarkable awareness of environmental variation to archaeological interpretations. Yet his initial statement – a particularly insightful comment for the time – seems to suggest that human activity had manipulated landscape appearances, without explaining the mechanics (or temporality) of change.[101] In addition, he explicitly connects these

[101] Myres (1926: 292) later would expand the idea of landscape change via processes: "for the only distributions which seem to me to matter at all, are distributions of processes. The processes may be very gradual – the upheaval or the degradation of a mountain range, the accumulation of a shingle-beach or a delta, the replacement of oak-forest by beech-woods across a continent; but their actual profiles and boundaries are contours on the scale of time; they lie between the contour of yesterday and that of tomorrow, and are as inseparably connected

changes to the surface of the island, and hints at what, I would argue, would become the foundational interest in later Cypriot archaeology, its topographical history in relation to its "distribution of the earliest sites and tombs." A gap begins to emerge between the limits of knowledge on ancient environments, drawn from extant textual sources and only a handful of contemporary scientific studies, and the willingness to ascribe locations of settlement and practices to environmental factors (e.g. water, mountains, productive soil). In other words, Myres' necessarily minimalist viewpoint, based on the limited information that he had, evolved to become a satisfactory way to explain a site's location and has contributed to the brevity of orientation to obvious physiographic features (mountains, rivers, coasts) in many subsequent site reports. Finally, Myres' discussion of this surface history occurs only in his section on the Stone Age, the earliest prehistory ("before its appearance was modified by human effort"), setting in place the assumption that environmental information belongs with the study of the deepest past, and not its later periods.

Mapping culture history: the Swedish Cyprus Expedition to the Cyprus Survey, 1927 – 1960

The Swedish Cyprus Expedition (SCE) led by Gjerstad developed classical approaches in the 1920s (Åström *et al.* 1994). Known for the scientific methodology of the project and the detailed precision of their publications, the SCE undertook new, planned field exploration (see Åström *et al.* 1994).[102] Gjerstad's (1924; 1926: 1-3) own interests in the spatial distribution of

with those past and future distributions as the fifty-foot contour is with the hundred foot contour on the one side, and with mean sea level on the other."

[102] Trigger (2003: 129-138) discusses the deep current in Scandinavian archaeology for typological classification, beginning with the work of Worsaee, Steenstrup, and Forschhammer on the 'kitchen middens' in the mid-19th c., through the work of Linnaeus. The SCE, I would argue, should be seen within this local tradition.

sites formalized the study of ancient Cypriot topography beyond the classical texts. He outlined a principal task of the archaeologist: the description of its culture area and its "external relations," which together he termed the "genetical view of events." This *topos* of rigid classification shaped his conception of the environment as largely reified, a surface with blank spaces to be filled with new discoveries. It also branded topography as a *genesis* of archaeological work: a site's location, however rudimentarily explained, must precede classifications and interpretations of its archaeology, the latter of which Hector Catling (2008) would later describe as Gjerstad's primary focus.

Gjerstad (1924: 2) further distinguished the need for the archaeological map, because only such a map "with explanatory text and with complete references gives a clear view of the ancient topography of the country concerned." Indeed, he plotted six regions of unique material culture around broadly sketched physiographic elements, what he called the "general qualifications of Nature for the cultural development of Cyprus" (Gjerstad 1926: 17), drawn from the Myres-era environmental history of the island and his own autopsies. He repeated Myres' descriptions of a prehistoric marshland, as well as noted the repeating patterns for ancient site location: access to freshwater, sloping ground, and the hills between the lowlands and uplands (1926: 6). Importantly, the archaeological evidence was mostly drawn from necropoleis, not settlements, and these were plotted in order to see the blank areas with which to find "as many of the remaining sites as possible." This latter sentiment captures the contemporary (and enduring) assumption that sites are there, in the landscape, waiting to be discovered. His observations of rural Cypriot populations, in addition, led him to consider most of the prehistoric period as one of agricultural and pastoral settlements. Gjerstad elevated the topographical map as a key tool for explaining settlement location for subsequent archaeology on Cyprus.

Throughout the 1930s, a growing number of discoveries contributed to updated theories of prehistoric site location in relation to prominent environmental factors. An understanding of spatial relationships between sites evolved piecemeal as surface reconnaissance and excavations remained relatively small and studies on the geology and terrain of Cyprus developed outside of archaeological inquiry. Porphyrios Dikaios (1936), first Curator of the newly formed Cyprus Museum in 1935, hypothesized that access to water had been a key determinant for prehistoric inhabitation and sought out perennial springs as indices of nearby sites. From his excavations at Erimi in the 1930s, and his follow-up to Gjerstad's cartography of known settlements, Dikaios would argue that environments – principally the availability of freshwater – had determined the dispersal of sites. Yet this sense of environmental forcing remained vague, and outside the purview of most work, as archaeological focus still sat firmly on the study of artifacts and the construction of regional typologies and chronologies (see Bolger 1989).

Within this focus on classification arises the first treatment of organic remains *as* artifacts, due to the ingenuity of a particular group of archaeologists. Between 1937 and 1938, James Stewart and Eleanor Stewart worked at the site of Bellapais *Vounous*, on the northern Cypriot coast, where they collected evidence of charcoal, animal bones, and sampled soil for land snails (Stewart and Stewart 1950: 373-383). James Stewart's interpretations of the environment tend to focus on the deterministic implications of past places on the archaeology of the island: "the influence of the environment which must have led to such weird pot forms" (cited in Powell 2012: 25). His colleagues and biographers emphasize this sense of place and his attention to the affective dimensions of the landscape (Merrillees 1983; Powell 2012), particularly in his love of the northern Cypriot terrain and the near-distant mountains of Turkey (Stewart and Stewart 1950). Stewart's contributions to the study of cultural regionalism during

the early prehistory of the island, despite the limitations of the time, also remain profound. Importantly, Stewart based his archaeological work on what he considered the geographic importance of particular regions, such as the area of *Vounous*, which, because of its proximity to the Anatolian coast, attracted early inhabitants to the island (Merrillees 1983). In a departure from the hypothetical environmental histories put forward by Myres, however, the Stewarts began to analyze the physical residues of that environment as part of their methodology, although they do not explain their reasoning. I would argue that the combination of first-hand experience with the island's varied landscapes, as well as a move toward quantification, pushed James Stewart to go beyond geography toward the scientific study of environmental aspects of ancient life.

In addition to the Stewarts' (1950) work at *Vounous*, Dikaios' work at Khirokitia in 1934 investigated aspects of prehistoric subsistence through the recovery of animal bones, and Judith King's (1953) report constitutes the first publication of Neolithic faunal evidence from Cyprus. In 1937 Joan du Plat Taylor (1950: appendices 1 and 2), who had worked with Dikaios at the Cyprus Museum and Mortimer Wheeler (Hirschfeld 2007: 4), began her excavations at the Late Bronze Age site of Apliki *Karamallos*, in which she saved pieces of charcoal as well as burnt seeds and sent them to experts in departments of forestry and agriculture. She records that the roof timbers had burned, revealing the brush-wood covering of the mud-roof, making it possible to recover and identify the wood (du Plat Taylor 1950: 138). Her forethought to preserve bones and seeds for analysis has made it possible to study radiometrically these materials decades later (Manning and Kuniholm 2007; Kling and Muhly 2007: xii). Du Plat Taylor later sought the expertise of Hans Helbaek (1962), one of the pioneering paleoethnobotanists of the Near East and part of Robert Braidwood's seminal 1948 expedition to Jarmo (Wright 1971). Dikaios,

Stewart, and Du Plat Taylor all knew and worked with each other in the 1930s (Hirschfeld 2007), and it is conceivable that they collectively discussed the benefits of retrieving and studying organic and environmental remains in order to understand ancient daily life.

This re-orientation of archaeological practice to include non-human evidence certainly appeared at a much earlier point than would later occur in other regions. Specialists attached to a number of projects in the mid-20th c. began to identify increasingly varied materials (Bottema 1966), from the imprints of wheat in ceramic fragments (Hjelmqvist 1976) to sediment and microfaunal analysis (e.g. Wilkins 1953; Zeuner and Cornwall 1958). A growing interest in animal consumption and local diet began to emerge against the environmental determinism already established at the turn of the century (Helbaek 1966; see Bolger 1989). In addition, new attention to pre-industrial agropastoral practice was facilitated after the Second World War through particular colonial publications on modern land use, such as Demetris Christodoulou's work on rural practices (1959) and a government report on modern pasture systems (Jones *et al.* 1958). While Christodoulou's focus was on modern land use, and importantly the choices that future Cypriots of the mid-20th c. could take to ensure the environmental sustainability of the island in the face of rapid population growth,[103] he framed a discussion of soils around the island's long history of occupation and hesitantly questioned the axiom of its ancient fertility (1959: 41).[104] In addition, Christodoulou acknowledged the lack of scientific assessments on subjects such as soil erosion (1959: 41) and vegetation (1959: 45), the latter of which was still based on an initial turn-of-the-century report by Holmboe (1914). These reports functioned

[103] "Realising, as he did from daily first-hand contact, the vital necessity that the young people should know and understand the meaning and influence of their environment before they could take any effective part in shaping its future, he came to Britain to equip himself by reading for an Honours Degree in Geography of the University of London" (Christodoulou 1959: 1).

[104] "In antiquity Cyprus is reputed to have earned the name Makaria (Blessed) for the fertility of its soils. That reputation, deserved or undeserved, is still maintained."

similarly to the earlier geological reports used by Myres: they buttressed growing emphasis on culture history by packaging the island's landscapes into an accessible format and are still widely used – and revered – today by archaeologists to reference the island's land practices (e.g. Knapp 2013; Butzer and Harris 2007; see for example Iacovou 2013b: 20-21).

In 1955, Hector Catling helped to create the Cyprus Survey, a project of the Department of Antiquities that would build upon Gjerstad's earlier identification of settlements as well as record all sites that were in danger of destruction due to modern development (Hadjisavvas 2004; Cadogan 2004).[105] Catling had worked with du Plat Taylor at Myrtou-*Pigadhes* in 1951 and had learned from her the methods of surface survey (Cadogan 2004: 17; Hirschfeld 2007). The survey's methodology – breaking the archaeological tradition on the island of concentrating on cemeteries and sites (Merrillees 1973) – consisted of un-systematic forays into different regions, with the result that some areas were never visited, while others frequently required return visits. Sites of all periods were recorded, yet the prehistoric remains garnered more attention.[106] Catling would later note that a weakness of the Cyprus Survey was its lack of clear proposal for publishing its results, and that du Plat Taylor urged him to publish some of the data in various articles (Cadogan 2004: 22). In a recent history of the Cyprus Survey, Gerald Cadogan (2004: 22) described Catling's "deep sense of place" and "the impact of place upon the inhabitants of Cyprus." For Cadogan (2004: 22), the legacy of Catling resides "in documenting *the place* and looking at its interaction with Cypriots over centuries and millennia, in the now distant era before modernization reached Cyprus" (emphasis added). This rigid denotation of place – "new

[105] The accurate name for the Survey was the Archaeological Survey of Cyprus, and Catling was the one who proposed it to the Director of Antiquities and led it from 1955 to 1959 (quoted in Cadogan 2004: 17): "I dreamt this idea. Wouldn't it be wonderful to do this surveying comprehensively? Cyprus is a finite space. And I thought I knew how I would go about it – which I didn't."

[106] The lists became the prototype for the Sites and Monuments record of the Department of Antiquities, and included material from the earliest prehistory to 1700, excluding active churches.

evidence will be found, but the place is always there" (2004: 22) – intimates the profound influence that Catling's survey work has had on later generations.

With his focus firmly set on place (*topos*), Catling (1962) defined topography as the placement and location of sites, further emphasizing the production of maps of sites with increasing detail. This concept of topography relies more on the absolute spatial distribution and cataloguing of sites in the mold of Gjerstad than on the scientific study of environmental features. Catling's (1962) work also hints at the same undercurrent of environmental forcing as Myres, in that he believed the topographical layout of the island affected the location of sites. What Catling contributed, however, was attention to the experiences of field survey that shape interpretations of past human-environment relationships: since Cyprus had no distinguishing mounds, as in the Near East, with which to identify sites, he argued that Cyprus' prehistoric populations were "intermittently restless," picking up and moving camp to follow water sources. Although Catling's (1962) seminal publication on Bronze Age settlement patterns maps archaeological material without close correspondence to obvious geographic features, as Gjerstad did, his intuitive marking of relic landscapes was greatly influential in later discussions of site distributions.

Following the independence of the island from British rule in 1960, foreign attention to Cyprus dramatically increased through the work of a new Director of the Department of Antiquities, Vassos Karageorghis (Knapp 2013: 22-23; Ioannides 1992), who invited foreign missions to do fieldwork. Large-scale excavations began at some of the major sites of the island, including Salamis, which would result in the spectacular finds from the 8th and 7th c. BCE tombs. In addition, their stratigraphic records provided more robust data with which to refine local chronologies and typologies of ceramics and other objects. For the most part, the publications of

these excavations used appendices to discuss material such as bones and charcoal (e.g. Renfrew 1970), and did not include them in the larger discussions of the sites unless in relation to local diet. This postscription of environmental remains of Iron Age sites, in particular, arguably reinforced the assumption that the study of the period focused on ceramics, sculpture, and architecture, and not on environments.

The colonial and post-independence efforts to make legible both modern and ancient landscapes created an early awareness of the importance of surface survey on Cyprus compared to other countries around the Mediterranean (Iacovou 2004a). The pace of construction in these years of the mid-20th century induced surface explorations[107], as well as more concerning political sweeps of the island for militants (Cadogan 2004: 18), which led to further discoveries and additions to distribution maps. In the years following the independence of Cyprus from British rule, however, and as tensions on the island mounted, the Cyprus Survey became distracted with rescue efforts. While topographical studies continued, particularly through the work of the Cypriot archaeologist Kyriakos Nicolaou (1976), the extensive and non-systematic approach to survey contributed to a regionally-impartial visualization of past environments (Hadjisavvas 2004).[108]

The rise of survey and landscape archaeology, 1960 to the present

The 1970s on Cyprus witnessed a significant change, as new scientific surveys, directed by British, French, Australian, and North American scholars of the emerging New Archaeology, introduced the field participation of geologists, botanists, and other specialists to study regional

[107] For example, survey in the Akamas in 1953-1954 in advance of building a gunnery, or in 1957 at Cape Greco before the construction of a military installation, both cited in Cadogan 2004.
[108] Nicolaou was also a pupil of du Plat Taylor (Cadogan 2004: 18).

environments (Knapp 1994: 399).[109] While culture-historical analyses continued in major excavations, particularly those directed by classically-trained archaeologists, projects such as Edgar Peltenburg's (1983) research at Ayios Epiktetos *Vrysi*, Alain Le Brun's (1984) re-investigations of Khirokitia, and David Frankel's (1974) ecological perspectives on inter-site communication created a space out of which new conversation on human-environment dynamics could take shape. For these projects, site distributions remained important but were now situated against the influential vagaries of shifting local environments, with their own complicated histories. Claudio Vita-Finzi's (1969) seminal assessment of major Holocene alluvial phases across the Mediterranean spurred local challenges to his claims and questioned the possibilities of anthropogenic environmental change (e.g. Gomez 1987; Koucky and Bullard 1974; see Noller 2010: 1-7; Deckers 2002).

Kathleen Deckers (2002) has recently outlined the responses on Cyprus to Vita-Finzi's (1969) study, which argued that climate was a determining factor in the creation of two time-confined sedimentation phases during the Holocene, named the Older (last glacial period) and Younger Fills (Roman to Medieval periods; Bintliff 2002).[110] Criticized for generalizing the variegated environments of the Mediterranean throughout his study, Vita-Finzi nevertheless dramatically advanced archaeological conceptions of regional history and instigated research on local alluviation in places like the Peloponnese of Greece (Jameson *et al.* 1994) to challenge his assumptions (Bintliff 2002: 418). In their important survey work in the Argolid, Van Andel and

[109] A fuller discussion of the rise of archaeological survey theories and methods takes place in the next chapter.
[110] Specifically, Vita-Finzi argued that the Older Fill represented colluviation during the last glacial period, with small-scale erosion in the mid-Holocene along coasts. The Younger Fill represents renewed aggradation throughout Mediterranean river systems, with downcutting evident through the second fill series via recent alluviation. He attributed these phases with wetter or cooler climate, such as the Little Ice Age (16th to 18th c. CE). In short, landscape modification occurred in two major episodes, exemplifying the theory of 'punctuated equilibrium' rather than the notion of a uniformitarian process of prolonged change.

his team of geoarchaeologists (Jameson *et al*. 1994) argued that anthropogenic activity, and not climatic deterioriation, had caused several episodes of Holocene erosion, by combining geoarchaeological and pedestrian survey evidence for human settlement together (see discussion in Bintliff 2002).[111] On Cyprus, the important work of Basil Gomez (1987) in the Vasilikos Valley, for example, revealed that the region's Older Fill extended much earlier than Vita-Finzi had claimed, dating to the Neolithic period, and consisted of two distinct phases, not just one. Deckers (2002) also notes that although these analyses of local geomorphological records characterized the early interdisciplinary efforts in the 1970s, they did not continue into the 1980s.

1974 marked a devastating turning point that distorted the screen through which archaeologists evaluated ancient landscapes (Knapp and Antoniadou 1998). Survey and excavation in the north of the island was abruptly halted, and the Cyprus Survey, which had experienced a brief resurgence in 1973 under the direction of Sophocles Hadjisavvas, finally ended (Hadjisavvas 2004). While to that point the prehistoric evidence from the northern part of Cyprus had driven the discourse on cultural regionalism, especially via James Stewart's work, the fissured political landscape has subsequent research to focus on the south, west, and central parts of the island, both restoring the imbalance as well as contributing to the biased perspectives of future work.

From such a context of forced scholarly displacement grew a new self-reflection on the field's investigation of regional interaction. Nicholas Stanley Price (1979), one of the first to call direct attention to the lack of systematic evidence of paleoenvironments, argued for more controlled data and methods in recovering new types of material, including radiometric dating. He used the increasingly updated geological and scientific understandings of the island's

[111] I consider the discourse on climate and anthropogenic-caused environmental change in **chapter 4**.

physical variation as the basis for mapping prehistoric regions, as well as questioned climate change as a factor in human mobility, considering the possibility that fluctuating water availability forced prehistoric populations to relocate (Stanley Price 1979: 5). Stanley Price (1979: 5) defined regionalism for the first time in the language of adaptation to environments, a move that partly echoed the geographical focus of Myres but now employed the vocabulary of cultural ecology and systems theory. His work remains widely cited to this day (e.g. Knapp 1994, 2013).

Intensive surveys in the southern half of the island became a dominant mode of analysis throughout the 1980s and 1990s, such as the Vasilikos Valley Project (Todd *VVP* 9; Gomez 1987; Wagstaff 1978; Wagstaff *et al.* 2004), which incorporated histories of alluviation, site catchment analyses, and modern ethnographies of land use (see also e.g. Sørenson and Rupp 1993).[112] The gradual incorporation of remote sensing in field methodology, such as aerial photography, magnetometry, and soil resistivity, brought new tools for exploring landscape composition (e.g. Fischer *et al.* 1980; Todd *VVP* 9). The aerial photographs of the island during the colonial period, in particular, have become an invaluable asset for studies of recent landscape change. More recently, intensive surveys (e.g. SCSP, Given and Knapp 2003; MVASP, Manning *et al.* 1994)[113] have attended to the dynamics of land use practices through increasingly sophisticated techniques involving the in-field expertise of geomorphologists, physicists, and archaeometallurgists. The Sydney Cyprus Survey Project (Given and Knapp 2003) and the Troodos Archaeological and Environmental Survey Project (Given *et al.* 2002), for example,

[112] The Vasilikos Valley Project (VVP) is discussed in much more detail in Chapter 4, in the context of the Vasilikos and Maroni Valleys. Throughout this dissertation, the major publications of the survey will be cited as Todd *VVP* 9 (2004; the Field Survey) and Todd *VVP* 12 (2013).

[113] To name only two; other examples include the Canadian Palaipaphos Survey Project, the work of Peltenburg in the Paphos district, the Athienou Archaeological Project, and the recent Kouris Valley survey work. Not mentioned here are also the underwater surveys, such as the work off the coast of Cape Kiti.

integrated detailed investigations of soils, erosion, and archaeometallurgy, re-orienting discussions of ancient copper mining and refining in various periods of antiquity and their relationships with changing settlement dynamics. This interdisciplinarity has helped to distance the gap between archaeologists and specialists that characterized earlier fieldwork (e.g. Kingsnorth 1993), as well as to renew interest in non-human landscape change after the initial challenges to Vita-Finzi's paradigm. These and other projects (e.g. Yerkes 2000) indeed consider the diachronic practices that have shaped local landscapes as active in the development of past and present communities. In addition, the collaborative interest in local environments has directly led to new studies on Quaternary geology and geomorphology (e.g. Gifford 1978, 1985; Gomez and Pease 1992), fields which had experienced their own ebbs and flows and had largely focused on ophiolite geology and oceanic uplift since the mid-20th century (Noller 2010: 1-7).

The excavations of the early prehistoric site of Akrotiri *Aetokremnos* sparked an additional pivot in questions of Cyprus' environmental past (Simmons 1999). The recovery of hundreds of fossilized bones of pygmy hippos and other large fauna at *Aetokremnos* revealed the potential human impacts on local ecology and fluctuating animal and plant populations, an issue that had received little attention (Colledge 1989; Kingsnorth 1993) and which has progressed to elucidate the initial transportation of fauna to the island in the Late Epipaleolithic and Neolithic. The site's excavation catalyzed a controversial debate on the recursive interaction between human groups and environmental processes, which moved beyond the previous assumptions of environmental constraints on human activity to consider anthropogenic change in local populations of flora and fauna (see for example Ammerman and Noller 2005 and response by Simmons and Mandel 2007; BASOR 1993 issue on complexity on Cyprus).

The theoretical frameworks with which archaeologists on Cyprus approach past environments have also diversified over the last decades. Certainly much of the archaeological work produced on the island remains focused on typologies and descriptions of objects within their prescribed culture areas (Knapp 2013: 29). A significant portion of this work derives from research and salvage excavations, which necessarily focus on the cataloguing and description of sites, given the lack of funding for the Department of Antiquities. Increasingly, however, post-processual thought has induced some archaeologists (Knapp 2008, 2013; Given and Knapp 2003; Ashmore and Knapp 1999), influenced by the "spatial turn" of the 1980s and the embrace of landscape theory, to reconsider the scientific survey and excavation work of the 1970s and 1980s. Several scholars have re-examined ancient Cypriot landscapes as socially constructed assemblages, investigating places of memory and ritual, industry, and political boundaries (see for example Given and Knapp 2003; Papantoniou 2012; Kassianidou 1994; Manning 1998; Fourrier 2002; Iacovou 2008c). [114]

On the other hand, Steven Held (n.d.; 1993) became a proponent of an ecological perspective on island biogeography and early prehistory in the 1990s, and used the biological language of ecological adaptation to frame research on the exploitation of ancient resources and the effects of environments on prehistoric human populations. In his exhaustive review of environmental data from geology, coastal geology, climate, etc., Held (n.d.; 1990; 1993) aimed to understand Cyprus' biogeography during its earliest prehistory by focusing on its insularity. This work is a monumental effort that has received less attention in the broader community, perhaps because of its unpublished status, as well as Held's overt use of processual, ecological theory and his treatment of the island as a laboratory. Alice Kingsnorth (1993: 116), in a

[114] Chapter 1 goes into more detail about studies in landscapes on Cyprus, and particularly those focused on the first millennium BCE.

contemporary review of approaches to Cyprus' ancient complexity, sums up the tension between these views:

> To suggest that we need to consider the environmental setting of prehistoric Cypriot communities interactively is surely unimpeachable. To suggest that we need to choose between sociopolitical and ecological explanations of societal change and adaptation is to erect a false and unhelpful dichotomy.

Kingsnorth's sentiment responds to a larger division within archaeological discourse between the pursuit and incorporation of scientific analyses, and the more traditional focuses on social, political, and cultural processes that structure human life (see Pollard and Bray 2004) – a dichotomy that, to a large degree, still characterizes much work on the island. It is only within the last few decades that research has turned to the recursivity and dynamism of past human-environment relationships.

Recently, an unprecedented use of digital techniques for visualizing and studying terrain through GIS and remote sensing has revolutionized our methodologies in the analysis and interpretation of environments (e.g. Agapiou and Hadjimitsis 2011; Iacovou 2008c; Given and Knapp 2003). With these innovative methods and renewed interest in alluvial histories (Devillers 2009; Deckers 2002, 2006; Gomez 2003), coastal change (Sourisseau *et al.* 2003; Morhange 2000; Zomeni 2012; Devillers *et al.* 2015), and erosion (Wells 2001) from archaeologically-oriented scientists, we have begun documenting important shifts in the environmental record. New data from studies in dendrochronology have re-oriented long-standing chronologies and assumptions (see for example Manning 2013c), and research on ancient metallurgical practices and industrial landscapes by Kassianidou (e.g. 2004) has re-considered the spatial implications of copper production and trade, on and beyond the island. Current work on charcoal remains from slag heaps, in particular, can push our understandings

beyond the site to the landscape-management strategies that supplied the copper industry.[115] Indeed, much of the archaeometric work being produced on Cyprus at the current moment is related to composition analysis of local copper sources, bronze and other metal artifacts, and site microstratigraphies in order to understand the extraction and movement of copper on the island (Frankel and Webb 2012; Kassianidou 2013).

Discussion

What emerge from the preceding review are several themes that can start a discussion of past trends and future directions. The trajectory of thought on Cyprus' ancient environments has assumed various guises, most of which gravitate toward the understanding of site distributions and topographical conditions. The antiquarian and early 20th c. interest in *where* sites were in relation to physiographic features became the major lens through which archaeologists have situated ancient life on Cyprus. In this sense, the geographical stance of Myres and the topographical work of Gjerstad and Catling set the stage for discussions that have aimed at the connections between prominent surface features and archaeological objects. Yet their conclusions rarely stretched beyond the surface to consider the complex and changing compositions of ancient environments. With the rise of interdisciplinary survey, most significantly in the 1980s and 1990s, these site-surface relationships expanded to include human-environment interaction, anthropogenic environmental change, and the vagaries of local contexts that had direct implications in the life histories of sites. While many projects remain site-based,

[115] The work of Maria Socratous, on the charcoal from SCSP, TAESP, and the slag heaps at Kalavasos, will hopefully elucidate practices such as firewood selection (Kassianidou, pers. comm.), with potential for closer dating of these practices via dendrochronology and radiocarbon dating (e.g. Manning 2013d); her work is still unpublished. I discuss specific avenues for charcoal analysis more fully in the next chapter.

increasing attention to non-site dynamics in the last few decades has complicated our notions of archaeological scale beyond the site. Additionally, such a review exposes the work of certain scholars – such as du Plat Taylor or Stanley Price – who directly shaped research on environments, as well as the broader currents in archaeological theory and practice which have guided thought on the island's environments. The fitful path of Cyprus' geological and environmental research (Noller 2010) as well as the dramatic political and social changes from empire through independence and invasion equally helps to elucidate these peaks of archaeological interest in environments, as new information became available or fieldwork responded to shifts in authority.

There is a need for more data on past and present environments on the island. In addition to more intensive survey data as the pace of urban and non-urban construction continues to accelerate, paleoenvironmental data becomes paramount, and particularly those with refined spatial resolution that can bridge the current gap between the macro-scales of insular geology and the micro-scales of site-based, excavated spaces. Information on the island's soils, and their pedogenetic histories, is still relatively absent (J. Noller pers. comm.), yet crucial to both the archaeological understanding of site formation processes as well as the elucidation of ancient landscape practices. More data could dramatically enhance existing chronologies based on radiocarbon isotope analysis (see e.g. Manning 2013b). Isotope studies in general are relatively lacking on the island, although new projects hope to change that.[116]

To look at the minimal amount of attention to environments another way, Cyprus has a limited presence in journals and publications that combine archaeological and scientific evidence of ancient human-environment relationships or regional Mediterranean paleoenvironmental

[116] Leon, n.d. See the discussion in the next chapter on isotopic studies, particularly related to climate.

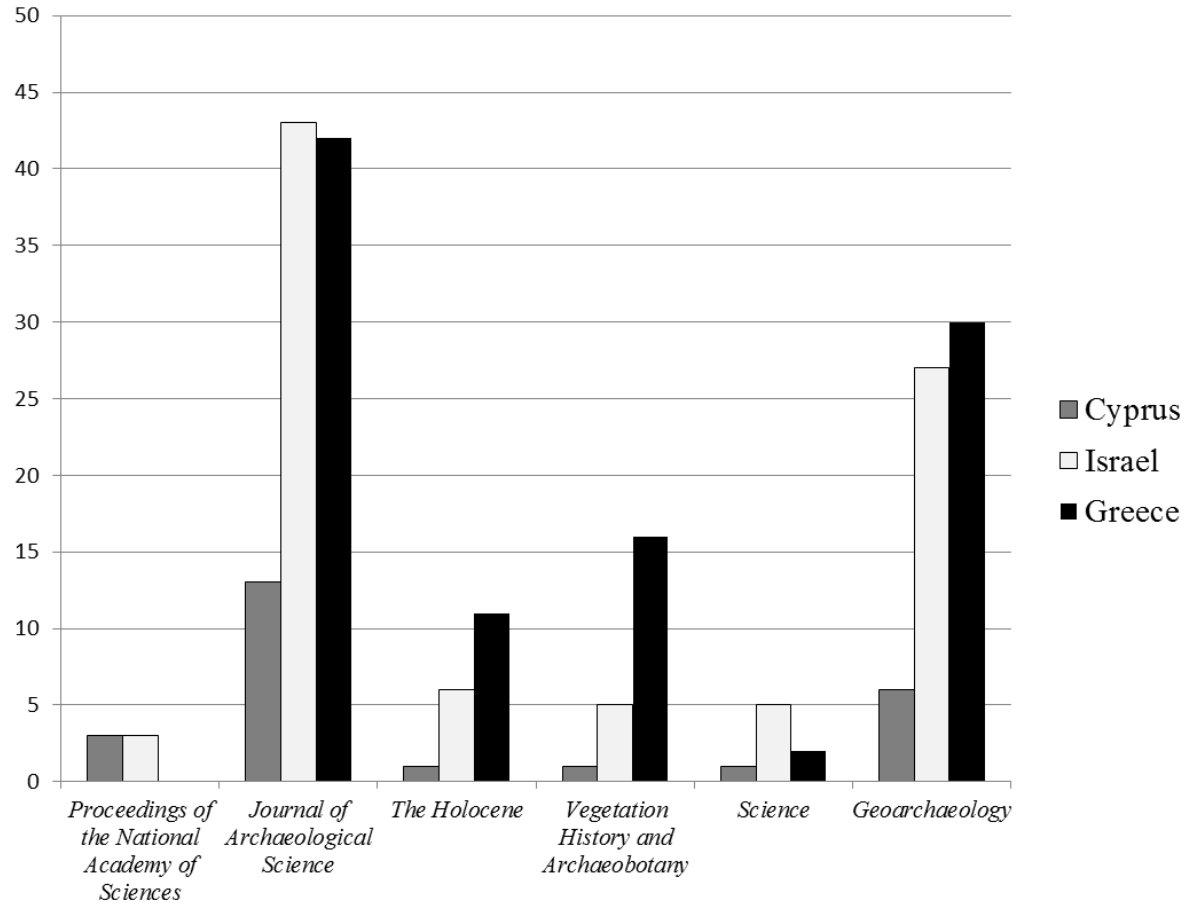
change. Figure 1 shows the number of published articles concerning material or data from Cyprus, in a selection of journals aimed at the use of archaeological science, compared to numbers from Israel and Greece.[117] This graph certainly does not take into account the complicated histories of the latter nations' work on environments nor their unique apparatuses of research networks or demographics;[118] but, comparatively, Cyprus trails behind in projects that focus on the interfaces of environmental and archaeological evidence. The majority of publications related to Cyprus concern provenience-analysis in metallurgical materials (i.e. copper) and few deal directly with questions of environmental intersections with human activity, as opposed to other regions where isotopic studies and absolute chronologies have helped to elucidate archaeological contexts, such as terrace systems (see for example Avni *et al.* 2012).[119] Future work could open a space for collaborative projects that contribute to our understanding of these dynamic regional environments, and the publication of more data from Cyprus will significantly help structure our understandings of ancient Mediterranean climate and environmental change.

[117] The data used to create this graph were collected by reviewing journal databases and finding articles that referenced ancient environmental evidence. The survey was judgmental, in that I only considered articles focused on ancient environmental evidence and did not include those that simply mentioned 'Cyprus' or 'Israel' only once or referred to it in bibliographies. The aim was to find articles that discussed as primary evidence data coming from each of these countries.

[118] For geoarchaeological work and landscape research in Greece see for example Bintliff 2002.

[119] A recent issue of the *Journal of Arid Environments* (Vol. 86, 2012) on ancient agriculture in the Middle East is a good example: of articles on ancient agricultural and irrigation systems, combining archaeological and scientific data, none focus on Cyprus. As a region with equally unstable rainfall and dynamic land histories, Cyprus' material could help to elucidate the comparative study of ancient agriculture and water-management systems beyond the traditional sites of focus (i.e. Nabataea).

Chart 3.1. Selection of journals with number of articles mentioning Cyprus and environment. Data drawn from on-line searches.



Previous work has more closely investigated the botanical and faunal residues of ancient consumption practices, husbandry, and cultivation on the island (e.g. Hansen 1991; Colledge and Connelly 2007), while fewer projects have focused on the technologies that furnished past settlements – prehistoric and later - with the capacity to sustain terraced or irrigated agriculture and pasturage in fluctuating environmental conditions. Compared to other areas of the Mediterranean, ancient land practices beyond the earliest Neolithic are relatively understudied on Cyprus (but see for example Fall *et al.* 2012 and Wagstaff 1992 on terrace systems), owing in part to the authoritative positions drawn from previous work (especially e.g. Christodoulou 1959; Stanley Price 1979). It is perhaps not surprising that the artifacts of environmental processes –

cooking residues in the forms of seeds and charcoal, bones, and soil samples – have been studied the most, since these were the most visible aspects of ancient environments, in addition to the mapped topographies, that many archaeologists discovered through the primary field methods of excavation. While the island did have a unique geological structure that attracted foreign specialists, the study of the island's geology and geomorphology did not really take off until the 1950s, after the basic culture-history traditions of archaeology had been established on the island (Noller 2010). It was not until the 1980s and 1990s, in fact, that detailed work on alluvial deposits, coastal change, and quaternary dynamics took off (i.e. Poole 1992). The intersections of geological research into the deep history of the island's environments and archaeological fieldwork thus seem to correspond to individuals such as Stanley Price and Held with the capacity to bridge disciplinary gaps, and not a more pervasive or consistent sharing of ideas. In addition, a basic lack in topographical maps for large portions of the island, and up to date high-resolution geological maps, were simply not available for much of the 20th c., prohibiting more robust analyses of settlement and land use histories (I. Todd pers. comm.).

More broadly, there has been less attention to the larger-scale patterns of Mediterranean climate and environment that intermingled with developing human societies. Scholars have typically generalized climate to short descriptions of aridity and the consequences of the lack of water in the island's past (e.g. Dikaios 1936; Catling 1962; Iacovou 2013b: 19). For example, in a recent analysis of terrace walls in the area of Politiko *Troullia*, Patricia Fall *et al.* (2012) discuss the changes in construction and length of walls between the Late Bronze Age and later first-millennium periods as indices of different agricultural practices, raising questions about the possible climate-related changes that may have affected soil erosion or water retention. Moving beyond either a non-environmental history or environmental determinism requires, however, an

approach concerned with investigating the recursive dynamics between humans and their surroundings. In an intensely arid to semiarid country like Cyprus, with increasing concerns over water conservation and strategies of sustainability (Griggs *et al.* 2014; Lelieveld *et al.* 2012), opportunities arise to collect high-resolution data that would lengthen current climate models as well as help understand how ancient societies engineered their practices in relation to environmental vagaries, such as unreliable rainfall.

In addition, while scholars have long sought out and studied the artifacts that link ancient Cyprus to the wider Mediterranean ecumene and have emphasized its insular narrative as a "crossroads" of culture (see e.g. Hadjisavvas 2010; Cadogan *et al.* 2012), the comparison of Cyprus' environmental history with those of its neighbors beyond linkages in lists of recovered seeds or bones needs more attention (but see e.g. Wasse 2007). Much of this imbalance must result from the relatively late appearance in the 1960s and 1970s of Cypriot studies in the larger academy of Mediterranean scholars, as the island has registered only intermittently in paleoenvironmental literature, and those working on the island formed a dynamic but small core of mostly Aegean or Near Eastern trained archaeologists. Yet a concerted effort to elucidate the island's environmental vagaries, through interdisciplinary efforts that involve archaeologists and paleoenvironmental specialists, can attend to these trans-Mediterranean environmental relationships.[120]

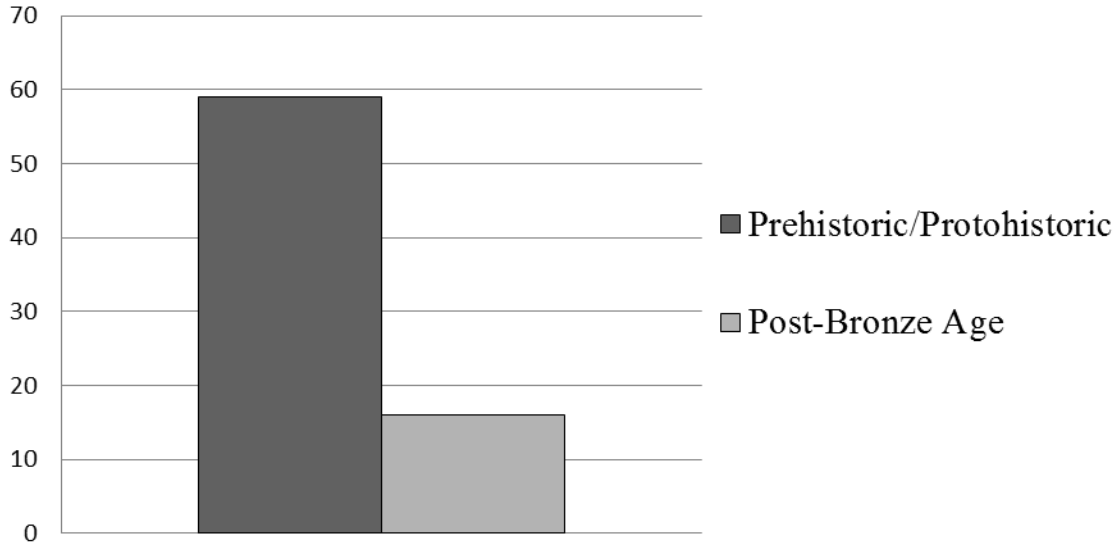
Also apparent in this review is the rift between prehistoric and protohistoric studies, on the one hand, and post-Bronze Age, historical investigations on the other, a trend that is certainly not unique to Cyprus. Figure 2 exposes this imbalance by showing the numbers of published studies from Cypriot field projects that examined environmental evidence, adapted and updated

[120] I discuss the implications of my own charcoal analysis for these Mediterranean climate records in the next chapter.

from a recent history of geoarchaeology by Jay Noller (2010: Section 9).[121] This dramatic ratio, which includes recent projects (i.e. Geronisos), suggests that this trend is not just a relic of earlier archaeological assumptions. The belief that different research questions drive the archaeology of prehistoric periods on the island and later historic ones has helped to graft the study of environments to the study of prehistory (e.g. Held n.d.; Stanley Price 1979; Swiny 1981; Pilides 2008), but it also belies an arbitrary dichotomy that has often divorced the sites of later periods from their equally dynamic surroundings (cf. Deckers 2006; Morhange 2000; Iacovou 2013b: 18-19). As culture-historical frameworks developed on the island, and as major publications on ancient topography dealt only with prehistoric periods (i.e. Gjerstad 1926; Catling 1962), the study of later periods ultimately adopted an identity of object-oriented analyses, and particularly those that research the connections between Cyprus and the societies of the Aegean and Near East. The environmental evidence that was collected from Iron Age or later sites, such as Karageorghis' work at Salamis (1973; Renfrew 1970; Hjelmqvist 1970), belonged to appendices and short discussions of local diet; in short, typologies of artifacts. Such a preoccupation with topography, in addition, has skewed the discussions of historic periods away from collecting evidence of off-site environments because the topography of Iron Age and later sites, in terms of their location, is already supported by ancient textual evidence. Iacovou (2013b: 18-23) has recently challenged these biases and has called for the study of "the environmental constraints [that] were (and are) the unchangeable factors that have shaped social constraints and mentalities" of the 1st millennium BCE.

[121] Of course there are some projects with diachronic focus, such as Idalion (1974), which collected evidence for different periods; this graph focuses instead on the major projects of the 1st millennia BCE-CE (such as Kition, Tamassos, Geronisos, etc.). Also, the research behind this graph does not include surface survey, as these are more diachronic projects and most now take into account environmental evidence (although **chapter 4** discusses survey material of the Iron Age).

Chart 3.2. Number of excavations with published environmental evidence, separated into prehistory (up to 1200 BCE and post-Bronze Age (after 1200 BCE). Data adapted from Noller 2010.



Equally important in the shelving of first-millennium BCE landscapes outside discussions of paleoenvironment are the sketches of catastrophes and otherwise unknown environmental disruptions that characterize some discussions of the end of the Late Bronze Age. An important example of this stems from Catling's (1962: 146) seminal survey work, in which he briefly discusses the Iron Age landscape. His description is worth quoting in full:

> The onset of the Iron Age surely marks the nadir in the island's fortunes. By this date the centers of settlement had dwindled to a handful of sites, holders of promise for the future, but temporarily only a frail bastion of desolation. At Lapithos and Karavas on the north coast, Larnaka, Amathus, Episkopi and Kouklia on the south coast, Polis in the far west, at Dhali in the center of the island, *survivors or newcomers ushered in the new period against what must have been a background of desolation*. The scale of the calamity I can only compare, so far as Cyprus is concerned, to the wholesale abandonment of towns, villages, and farms which took place during the 8th century AD, a calamity which is commonly attributed – wrongly, I believe – to the depredations of the Arabs. On that occasion, though the Arabs may have contributed to the wretchedness of the times, there is evidence to suggest that pestilence was largely responsible for the disruption. I propose that, in the last years of the Bronze Age, Cyprus was inflicted with *some such natural disaster* in addition to receiving the attentions of the marauding wanderers of east and west, themselves the victims of even more terrible events in the homelands from which they were fugitive. *It is, indeed, in just such times as these that disease and pestilence are most readily engendered, most readily laid upon peoples least prepared by nature to resist them*. (my emphasis added)

Catling's portrayal of a desperate, almost post-apocalyptic terrain hinges on "some such natural disaster," and concludes by presuming that the post-Bronze Age population was "least prepared by nature" to sustain itself. Implicit in this description is the idea that with the collapse of Late Bronze Age systems, Cyprus lost all order and all knowledge of the basic practices which had supported itself, although Catling does not enumerate or describe them. New work on the dramatic environmental changes of the last few millennia suggests that Cyprus' more recent human-environment relationships were just as dynamic as those of earlier periods (see for example Schilman *et al.* 2001; Devillers 2009; Manning 2013a and refs). These mutable environments and their interconnections with changing 1st-millennium political mechanisms are the focus of the next chapter.

Perhaps, in conclusion, one of the more understated yet forceful concepts of past environments in the archaeology of Cyprus provides an encapsulation of these themes: its insularity. Implicit and sometimes explicit (e.g. Held 1993) affirmations of the island's uniqueness and Mediterranean sea-boundaries have long structured explanations and arguments about its human development. Arthur Evans (1900: 201), a colleague of Myres at Oxford, articulated this island-driven narrative early in the history of archaeology: "Cyprus is Cyprus, and the geographical affinities of the island naturally make themselves felt." This always-present geographical underbelly of Cypriot archaeology shores up the focus on regionalism and site location, analyzed via the tools of topography and surface exploration, as well as a more enduring framework of "others" influencing, colonizing, or interacting with the island (Knapp 2013). While few have explicitly argued for environmental determinism, the tenor of archaeology on the island has been one of beneficial coastal ports, imposing mountains, and critical copper resources; these physiographic features have dominated certain discussions and

lines of inquiry, while others have received less attention. Yet within this broader web of topographies and increasingly detailed surveys resides a complicated and oblique history of attention to and interpretations of the changing environments of the island, one that emphasizes the innovations in the archaeology of Cyprus that anticipated their developments in other regions. Despite the pessimistic overtones concerning the island's paleoenvironmental records, which nevertheless are some of the most current and archaeologically-integrated for the region, Cyprus's archaeological discourse both looks back to unique traditions of environmental work as well as offers up space for future research.

Chapter 3.1

The Vasilikos and Maroni valleys: region, environment, and history of archaeological research

Defining the region of focus

As David Frankel (2009: 15) has cogently written, Cypriot archaeology possesses a range of definitions and conceptual frameworks for "regionalism." Many of these understandings retain their roots in the early 20th c. production of culture areas across the island (Bolger 1989; see **chapter 3**), and of established variations in ceramic traditions (Manning 2001: 80). The mixing of micro-environmental contexts on the island has further fuelled this concern for regions; as Lord H.H. Kitchener (cited in Shirley 2001: 57) opined in 1879, during his trigonometric survey, "Cyprus is an island of sudden changes. Both climate and landscape are subject to rapid variations" (see also Christodoulou 1959: 195). Yet the apparent suddenness observed between the igneous stretches of the Troodos mountains and the coastal plain does not necessarily dictate the formation of regions in the past (Frankel 2009: 16-17). It is important to remember that landscapes are constructs, both in the emic sense of previous iterations of experience, perception and practice, and in the etic sense, built through archaeological examination and codification. More critical here (and argued in **chapter 4**) is the acknowledgement that landscapes are not fixed nor are they immutable (cf. Iacovou 2013b). What was potentially a region of intensified social interaction in one period might have dissolved in another period, and the resources available may have changed over time. These manifestations of region – geographical, cultural, political – are discussed throughout this thesis in relation to the spaces and places chosen and engineered by 1st millennium BCE populations in the Vasilikos and Maroni valleys.

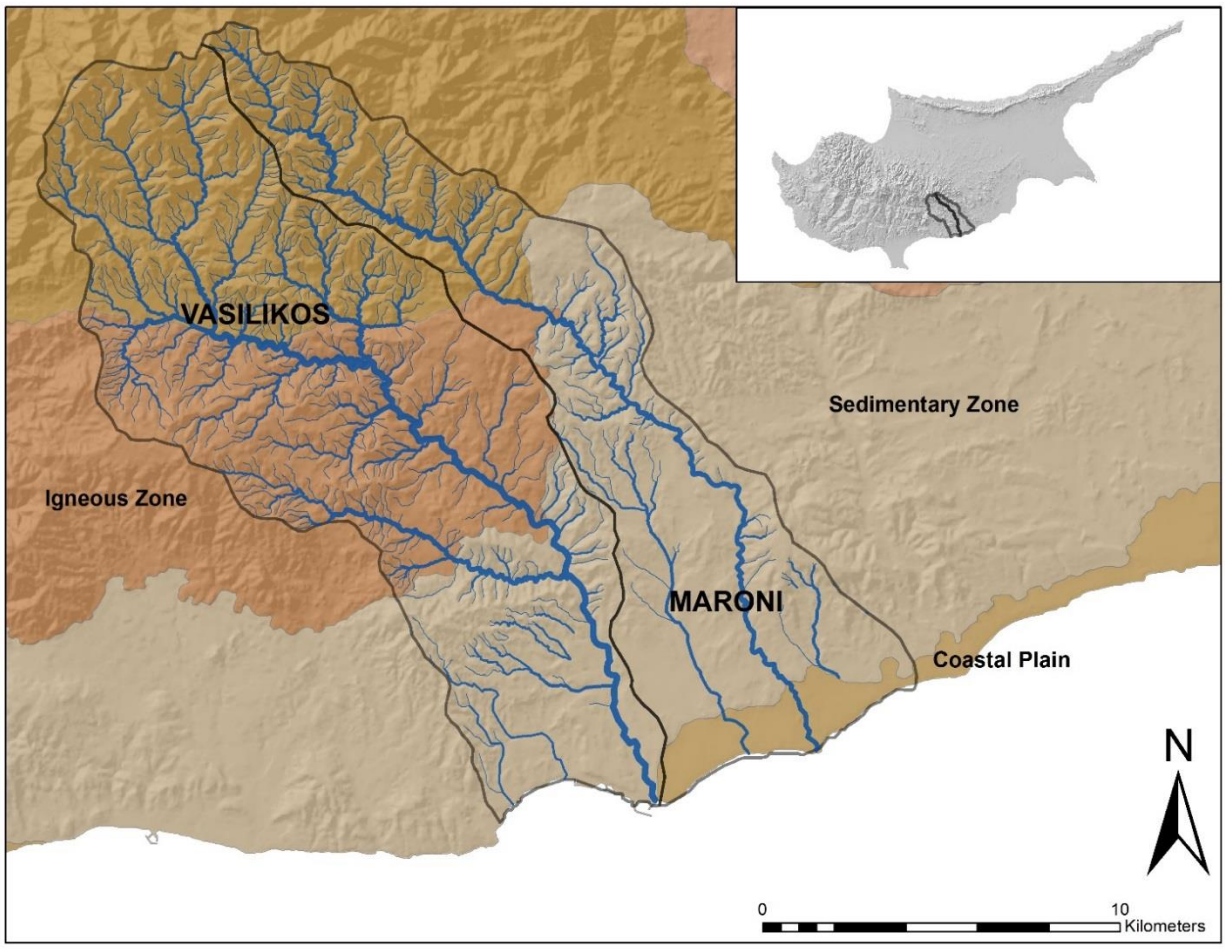


Fig. 3.1.1. South-central Cyprus, showing the Vasilikos and Maroni river valleys. All maps in this chapter created in ArcGIS 10.0 using data provided by the Geological Survey Department of Cyprus.

In archaeological literature of the prehistoric period, the Vasilikos and Maroni river valleys are commonly grouped within a larger unit of south-central Cyprus, which stretches from Kition in the east to Limassol in the south (e.g. Todd *VVP* 12: 131; Fig. 1). The two major Late Bronze Age urban centers of Maroni *Vournes* and Kalavasos *Ayios Dhimitrios* are indeed only 4 km apart from one another, indicating at least a close relationship in the 2nd millennium BCE (e.g. South 2002, 1995). Modern accounts of Cypriot geography define the region as an area of mostly carob and citrus cultivation and small, traditional villages (Christodoulou 1959; Pantazis 1967). As discussed in more detail in **chapter 5**, the study area of this dissertation was delimited

by two previous surveys, the Vasilikos Valley Project (VVP, Todd *VVP* 9 and 12) and the Maroni Valley Archaeological Survey Project (MVASP, Manning *et al.* 1994) in the southern extents of the Vasilikos and Maroni Rivers, respectively, due to the longitudinal nature of this research project (e.g. Keller and Rupp 1983c: 20-25; Cherry 1983: 386). Thus the survey area is not directly associated with the edges of the two watersheds, but rather with the southern valleys of the Vasilikos and Ayiou Mina rivers (Fig. 2).[122] The arbitrary cut-offs of these two surveys have left gaps in the coverage of the region, particularly in the area of the Tochni municipality which sits between the two river systems and the upper reaches of the Maroni valley. Nevertheless, the combined area (approx. 165 sq. km.) and the number of early 1st millennium BCE sites previously identified (approx. 90) provides a regional dataset of 0.55 sites per 1 sq. km, comparable to intensive surveys in the Mediterranean since 1970 (Wilkinson *et al.* 2004: 190, fig. 1).[123]

The designation of these two river valleys as one region is in part subjective, and becomes an important question for investigating local landscape practices in relation to the larger inter-regional patterns on the island and the potential sociopolitical boundaries of the 1st millennium BCE polities. One aim of the following analysis is to examine any differences between the Vasilikos and Maroni valleys in relation to material and settlement patterns, where possible. This attention to small-scale, local contexts follows the recent trend noted by Nicola Terrenato (2004: 47) in survey methodology, and puts the minor variations to work in understanding the historical question of 8th c. BCE landscape development (e.g. Alcock and Cherry 2004b: 7). It tries to avoid, however, the "myopia" of Mediterranean surveys that focus

[122] The Vasilikos and Maroni watersheds extend further to the west and to the east, and are part of a larger hydrological unit that includes the Pentaschoinos and Xeropotamos rivers to the east.
[123] See discussion in **chapter 5** for calibration of this number via site recovery estimates.

at such a fine scale (<100 sq. km.) that they miss wider patterns and large-scale phenomena (Blanton 2001). Indeed in **chapter 6**, these questions of regional order, and the experiences of territorial boundaries, are framed against the expanse of the island and then the eastern Mediterranean more broadly (and more coarsely) through an encompassing comparative survey analysis.

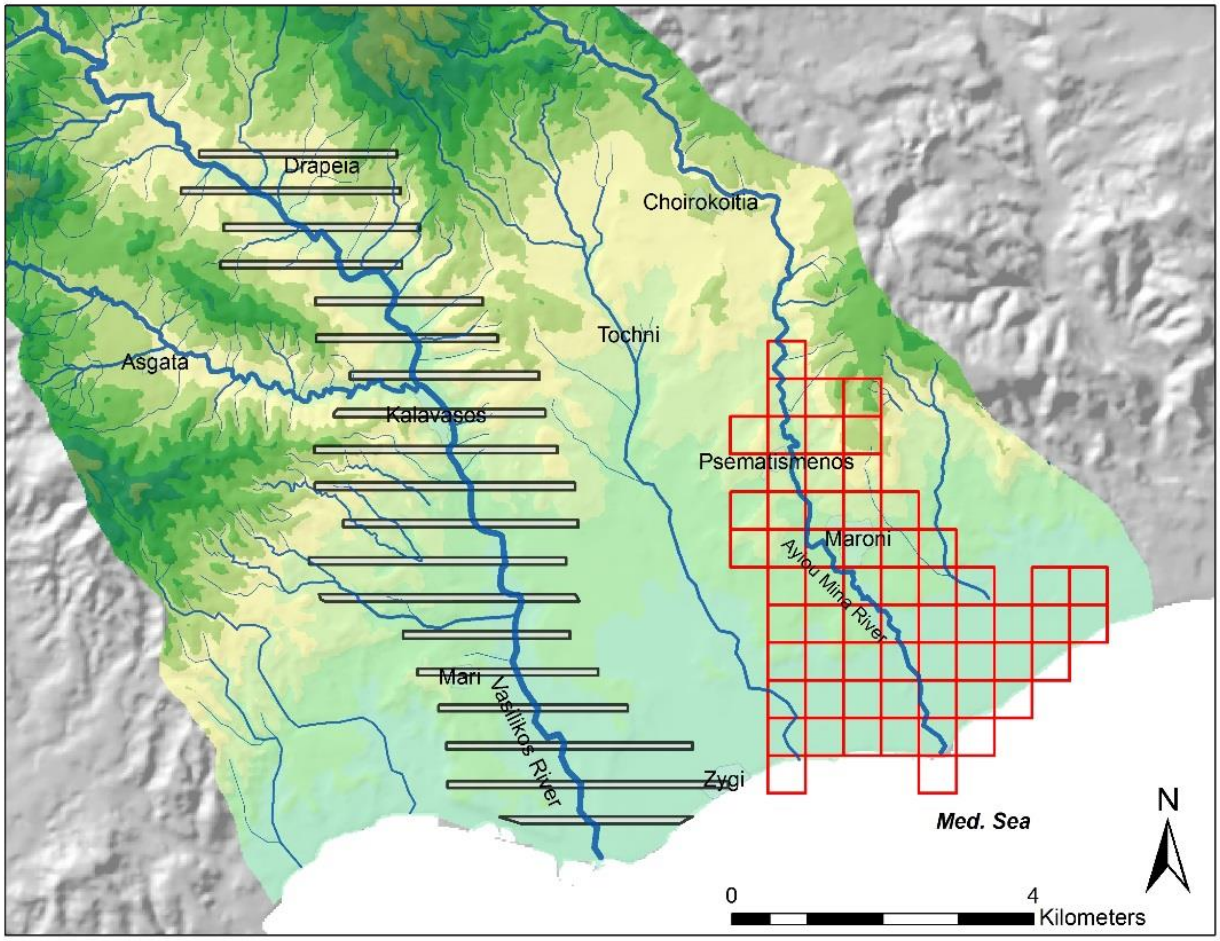


Fig. 3.1.2. Vasilikos and Maroni survey areas within the southern portions of the respective valleys, showing names of modern villages.

In this sub-chapter I briefly introduce the major components of the Vasilikos and Maroni valleys that will become the focus of **chapters 4, 5,** and **6**. I begin with the geological and climatic context of the region, its vegetation, and previous geomorphological studies to set the stage. It should be noted that considerable geomorphological work has occurred within the

Vasilikos Valley, providing useful resources for understanding alluvial stratigraphy and erosion (e.g. Gomez 1987; Gomez *et al.* 2004; Waters *et al.* 2010). A short history of archaeological research in the region follows the geological and environmental setting, which highlights the long-standing focus on prehistoric remains. Finally, I introduce how current scholarship has inserted this region into the storyline of the emergence of the Iron Age city-kingdoms, and the relationship of the Vasilikos and Maroni valleys to the prominent center of Amathus to the west.

Environmental context

These two watersheds, of the Vasilikos and Ayia Moni rivers respectively, radiate out from the south-central Troodos Massif toward the coast, cutting through the pillow lavas and igneous bedrock of the Troodos range, then through the chalks, cherts, and limestones of the sedimentary zone, and finally through the marine and alluvial terraces near the coast (Fig. 3).[124] Demetris Christodoulou (1959: 16-18) classified the insular sub-region to which the valleys belong as the "chalk plateaus of southern Cyprus," also known as the Lefkara Plateau, extending roughly from Kition in the east to Paphos in the west (Pantazis 1967). In a recent detailed synthesis of geomorphological work done on the island, Jay Noller (2010: 2.9) situates the Vasilikos and Maroni valleys within the larger Larnaca physiographic zone, which consists of east-facing coastal plains with marine terraces, and an inland of basaltic rocks of Troodos ophiolite, from which derive the copper-rich pillow lavas.[125] The igneous zone covers roughly 2/3 of the Vasilikos Valley and rests above 200 m asl (Gomez *et al.* 2004: 6). Of the lower part of the Vasilikos, the sedimentary sequence consists of marly chalk and chert, the latter of which

[124] A recent dissertation on the hydrogeomorphology of the region breaks down the two valleys' major characteristics (Constantinou 2011).

[125] The Troodos ophiolite refers to the geologic core of the island which is a fragment of fully developed oceanic crust, consisting of volcanic rocks as well as chemical sediments.

was a valuable prehistoric resource. Locally, the pervasive limestone of the plateaus is known as *havara*, a compact carbonate mixture, and *kafkalla*, a calcareous crust forming on top of *havara* (Pantazis 1967). In certain parts of the Vasilikos Valley there are also evaporitic deposits of gypsum, which belong to the geologic Kalavasos Formation, after the name of the nearby village. This Marmara gypsum has been quarried since antiquity and is used as flooring or to create plaster (Gomez *et al.* 2004: 6). In addition, in the southwestern part of the Vasilikos Valley, there are active tectonic fault lines (Waters *et al.* 2010).

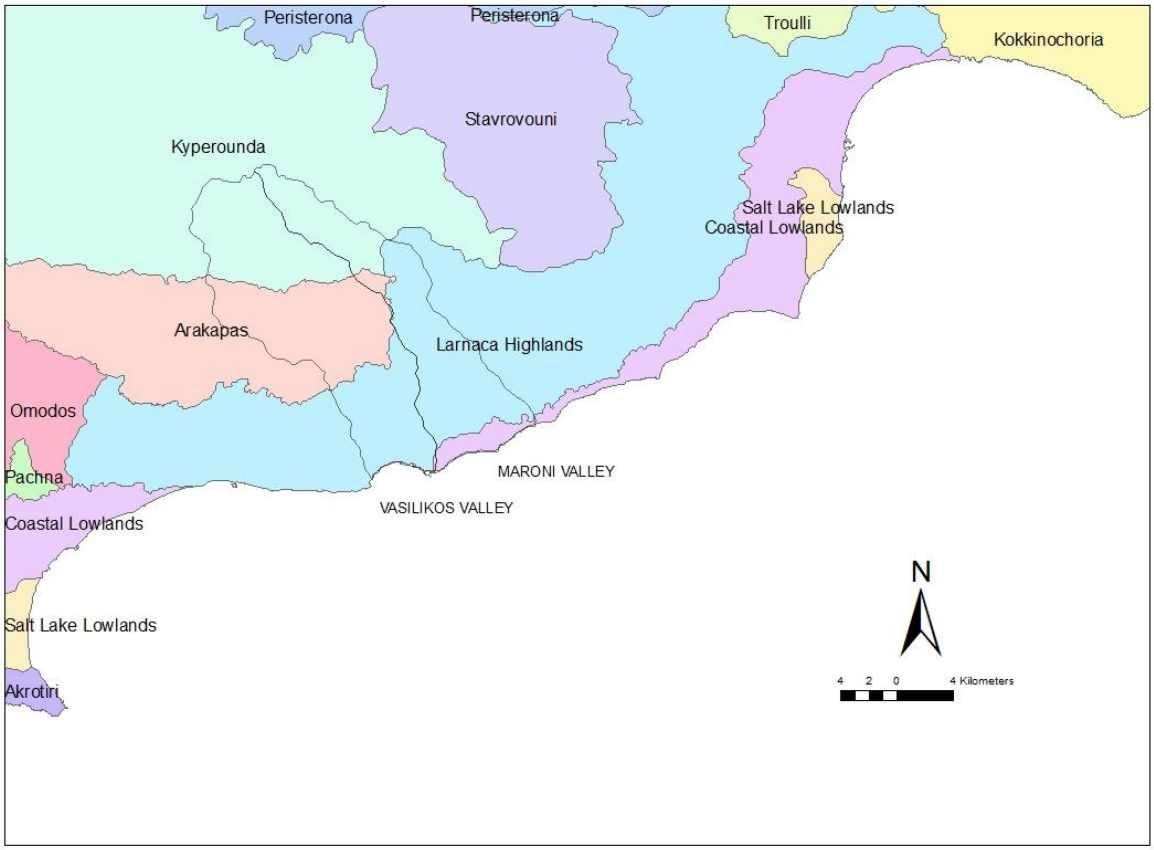


Fig. 3.1.3. Geomorphological provinces of south-central Cyprus. Data provided by Noller 2010. The Vasilikos and Maroni Valleys are similarly situated between the Arakapas and Kyperounda igneous zone, the chalky Larnaca highlands, and the coastal lowlands.

The major rivers in these catchments, as well as streams, are perennial and depend almost entirely on rainfall (Gomez *et al*. 2004: 11; see Fig. 1). As typical of other semiarid regions with winter rainfall, water flow can typically occur as flash floods. In 1985, a rockfill dam was

completed north of Kalavasos village, with a catchment of ca. 100 sq. km, which has increased the amount of irrigation water for the lower parts of the valley.[126] There are four main alluvial terraces for the Vasilikos Valley, identified at heights of approximately 10 m, 25 m, 55m and 80 m asl, which Gomez (1987) argued were similar to other alluvial terraces in the Mesaoria Plain, in the south-eastern part of the island, and to the Kyrenia range to the north. In this important study, Gomez (1987) compared the alluvial stratigraphy of the Vasilikos Valley to the two general time-confined eras of alluvial aggradation (fills) in the Mediterranean that Vita-Finzi (1969) had theorized: the Older Fill, which Vita-Finzi placed in the late Pleistocene (e.g. 50000 to 10000 BCE), and the Younger Fill, which occurred in the Medieval period (e.g. 400-1500 CE).[127] Gomez's work illustrated the inconsistencies of this neat paradigm (and its inherent weaknesses in terms of dating and geographic variability), revealing at least two periods of aggradation since the Bronze Age associated with the Younger Fill. In some places in the Vasilikos floodplain, boreholes have revealed up to 25 m of alluvium, potentially covering evidence for settlements that had been positioned near the river's edges. Especially in its lower course, the Vasilikos River has changed considerably due to anthropogenic construction and the extraction of river gravels, especially after the construction of a large power plant and cement-making industrial zone near the mouth of the Vasilikos River.

The climate of the Vasilikos and Maroni region can be classified as typical Mediterranean, with wet winters and hot, dry summers, and precipitation is the most critical environmental factor for the conditioning of vegetation, soil, and water availability (Gomez *et al.* 2004: 10; Waters *et al.* 2010). The mean annual precipitation is roughly 600 mm, with a gradient

[126] The Kalavasos dam, which when full covers about 100 ha, is part of the Vasilikos-Pendaskinos Project which was initiated to provide irrigation water for villages in the south-central part of the island. As Todd (*VVP* 12) explains, the dam has also obliterated the remains of several archaeological sites and at least one medieval water mill.
[127] See Bintliff 2002 for a review of Vita-Finzi's theory and its reception.

of ca. 800 mm inland and ca. 400 mm near the coast, and the rainy season is typically between October and May. As a recent study of precipitation on Cyprus has shown (Griggs *et al.* 2014), interannual variation is considerable and droughts are common, although in most years enough rainfall occurs to allow dry-farming of cereals. As for soils, the region has an array of mostly calcareous soils overlying the chalks and limestones of the sedimentary sequence with some *terra rossa* (reddish soil) developed on the marine terraces and alluvial soils on the floodplains. In the upper Vasilikos Valley, dry carbonate soils are found on top of the igneous rocks (Soil Survey Section 1961; Gomez *et al.* 2004: 11).[128] In terms of vegetation, the alluvium boasts the best soils for cultivating a wide range of crops, while the coarser calcareous soils on hilltops are used principally only for cereals.

The vegetation of the lower parts of the Vasilikos and Maroni valleys consists mostly of xerophytic shrubs or maquis, especially during the winter months, which include an assortment of cistus (*Cistus slaviaefolius*), lentisk (*Pistacia lentiscus*), juniper (*Juniperus phoenicia*) and kermes oak (*Quercus coccifera*) (Gomez *et al.* 2004: 12-13). In the higher slopes near the igneous zone, remnants of pine (*Pinus halepensis* and *Pinus brutia*), oak (*Quercus ilex*) and hawthorn (*Crataegus alnifolia*) forests persist. In the dry summers, most areas are covered in a garrigue that includes spiny burnet (*Poterium spinosum*) and thyme (*Thymus capitatus*). In terms of cultivated crops, wheat is the principle cereal, while carobs and olives form a significant part of the local economy, the former generating a considerable industry in the 19th c. CE based in the town of Zygi on the coast (Gomez *et al.* 2004: 13; Christodoulou 1959: 211; Pantazis 1967: 19). Agricultural terraces, while not uncommon in the area, are often abandoned, particularly in the upper parts of the valleys. Finally, sheep and goat herds are integral to local land use practices.

[128] A modern soil map for this region was not available at the time of writing this dissertation, although a mapping project is currently underway at the Geological Survey Department.

Given the prevalence of the word "mandra" or "mandres" (folds) in the region's place-names, J. Malcolm Wagstaff (Gomez *et al.* 2004: 14) has suggested that shepherding and pastoralism were more extensive in antiquity.

History of archaeological research

It could be easily argued that the prehistoric material and sites found within the Vasilikos and Maroni watersheds have held most of the scholarly attention, and that the history of the region in the Iron Age is consequently greatly understudied. Todd (*VVP* 9: 17-18) has provided an overview of archaeological research in the Vasilikos Valley. He highlights the repeated, if sometimes casual, visits by early archaeologists in the first half of the 20th c. to sites with visible prehistoric remains, which led to the eventual focus on the very important Aceramic Neolithic site of Kalavasos *Tenta*. In the 1950s, the director of the Cyprus Museum, Porphyrios Dikaios, investigated the hill of *Tenta* as well as Middle Cypriot sites at Mari *Paliambela* and Kalavasos *Pamboules*. Later Catling, as leader of the Cyprus Survey, made some trips down to the Vasilikos area from his main survey region of the center of the island and the north to assess the evidence for Late Bronze Age settlement patterns (Hadjisavvas 2004: fig. 2.1; Catling 1962). In the 1980s, excavations at the site of Kalavasos *Ayios Dhimitrios* revealed an important urban complex with large, monumental architecture, evidence for craft production and industry, and huge storage facilities, especially a large Pithos Hall (e.g. South 1995). Continuing work at this site by the Kalavasos and Maroni Built Environments Project (KAMBE) has uncovered additional monumental buildings with evidence of urban planning (Urban *et al.* 2013).

In the Maroni valley, a similar skew towards prehistoric studies is apparent (Johnson 1980). It is possible that the antiquarian Luigi Palma di Cesnola visited the Maroni coastline in

the 1870s and dug up some Late Bronze Age tombs (Cesnola 1877: 268). The British Museum, a couple of decades later in 1897, performed a brief expedition to this same coastal area to look for prehistoric tombs (Johnson 1980: 5-13; Todd *VVP* 9: 17; Cadogan 1992:123). Exploring the Late Bronze Age cemeteries and removing valuable ceramics, the mission considered the area "a complete frost" relative to the abundance of finds at sites like Episkopi to the west or Enkomi to the east (Cadogan 1992: 124; Manning and Monks 1998: 297-307).[129] Nevertheless, later excavations at the coastal site of Maroni *Tsaroukkas*, in between the pits dug by the BM, have revealed an important trading site with evidence for craft specialization and numerous stone anchors, suggesting a port or harbor (Manning *et al.* 2002; Manning and de Mita 1997). Further inland, Cadogan's excavations at Maroni *Vournes*, on a low rise roughly 1 km from the coast, uncovered similarly monumental ashlar buildings, industrial spaces, and tombs as found at *Ayios Dhimitrios* (e.g. Cadogan 1992). Recent geophysical work in this area has suggested a dispersed Late Bronze Age urban landscape (Manning *et al.* 2014). Both *Vournes* and *Ayios Dhimitrios*, two large urban centers constructed during the Late Bronze Age, have had significant influence in theoretical interpretations of Late Cypriot society and the potential hierarchical, or heterarchical, framework for political organization (e.g. Goren *et al.* 2003; Keswani 1996). Perhaps the most well-known work in the Maroni watershed is Dikaios' work at the famous Ceramic Neolithic site of Khirokitia, however. Dikaios' excavations at Khirokitia revolutionized the study of the earliest prehistory of the island and commanded significant attention in later projects (e.g. Le Brun: 1989).

[129] The BM team did note an Archaic site with Greek pottery, and "considerable traces of ruins" but no tombs, which is likely an area called Maroni Yialos near the coast where a limestone Bes figurine was later found (Karageorghis 1978; Johnson 1980: 6).

Investigations of post-Bronze Age material in both valleys have been less common, although there are publications on Roman-Late Roman sites and survey data in both valleys (Rautman *et al.* 2003; Manning and Manning 2002). The majority of sites that were recorded on visits to the region were tombs, many of which had previously been looted. In the 19th c., Max Ohnefalsch-Richter visited the area of Mari in the Vasilikos Valley, for example, noting several tombs with painted Iron Age pottery and excavating a number of them for the British Museum in 1881, although no records survive for this fieldwork (Myres and Ohnefalsch-Richter 1899: 1-12). Since then, the Department of Antiquities has done some salvage work in the area, but not for any extended excavation periods (e.g. Flourentzos 2008). In the early 1990s Todd of the VVP was informed of a small sanctuary with numerous sculptures and terracotta fragments at Vavla *Kapsalaes*, high up the Ayiou Mina watershed, which he mapped and studied with Margaret Morden (Morden and Todd 1994). The Department of Antiquities has also published a CA I tomb from the Mari area, which had numerous grave goods, including iron swords (Hadjicosti 1997b), and a CA-CC tomb at Kalavasos *Kafkalies* (Flourentzos 1985: n. 13).

As noted above, two major interdisciplinary survey projects have investigated these valleys since the 1970s: the VVP and the MVASP, which provide much of the data discussed in **chapter 5**. These two international projects uncovered significant amounts of evidence of post-Bronze Age activity in this region, but both determined a lack of material from the 11th – 9th c. BCE (Todd and South 1992; Todd *VVP* 12: 99). There were limited patterns of destruction at Kalavasos *Ayios Dhimitrios* and none seen at other LBA sites in the Vasilikos Valley, suggesting that most sites were abandoned and followed by discontinuity of little to no settlement evidence (South 2002). Ongoing work at the coastal site of Tochni *Lakkia* by D. Sewell and G. Andreou has produced early Iron Age material, but the analysis is still ongoing. In the surveyed area of the

Maroni Valley, beside Maroni *Yialos*, a later Classical-Roman period site, only two other possible contemporaneous settlements were recorded, Maroni *Vouni* and Maroni *Viklari* (Manning *et al.* 1994). Previous work in 1966 in this portion of the valley by the Department of Antiquities further identified an early CA tomb in Maroni village, near the modern cemetery (Karageorghis 1972; Johnson 1980: 6). One CA I-II tomb near to the Neolithic site of Khirokitia at *Anaphanties* has also been recorded (Flourentzos 1985).[130] And, a small CA-Hellenistic shrine has been excavated within the walls of the Late Bronze Age monumental Ashlar building at Maroni *Vournes* (Ulbrich 2012).

Thus, little excavated evidence of the early 1st millennium BCE exists in either valley, nor do textual sources reveal a local contemporary toponym.[131] For these reasons, and without the aid of textual support, the region exists in modern scholarship as a hazily defined subject on the eastern border of the nearby city-kingdom of Amathus, ca. 20 km to the west (e.g. Petit 1997; Aupert 1996: fig. 2; Iacovou 2014a: 663).

Amathusian boundaries: current thought on the 1st millennium BCE landscapes of the Vasilikos and Maroni region

"The founders of Amathus [were] moving into a virtual topographic gap, a land vacancy claimed by nobody since at least as far back as the end of the 13th century." (Iacovou 1994: 156)

Unlike the Vasilikos and Maroni region to the west, the site of Amathus has a long history of antiquarian and archaeological attention, from the discoveries of Melchior de Vogue in

[130] Flourentzos (1985: n1) also notes other CA tombs found by the Cyprus Survey around the village of Khirokitia, mostly all looted.

[131] In his description of the geography of Cyprus, Strabo (14.6.2) mentions a small town ("πολίχνη") named Palaea somewhere near Amathus: "Then to the city Amathus, and, in the interval, to a small town called Palaea, and to a breast-shaped mountain called Olympus." (εἶτ' Ἀμαθοῦς πόλις καὶ μεταξὺ πολίχνη Παλαιὰ καλουμένη, καὶ ὄρος μαστοειδὲς Ὄλυμπος). Since this line follows the description of Kition to the east, it is possible that Palaea lies somewhere "in the interval" between Amathus and Kition, potentially in the Vasilikos or Maroni valleys, but this is of course only hypothetical.

1862, through the excavations by Sir J.L. Myres in the late 19th c., to the initiation of the French Mission directed by Pierre Aupert in the 1970s, and later directed by Antoine Hermary (Aupert 1996: 13-15). According to these excavations, a small ceramic scatter found on the "acropolis" dates to the 11th c. BCE (Aupert 1997), but the initial settlement on this prominent ridge and the surrounding hillside is generally dated to the 9th c. BCE (Petit 2001; see **Fig. 4**).

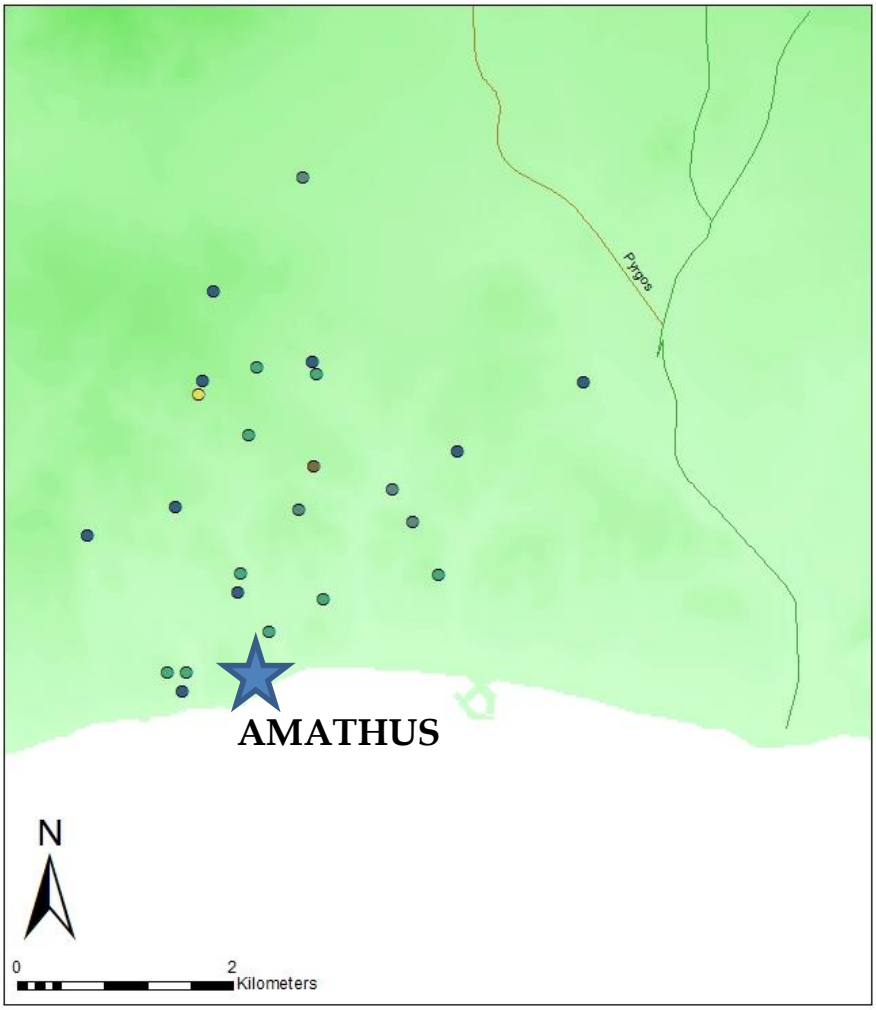


Fig. 3.1.4. Site of Amathus on southern coast with CG-CA settlements shown surrounding (adapted from Petit *et al*. 1989).

By the 8th and 7th c., the first deposits at the temple of Aphrodite on the acropolis appear and the first indications of social distinction in tombs, leading excavators (and other scholars) to assume that Amathus was a kingdom by the mid-8th c. BCE with its own royal complex known from

excavation reports as the Palais or palace (Blandin *et al.* 2008; Fig. 5). Unfortunately, much of the recent fieldwork on the complex by the French Mission remains to be published; most research has centered on a number of trenches around an apparently large storeroom, with copper slag as well as workshops that suggest the industrial nature of at least part of the complex (see Blandin *et al.* 2008).

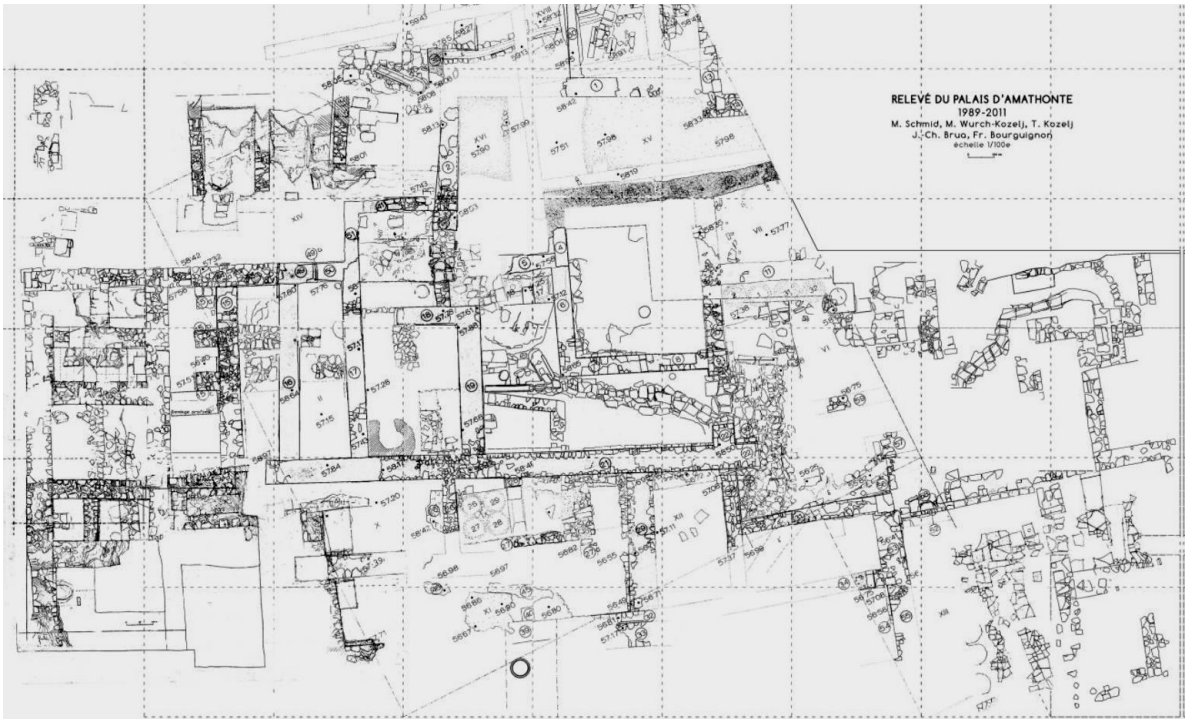


Fig. 3.1.5. Palais of Amathus, excavation plot showing architecture (Hermary 2013: Fig. 6)

But the city of Amathus does not appear in the Sargon or Esarhaddon stelae,[132] nor on the Medinet Habu list, an inscription of the Egyptian king Ramses III detailing his conquered foes

[132] There is a debate over whether the Neo-Assyrians used the name *Qartidihast*, "new city," or *Nuria*, listed on the Esarhaddon stela, to signify Amathus as one of the major cities on the island, mostly for the reason that the city's archaeology is too important to not have warranted a mention on the list. See Masson and Masson 1983; Satraki 2012: 350; Iacovou 1994, 2002.

(Kitchen 1983; Knapp 2013: 450)[133]: Amathus' historical presence surfaces much later, in Greco-Roman writings. Later sources, in particular Pseudo-Skylax of the 4th c. BCE, specifically mark Amathus as autochthonous[134] – originating from local ethnic groups – as opposed to other settlements that were either founded by or populated with migrants, such as Kition or Salamis.[135] Others, such as Theopompos (late 4th c. BCE), claim the Amathusians as descendants of Kinyras, the mythical proto-king of Cyprus. This self-emerging identity of Amathus generated one of the more enduring myths of the 1st-millennium BCE political landscape, the ethnic group known as the Eteocypriots (Given 1998; Petit 1999). The Eteocypriots are viewed as the population on the island before the Greeks and Phoenicians arrived, and existed side-by-side after their immigration. Adding to these interpretations are inscriptions from Amathus that have been found in two dialects: a local one, and a Greek one.[136]

Amathus is thus an important but poorly understood polity to the west of the study region, the Vasilikos and Maroni valleys. Because of the predominance of the two Late Bronze Age urban centers in the area, Kalavasos *Ayios Dhimitrios* and Maroni *Vournes*, most scholars argue that their abandonment sometime in the 12th c. BCE left an opening into which Amathus later emerged and took control of this border area for its access to copper resources (Aupert 1996: 22-23; South 2002: 68; Georgiou 2012; Iacovou 2013b). But what makes a region a border? And what made its inhabitants subjects of Amathus? Most arguments take up a

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[133] The inscriptions, on the walls of the Medinet Habu Temple, date to 1181 BCE and cover the 5th, 8th, and 11th years of Ramses III's rule. They are most infamous for detailing the supposed "Sea Peoples" who many argue contributed to the collapse of Late Bronze Age centers, and the ways in which Ramses III put them down. For a critical view of the inscriptions as misleading propaganda, see e.g. Van Der Mieroop 2010, *A History of Ancient Egypt*, 242-43. For the relevance of the list's names to Cypriot places, see Iacovou 2002.

[134] Stephanus of Byzantium, 6th c. CE, calls Amathusians 'Cypriots,' "and thus, by implication, not foreigners who came to settle in Cyprus" (Aupert 1997: 21).

[135] There is debate over the apparent autochthony of Amathus; e.g. Coldstream 2012: 12-13.

[136] Gjerstad (1948: 1), building off of this conception in relation to the 'invasions' of the 12th c. BCE, asserts that "on the south coast the arms of the pincers were not pressed together, so that Amathus and Kition were apparently not included in the effective area of occupation"

somewhat Wallersteinian core-periphery model of economic hinterland exploitation: the copper mines near Kalavasos *Platies* and Kalavasos *Petra* (the second largest on the island, after the slag heaps at Skouriotissa, Kassianidou 2013: 66-67) made it a valuable border-region.[137] Todd (*VVP* 12: 99) cautions against such a simple equation connecting the 12th c. BCE abandonment to the rise of Amathus: "From the general point of view, while it may be attractive to correlate the end of the Late Bronze Age in the Kalavasos/Maroni area with the foundation of the site at Amathus, there is little to support such a connection at present."

Based on the 9th-8th c. BCE foundation of Amathus as a "city-kingdom," most authors argue that the Vasilikos and Maroni region was embedded within Amathusian territory, presumably as part of its peripheral *chora* (e.g. Iacovou 1994, 2014a: 663; Aupert 1996: fig. 2). According to the French mission at Amathus, the disappearance of the urban centers at Kalavasos and Maroni "permitted without a doubt the new arrivals to extend their influence in these relatively nearby areas which became part of the future kingdom and brought a large part of their revenues" (Aupert 1996: 21). In Iacovou's (2013a: 144; also 2008a: 642; 2014: 663) words, "it did not take long for the power vacuum created in regions where the primary center had succumbed after the thirteenth-century BCE crisis to heal." Here, the concept of a "power vacuum" becomes an explanatory factor for territorial control: an argument from negative evidence for settlements, used to explain the persistence of an apparent absence of power (e.g. Janes 2013: 158; Iacovou 2013b: 28).[138] The formulation is also tautological: a power vacuum existed because of the lack of an urban settlement after the fall of Kalavasos *Ayios Dhimitrios*

[137] For Immanuel Wallerstein's core-periphery theory, also known as world-systems, see (1974) *The Modern WorldSystem: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. New York: Academic Press.

[138] Iacovou (2014a: 663) has most recently stated that "the power vacuum is one of the characteristics of the Cypriot 12th century." Her metaphors for power vacuums "healing" (2013a: 144) is, however, confusing.

and Maroni *Vournes*, and there were no urban settlements in the area in the 11th-10th c. BCE because of a power vacuum.

But what exactly is a "power vacuum"? The concept of a "vacuum" or "apolarity" (Ferguson 2004) in which there is an absence of authority, allowing other powers to take over, implicitly belongs to a theory of political realism, which views states as inherently motivated by expanding and increasing their power.[139] In other words, as with Aristotle's maxim that nature abhors a vacuum, states will seek to expand control wherever there is deemed an absence of power. But without a clear idea of what Cypriot sovereignty was in this period, this charge of vacuums becomes less convincing. While the term does not necessarily suggest a Weberian (1946) zero-sum equation, in which the "power" is some fixed amount that one group loses and another takes up whole, the uses of the term on Cyprus do seem to imply an arithmetic in which power cannot exist in a place that no longer has an urban center. In other words, since Kalavasos *Ayios Dhimitrios* and Maroni *Vournes* were abandoned in the 12th c. BCE, their power had to go somewhere, and scholars have identified both Amathus to the west and Kition to the east as the next in line, at least by the 9th/8th c. BCE.[140] This postulate of a power vacuum suggests the complete absence of authority or power in the Vasilikos and Maroni valleys in the early 1st millennium BCE, emptying the region of any alternative political configurations. It also renders the transfer of this "power" somewhat passive, without examining the ways in which Amathus

[139] Political realism as conceived in international theory has its origins in Thucydides and Thomas Hobbes, who viewed power as the primary force behind politics and sovereignty. For an introduction to political realism see e.g. R. Spegele (1996) *Political Realism in International Theory*, Cambridge. Those who use the term power vacuum for Cyprus never actually mention this body of theory. The concept of the power vacuum is widely used, but rarely critiqued, in literature on power shifts after collapse; see e.g. Broodbank 2013: 449: "neighbors quickly stepped in to fill the void" when Ugarit fell in 1182 BCE.

[140] Scholarly consensus now places the establishment of Kition somewhere in the 13th c., with probably Phoenician presence and elite control of markets by the 8th c. BCE (e.g. Smith 2009).

(or whoever) might have taken control of these resources and managed to generate authority with which to subjugate the region.

What this dissertation aims to provide is an alternative approach to understanding the formation of different authorities in the post-collapse context of Cyprus that moves beyond assumptions of cities, kings, or power vacuums. The region of the Vasilikos and Maroni valleys has no excavated urban center dating to the 1st millennium BCE, which seems to invite rather vague arguments about power. Viewed only as a border region with access to copper, the valleys' subjugation, or their identifications as subjects to the centers of Amathus or Kition, are taken for granted. Thomas Kiely (2011: 557) has noted a similar problem for the area around Kourion:

> …rather than attempt to play one site against the other, as it were, with claims and counter-claims about their specific archaeological natures, it seems more constructive to consider the political structure of the valley from the bottom up, that is in terms of individual sites and their diachronic development, rather than assume *a priori* the existence of a bounded territory based on geographical parameters alone, that is to say, the idea of a pre-existing Kourion region in the LBA.

I argue that an interdisciplinary study of the landscapes, spaces, and environments that shaped the formation of new political authorities can reveal the social boundaries critical to the foundation of these 1st-millennium BCE polities, and can move beyond these implicitly realist assumptions of political expansion into vacuums. As Smith (2003: 29) has convincingly argued,

> It is impossible to describe political authorities independent of the landscapes they created: the regions they united, the cities they built, the inspirations evoked in the monuments they raised, and the cartographic desires they inflamed.

Conclusion

The Vasilikos and Maroni region provides one understudied case, then, for examining the interactions between changing environments and settlement practices in the 9th-8th c. BCE that

are the focus of the chapters that follow. In **chapter 4**, I provide a preliminary hypothesis for a shift in climate to wetter conditions in this period based on isotopic analysis of archaeological charcoal. Many of the charcoal pieces driving this dataset come from archaeological sites in this area: Kalavasos *Ayios Dhimitrios*, Maroni *Tsaroukkas*, and Zygi *Petrini*. In **chapter 5**, I present a detailed re-analysis of the survey material from the VVP and MVASP projects and construct a macro-scalar hypothesis for changing settlement practices in this region in the 9th-8th c. BCE. **Chapter 6** brings this landscape evidence together to explore human-environment relationships at additional analytic levels: the community, the region, and the island.

Chapter 4

Paleoenvironmental evidence for late Holocene dynamics: Carbon stable isotope analysis on archaeological charcoal

Introduction

"A historian is not allowed to say that a climatic event 'marks the beginning of' the Greek Renaissance." (Harris 2013: n. 22)

By viewing places and landscapes as prominent within the changing social and political contexts of the early 1st millennium BCE on Cyprus, this project resides within the broader spatial turn of the last few decades (Blake 2002). It also follows the vanguard of a more recent climatic turn, which pivots around climate and human-environment relationships, across the humanities and social and natural sciences (see e.g. McIntosh *et al.* 2000). The last 15 years have witnessed a remarkable rise in the number of interdisciplinary studies intent on establishing causal links between climatic and societal change, or on reconstructing environmental histories at local or regional scales. And although there are lingering worries that studying past climates always leads to reductive environmental determinism, perhaps thinly veiled in the historian William Harris' quote above, more and more projects are recognizing the complicated interconnections between humans and their physical surroundings.[141] Certainly some of the thrust behind this work is presentist, as noted in the introduction (e.g. Orlove *et al.* 2014; Dawdy 2009; Hardesty 2007) and of the Anthropocene (Crutzen 2002). Emerging from recent research, however, are important contributions that are investigating how climatic change is not monolithic, impacting everyone or every institution in the same way, but embedded within mutable and flexible human practices. This chapter challenges Harris' opinion on doing history by presenting archaeometric evidence, in the form of carbon stable isotope analysis of charcoal,

[141] This quote appears in the introduction to Harris' own edited volume, *The Ancient Mediterranean Environment Between Science and History* (2013), which includes several papers on climate.

in order to elucidate the shifting climates and environments that shaped social and political developments during the early 1st millennium BCE on Cyprus. In doing so, it creates the context out of which more robust questions of human-environment relationships and the emergence of new landscapes can arise.

The "beginning" that Harris claims historians cannot explain or categorize through climatic events is the focal point of my investigations of paleoclimate and social change. The end of the Bronze Age in the eastern Mediterranean, and the subsequent transition to the Iron Age, attract our persistent fascination with ends and beginnings yet remain poorly understood due to complex and ambiguous evidence, as outlined in **chapter 1** (see Cline 2014; Ward and Joukowsky 1992; Sherratt and Sherratt 1993: 361). In recent years, scholars have put new effort into investigating the human-environment relationships of this Bronze-Iron Age transition (e.g. Kaniewski *et al.* 2010, 2013; Langgut *et al.* 2012; Rohling *et al.* 2009; Drake 2012; Morris 2006). Recent paleoclimatic research, ranging widely in precision and resolution, has revealed a period of increased aridity sometime in the late 13th/12th c. BCE and a shift to wetter conditions around the 8th c. BCE (Langgut *et al.* 2013; Kaniewski *et al.* 2010; cf. Drake 2012). The majority of this work has examined how increasing aridity may have weakened Late Bronze Age agropastoral land economies and destabilized trade relationships, as witnessed in contemporary texts (e.g. Singer 1999).

We know less, however, about the environmental changes that followed and their intersections with the social, political, and cultural "revolutions" of the 9th-8th c. BCE (Morris 2009). By the 8th c. BCE, societies around the east Mediterranean were revitalizing maritime routes, advancing new colonization practices and territorial identities, and innovating new scripts and iron production. These remarkable transformations, coined as a "Renaissance" (e.g. Hagg

1983; or "an unfinished eighth symphony," Broodbank 2013: 506) for the efflorescence of the Greek world, fostered the growth of 1st millennium BCE decentralized city-states, monarchies, empires, and a new economic framework (Sherratt and Sherratt 1993; Morris 2009). Given the complexity of the period, and its vagaries in relation to environmental and archaeological evidence, there is space for examining the local interactions among the re-generation of sociopolitical order, economic growth, and shifting climates.

In this chapter I present the results of carbon stable isotope analysis on archaeological charcoal from various sites on Cyprus and from the eastern Mediterranean, as a diachronic, indirect proxy of changing water availability in the late Holocene. Preceding a discussion of the theory and methodology of the technique, and the analysis of the results, I discuss the specific context of this research on the connections between climatic and social history via an episode of seemingly abrupt climate change in the eastern Mediterranean: the "Iron Age Cold Epoch" (as it has been called, e.g. van Geel *et al.* 1998). This purported shift constitutes a change from drier, cooler conditions to moister ones sometime around the 8th c. BCE, at the transition between the Subboreal and Subatlantic periods of the Holocene epoch. While this chapter prioritizes the viability of this paleoclimatic technique for environmental archaeology, it sets up a broader environmental context against which to place the practices of the period in the following chapters (Denham 2008: 468).

1st millennium BCE climate dynamics: the allure of "favorable" environments

Traditional interpretations of the current geological epoch, the Holocene, hold that this roughly 12,000 year period has been climatically stable since the Younger Dryas cold event (ca. 9,000 BCE), especially in comparison to the preceding Pleistocene epoch. Recent attention to internal Holocene climate dynamics, however, is painting a different picture, one of millennial to

century, and even decadal, changes in conditions such as temperature and humidity (e.g. Finné *et al.* 2011; Fig. 1). In a recent reappraisal of terminology for the Holocene, a committee (Walker *et al.* 2012) recommended a tripartite division based on two significant and likely global climatic changes, one in the late 9th millennium BCE (the "8.2 kya" event), and one at the end of the 3rd millennium BCE (the "4.2 kya" event). During these pivotal events, such as in the case of the 3rd millennium BCE, a sudden increase in aridity caused widespread variations in temperature and humidity, which coincided with dramatic changes in the archaeological record, as shown most prominently in Harvey Weiss' work at Tell Leilan in northern Syria (Weiss and Bradley 2001; Weiss *et al.* 2012; Ristvet and Weiss 2000; Kaniewski *et al.* 2010). Nevertheless, the Holocene is overall "fairly benign" (Manning 2013a: 105), so that the abrupt climate changes that become visible in proxy climatic records require multiscalar attention to address their possible effects. Yet it is also important not to "see" events where they might not have had much effect (e.g. Finné *et al.* 2011). The Mediterranean climate has, to be sure, quite dramatic regional variation. Neil Roberts *et al.* (2012) illustrated the evident shifts in relative humidity and temperature between the east and the west of the Mediterranean basin, for example, in a type of see-saw mechanism evident only at large timescales of a century or more (Manning 2013a: 108).

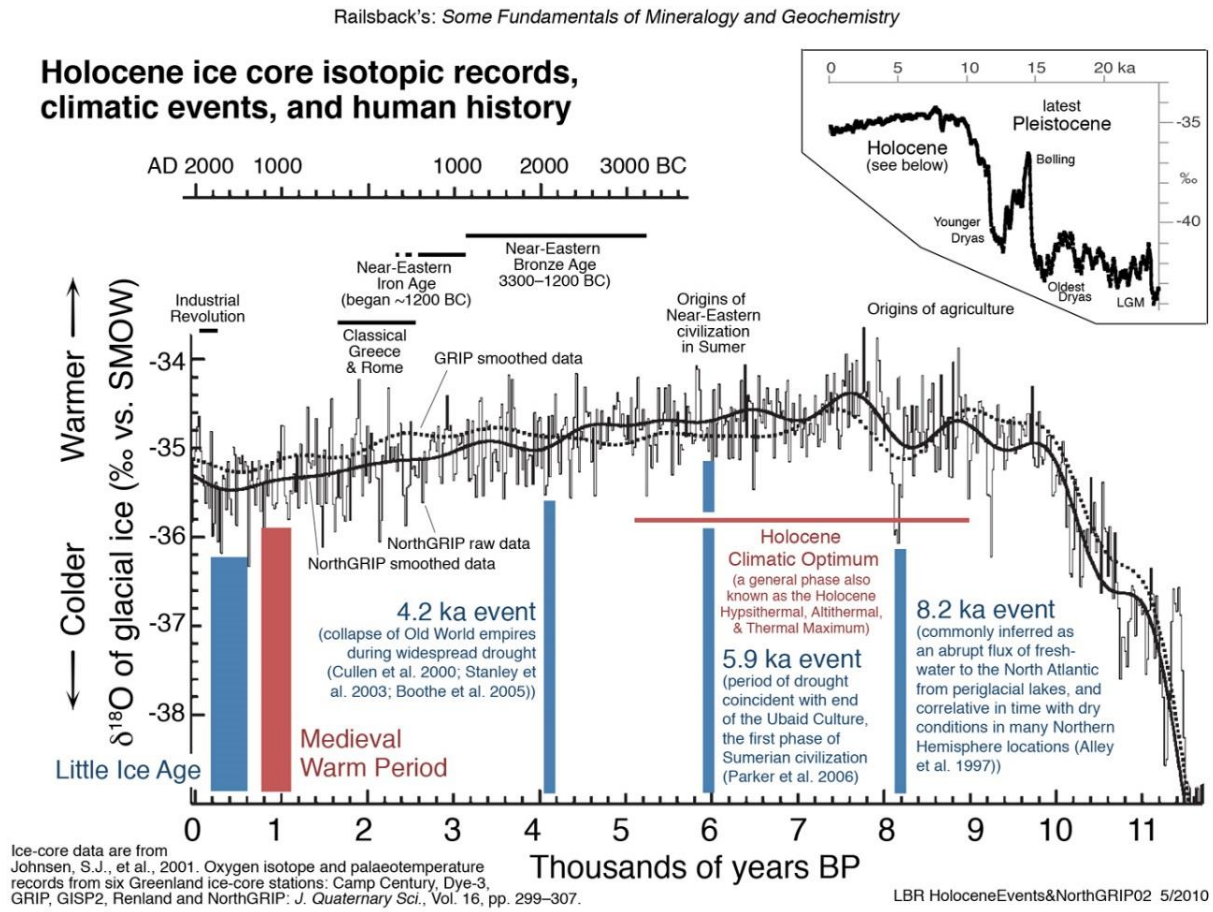


Fig. 4.1. Oxygen isotope records for Holocene (last 12,000 years), showing major "events" and cold-warm variations.

This new attention to the vagaries of Holocene climate has had implications for how archaeologists use and interpret climatic and environmental data, especially in cases like the 1st millennium BCE, where historical texts become more prominent and there is a lack of paleoenvironmental research. Increasingly, these studies are eschewing traditional disciplinary boundaries in order to integrate scientific, archaeological, and documentary evidence at multiple scales (e.g. McCormick *et al.* 2012 on the Roman Empire; Manning 2013a). This research has, however, mostly attended to the causal links between deteriorating climate and resource stress, decline/collapse, or resilience (e.g. Weiss and Bradley 2001; DeMenocal 2001; Middleton 2012; Fisher *et al.* 2009). Fewer projects have explored the possible interrelationships between more

consistent, favorable climatic contexts and growth in complexity (but see e.g. Pederson *et al.* 2014; van Geel *et al.* 2004; Manning 2010, 2013a; McCormick *et al.* 2012).

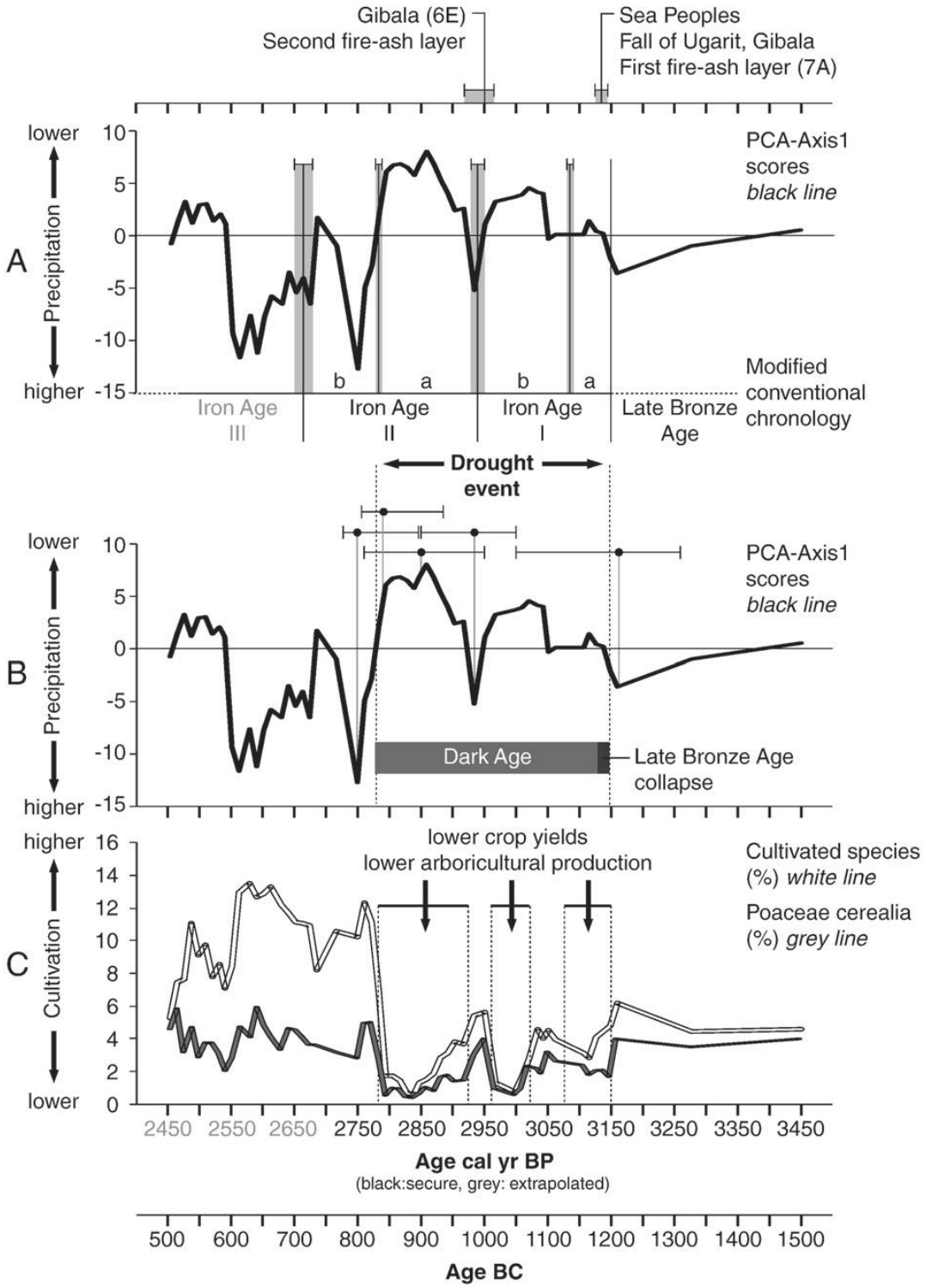


Fig. 4.2. Pollen data from Syria showing increasing aridity before ca. 850 BCE, and subsequent increasing moisture (after Kaniewski *et al.* 2010: fig. 5).

For the period ca. 1200 BCE, the end of the Late Bronze Age, several paleoenvironmental records, including cave speleothems, marine cores, and stable isotope data from lake sediments, of various levels of precision and timescale, provide indirect evidence for a pronounced shift to more arid and increasingly cooler conditions in the east Mediterranean (Roberts *et al.* 2011; Bar-Matthews *et al.* 1998; Finné *et al.* 2011; Kaniewski *et al.* 2013; Langgut *et al.* 2013). Pollen data from alluvial deposits at the site of Gibala Tell Tweini in Syria, for example, have indicated increased aridity between ca. 3125-2755 cal yr BP (Kaniewski *et al.* 2010; Fig. 2). Many of these records are low-resolution however, and the dating of this late 2nd millennium BCE arid phase remains unclear, as do the local and regional effects and the impact on intra-societal groups (see Rosen 2007; Knapp and Manning n.d.).

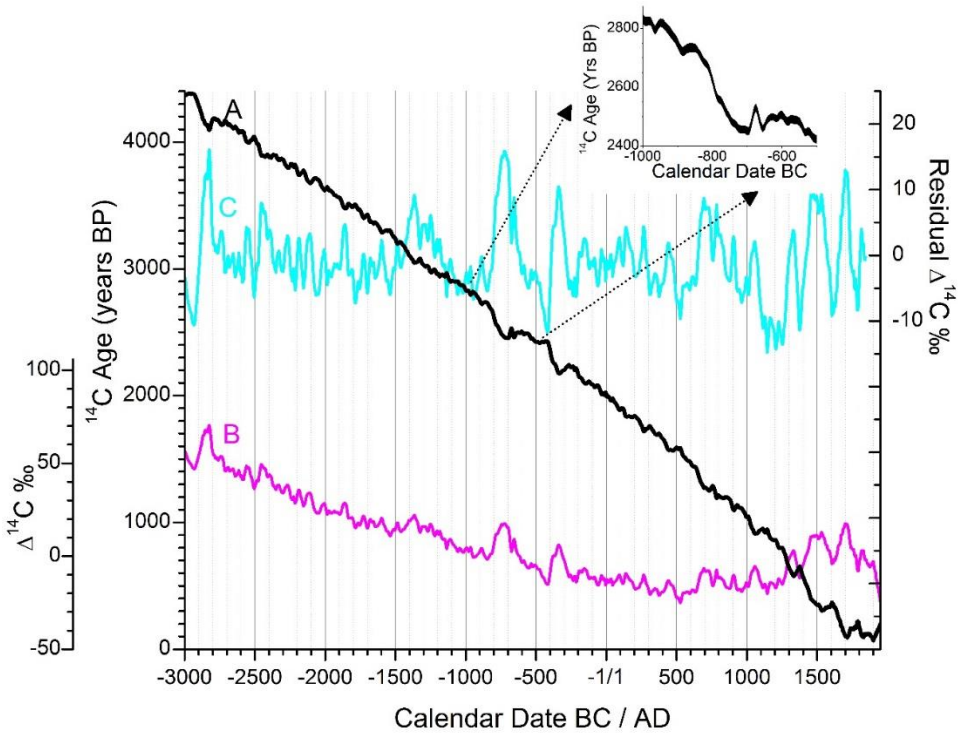


Fig. 4.3. The standard radiocarbon curve for 3000 BCE – 1950 CE, showing section 1000-500 BCE in more detail, as well as relative radiocarbon content decay (pink) and residual relative radiocarbon (after Manning 2013a: fig. 2).

After this dry episode, global proxy records suggest an abrupt climatic change to moister conditions ca. 750 BCE, which corresponds with a large ^{14}C production peak – associated with a grand solar minimum[142] (Manning 2013a: 112-114, figs. 2, 6a, 6b; Mayewski *et al.* 2004; Van Geel *et al.* 1998; Van Geel *et al.* 2004; Issar 2003: 24; Chambers *et al.* 2007; Kuzucuoğlu 2003; Fig. 3). This solar minimum likely lasted for about a century, as seen for example in evidence for a later, ca. 2700 cal BP solar forcing in peat bogs in Ireland (Plunkett and Swindles 2008; Usoskin *et al.* 2007). Major points of reduced solar activity have been correlated with preceding periods of lower temperatures (e.g. Bond *et al.* 2001), indicating cooler episodes with arguably more associated rainfall from increased cloud formation. After the solar minimum, warmer conditions follow, coupled with increased precipitation (Manning 2013a: 114). For this major minimum, then, the later 8th and 7th c. would have probably been marked by more rainfall and warming temperatures, as a number of records from both the northern and southern hemispheres suggest (e.g. Sabatier *et al.* 2012; Roberts *et al.* 2012; Issar 2003; Hassan 1997; Chambers *et al.* 2007). Due to the abovementioned regional disparities in climate in the Mediterranean, with different (sometimes opposing) correlations in temperature and precipitation between east and west, north and south (Roberts *et al.* 2012), the cooling in the early 1st millennium BCE seems to have created more arid conditions in northeastern Iberia, although these data likely reflect species variation more than relative climatic shifts (Ferrio *et al.* 2006).[143] In an earlier study, for example, a team (Gutierez-Elorza and Pena-Monne 1998) recorded the gradual increase in vegetation cover and the possible increase in water availability in northeastern Spain using

[142] A minimum is defined as the period of least activity of the sun during its 11-year cycle, and a grand minimum occurs when several cycles of low activity occur back-to-back; see Usoskin *et al.* 2007.

[143] Ferrio *et al.* (2006: 1264) note that *Pinus halepensis* in Iberia may be more susceptible to cold temperatures, relying on often little summer rainfall and recording water stress in carbon stable isotope analysis, even if winter precipitation was normal and therefore not indicative of a relative drought or especially dry climate (see discussion in Manning 2013a: 114, n. 9).

geomorphological methods. Brandon Drake (2012), on the other hand, has argued that the Iron Age was similarly arid and cool in the east Mediterranean, through a comparative analysis of sea surface temperatures, changes in warm-water foraminifera species, and stable carbon and oxygen isotope analyses from Israel and Greece, although his analyses are coarse (cf. Manning 2013a: 113-115). The inconsistent chronological precision of many of these studies, and the lack of precise records especially for the early 1st millennium BCE, highlight that more research is needed to determine how and under what conditions the solar minimum evidenced in radiocarbon data may have forced more precipitation in the eastern Mediterranean.

The paleoclimatic regimes and potential periods of increased aridity or precipitation for Cyprus in the prehistoric and early historic periods are, indeed, poorly understood compared to other parts of the eastern Mediterranean, such as Anatolia (e.g. Haldon *et al.* 2014; Finné et al. 2011: 3168; see **chapter 3** and Kearns 2013; Butzer and Harris 2007). Recently, (very) coarsely resolved pollen data from a core taken in the Larnaka Salt Lake support the proposed increase in aridity at the end of the 13th c. BCE, and a shift to less arid conditions around the 8th c. BCE (Kaniewski *et al.* 2013). As the third largest island in the Mediterranean (approx. 9250 km^2) with no perennial rivers and high topographical variability due to two prominent mountain ranges, the Troodos Massif and the Pentadaktylos range, Cyprus offers an ideal case for building a paleoclimatic record of precipitation. Its semiarid climate consists of hot, dry summers and cool, wet winters, in which 60% of annual precipitation occurs, of cyclonic origin. A recent 250-year precipitation reconstruction drawn from dendroclimatological data has shown that sustained droughts on Cyprus, of around 20 years in length, have occurred every 70-100 years since the mid-18th c. CE, with important implications for agroindustrial, domestic, and tourism management strategies (Griggs *et al.* 2014).

In taking on a paleoclimatic study for ancient Cyprus, and all of the methodological problems that ensue, the aim is to advocate an integrated approach that combines scientific and archaeological data to avoid over-generalizations of collapse, catastrophe, or the restrictive nature of climate and environment (Middleton 2012; see Pollard and Bray 2007). Following the work of Arlene Rosen (2007) and others interested in past human-environment/climate interactions (e.g. Fisher *et al.* 2009; Frankel *et al.* 2013; Sandweiss and Kelley 2012; Mitchell 2008; Wossink 2009), we can note that humans are not inherently susceptible to environmental change, nor are they grouped into monolithic entities that act or react in uniform ways. The capacity of authorities to manage and to take control of environmental concerns such as water shortage, for example, may create different effects amongst social groups. Changes in vegetation patterns or precipitation levels do not exist as a separate external factor driving societal transformation, but instead must be analyzed in tandem with the ordering of daily practice within a society (Smith 2003: 278-279).

A recent history of the shrinking of the Aral Sea in Central Asia offers one heuristic, modern example of these complexities, revealing both the human agency and regional climatic fluctuations that co-create large-scale ecological change (Bissell 2003). Since the late 1950s, Soviet-era irrigation schemes to create land for crop production have drastically reduced the Aral's extent, inducing a decades-long disaster which has forced the relocation and reorganization of entire communities that once sustained fishing and shipping economies. While upper echelons in local governments may continue to (mis)manage land productivity in the pursuit of the crop industry, the shrinking of both the sea and local populations persists at uncontrollable rates. And, without the Aral as a climatic regulator, aridity has increased as has

pollution from pesticides, fertilizers, and blowing dust, which have been catastrophic to the ecology as well as to the health of the area's nomadic groups.

The devastation associated with the gradual – but manipulated – retraction of the Aral Sea is a modern case study that fits well with increasing interest – and global anxieties – in environmentally-constrained collapse and ecological degradation. As others have noted (e.g. Harris 2013: 5), the debilitating crises in human society that often follow or coincide with regional or global climatic changes seem relatively easier to study in the archaeological and textual record than episodes of prosperous conditions. In other words, bad climates leave more visible and lasting traces than normal or good ones. Such axioms, often correlating macro-scalar phenomena such as depopulation with global warming or cooling episodes, resonate in explanations for major social and political transitions, such as the collapse of the Akkadian empire during the abrupt change to aridity around 2200 BCE (e.g. Weiss and Bradley 2001). On Cyprus, the deterioration of the island's forests under the Ottoman Empire has provided one example of environmental spoiling linked to foreign policy and weakened stability (Harris 2007).

In these reconstructions, which focus predominantly on seeking causality, and which often skew toward scientific or toward archaeological/textual evidence, societies either fail to adapt or lose their resilience in the face of physical forces beyond their control (e.g. Diamond 2005). These studies also often draw conclusions from singular records, which can lead to hasty interpretations. Many rely on what Paul Coombes and Keith Barber (2005) call "black box" arguments of climatic change, which employ only approximate or overly macro-scale data and create deterministic and reductive relationships between climate and society (see Hulme 2011). Bruce Winterhalder (1994) has noted a general tendency in these studies to foreground the environmental data, in lieu of increased attention to the formulation of models of variability

associated with sociopolitical changes (cf. Rosen and Rosen 2001). In this sense, if the climate gets worse, agropastoral economies suffer due to unsustainable reliance on harvests, dependent state powers fall apart, and chaos emerges. But what about the opposite scenario – if the climate gets better, do new communities or states form and prosper? Do populations necessarily start growing? Does farming as a rule become less risky, with reduced interannual variability of harvests, better soil quality, and control of erosion, allowing new or altered political economies reliant on agricultural commodities to develop? What are the scales at which we can see these changes? And how does "favorable" climate affect different social groups? This equation has certainly been less studied, although recent work is providing interesting examples (e.g. Pederson *et al.* 2014; Manning 2013a). Nevertheless, climate-society correlations can create a moral economy of environments, marked by value-laden terms such as "prosperous," "destructive," or "favorable," which do little to explain *how* climates and environments stimulate human development or instability.

In the same way that the reductive correlations between bad climate and collapse can mask the intricacies of human-environment relationships, in which one group's authority may weaken while another retains balance, "favorable" climates require careful analysis to explore their equally varied interactions with human populations (Kouki 2013). As Rosen (2007) has recently argued, what might be termed favorable periods without dramatic climatic change do not *de facto* allow us to infer prosperity: aggrandizing elites may build temples – an otherwise typical archaeological index of prosperity – to assuage fears over drought by appealing to gestural actions (see also Giddens 2009). In addition, archaeologists and paleoclimatologists alike tend not to focus on successful human adaptations, but rather to the challenges (e.g. Diamond 2005; see Rosen and Rosen 2001). In light of the recent study of a period of

unprecedented warm and moist climate coinciding with the rise of the Mongol Empire of Genghis Khan in the 13th century CE (Pederson *et al.* 2014), we can question how one emerging authority took control of rain-induced steppe productivity and concentrated resources, while scores of other people were subjugated by this new imperialism.

How does more rainfall, or more reliable growing seasons, intersect with contingent practices that variously constrain, or afford, the mechanisms that produce complexity? How is any human response to climatic change, whether to drought or to an onset of cooler temperatures, linked to political authority and social practice? My perspective examines not just whether societies expanded and developed new technologies during periods of seemingly "better" climate, but how new conditions interacted with the ordering of land management, political economy, and the emergence of cultural and social values of landscape within and between societies. From the perspective of these dynamic human-environment relationships, I argue for studying "landscapes-in-the-making," to reorient a phrase from W.G. Hoskins (1955), and place emphasis on the recurring and accumulating processes, experiences, and perceptions that shape human interactions with their surroundings. As a first step, however, we need to initiate a regional paleoclimatic picture of Cyprus and the eastern Mediterranean during this major solar minimum in the early 1st millennium BCE, to build up the context from which we might re-situate human-environment interactions.

Carbon Stable Isotope Analysis

In order to create an indirect proxy for past climatic shifts on Cyprus, this project implemented carbon stable isotope analysis on archaeological charcoal recovered from several archaeological sites on the island. Several international studies – in isotopic dendroclimatology, chemical geology, and other disciplines – have explored the correlations between carbon isotope

composition ($\delta^{13}C$) in plants and climatic variation, particularly in relation to water availability, humidity, and moisture conditions (Farquhar *et al.* 1989; Warren *et al.* 2001; McCarroll and Loader 2004; Araus *et al.* 1997). $\delta^{13}C$ measurements of charcoal are increasingly used as paleoenvironmental (indirect) proxies to reconstruct climatic conditions, agricultural productivity, and vegetation distribution (e.g. Ferrio *et al.* 2005, 2006; Fiorentino *et al.* 2007; Riehl *et al.* 2008; Aguilera *et al.* 2009; Resco *et al.* 2011; Drake *et al.* 2012; Araus *et al.* 1997; Vernet *et al.* 1996), particularly in dry environments (Aguilera *et al.* 2012). The low cost of the method, as well as improvements in sample preparation, have added further benefits (McCarroll and Loader 2004: 771).

Premise

The theory behind carbon stable isotope analysis of wood, for the purpose of understanding paleoclimate, centers on the biology of plants and how they have evolved different photosynthetic pathways for carbon fixation, which result in variations in the way that carbon isotopes behave during photosynthesis and the growth of the plant. The element carbon has two stable isotopes: carbon-12 (^{12}C) and carbon-13 (^{13}C), and their composition is measured as a ratio ($^{13}C/^{12}C$) and expressed in delta notation ($\delta^{13}C$), as parts per thousand (per mil; ‰) deviations in a sample from the known composition of a standard. Average difference in isotopic composition between sample and standard reference is determined with the differential notation:

$$\mathbf{(R_{sample}/R_{standard} - 1) \times 1000 = \delta(‰)}$$

where the $R_{standard}$ is the internationally known standard of $\delta^{13}C$ known as VPDB, or the Pee Dee Belemnite limestone reference, 0.011056. The R_{sample} is the ratio of the heavier isotope (carbon-

13) to the lighter isotope (carbon-12) in the sample, and δ is the difference in isotopic composition of the sample relative to that reference, expressed in per mil (‰). A positive δ value means that the isotopic ratio of the sample is higher than that of the standard; a negative δ value means that the isotopic ratio of the sample is lower than that of the standard. For example, a $\delta^{13}C$ value of -28‰ means that the $^{13}C/^{12}C$ of the sample is 28 parts-per-thousand lower than the $^{13}C/^{12}C$ of the standard (see McCarroll and Loader 2004: 773).

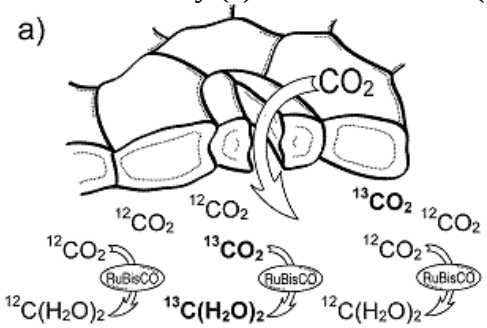
The average abundance of these two carbon stable isotopes is 98.89% for the much more naturally abundant ^{12}C, and 1.11% for ^{13}C (the molar ratio 99:1), because during photosynthesis, the heavier isotope ^{13}C is discriminated against relative to atmospheric CO_2.[144] In terrestrial plants, carbon isotopic composition varies from about -8 to -34‰, and differences in chemical and physical properties of a given sample can cause variations in this average abundance. The most significant variations derive from different magnitudes of fractionation during photosynthesis in the three types of metabolic pathways, C3, C4, and CAM.[145] Low $\delta^{13}C$ values correspond to the more ^{13}C-discriminating C3 pathway, in trees, shrubs, and temperate grasses, with a mean $\delta^{13}C$ value of -27‰. This value is proportionately less than the $\delta^{13}C$ value in the air, about -8‰.

Stable carbon isotopes record the balance between stomatal conductance – how the plant takes in air and water through pores called stomata – and a plant's photosynthetic rate, dominated at dry sites by relative humidity and soil water status, and at moist sites by summer irradiance and temperature (McCarroll and Loader 2004). C3 plants growing under reduced water availability, as in times of drought, have reduced carbon fixation from CO_2 in their

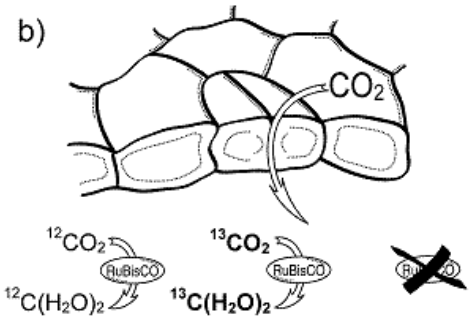
[144] Carbon also has a radioactive isotope, carbon-14 (^{14}C), and this forms the basis of radiocarbon dating.
[145] C3 plants (meaning that the first photosynthetic product contains 3 carbon atoms) are the only ones used in dendroclimatology, and most research on isotopic discrimination examines this pathway (McCarroll and Loader 2004: 775).

vegetative tissues due to stomatal closure to protect against moisture loss, which limits the assimilation of atmospheric CO_2 available for the production of the carboxylating enzyme, Rubisco, during photosynthesis (Wallace *et al.* 2013: 390). Less stomatal conductance thus cuts off the influx of CO_2 and increases the proportion of ^{13}C.[146] This change in ratios – called isotopic fractionation – is measurable either as an increase in $\delta^{13}C$ (less negative values) or a decrease in $\Delta^{13}C$ (smaller values), which represents the discrimination of ^{13}C (Wallace *et al.* 2013: 390; McCarroll and Loader 2004).

Chart 4.1. Illustration of changes in carbon stable isotope discrimination during periods of normal water availability (a) and water stress (b) (adapted from Ferrio 2005).



$\delta^{13}C$	$\Delta^{13}C$
Lower (more negative) value	Higher value



$\delta^{13}C$	$\Delta^{13}C$
Higher (less negative) value	Lower value

^{13}C discrimination during photosynthesis is complicated, however, by various forms of water input and loss (evaporation and evapotranspiration), temperature, light intensity, and even soil nutrients (Wallace *et al.* 2013: 390). Yet because of this relationship between stomatal

[146] During normal air intake, the lighter ^{12}C isotope is more easily diffused, thus discriminating against the heavier isotope ^{13}C; thus the "internal air," before being translated into sugars, is depleted in ^{13}C relative to ambient air, resulting in fractionation of -4.4‰ (McCarroll and Loader 2004: 774-5).

conductance and $\Delta^{13}C$ values, the technique of measuring stable carbon isotope composition in plant specimens from semiarid areas, such as Cyprus, offers an indirect proxy for water availability and especially precipitation, the most important environmental factor in photosynthesis in this region. As Juan Pedro Ferrio (2005: 24) cautions, however, the relationship between $\delta^{13}C$ and water availability is not linear: as water availability increases it creates a saturation trend, since the plants no longer react to stress with stomatal conductance. Studies have shown that a small amount of variation in $\Delta^{13}C$ is normal based on the complexities of water input during photosynthesis, which must be taken into account when interpreting the archaeological results (Wallace *et al.* 2013: 402). Also relevant are the differences in isotopic fractionation between various taxa, which have implications for analyzing even species with similar anatomical properties but whose habitats vary widely from lowland maquis or shrublands to highland montane forests, as well as co-occurring species (Ferrio *et al.* 2006; Aguilera *et al.* 2012). Non-climatic trends that can effect isotopic data also include juvenile "tails" in the first ca. 0-50 years, which produce lower $\delta^{13}C$ values due to the growth patterns of a tree's rapid early elongation and height gain (Gagen *et al.* 2008).

Since charcoal is a relatively ubiquitous feature of archaeological deposits, and because it is useful for obtaining dendroclimatological data for the Holocene where chronological records from preserved wood are often inadequate, carbon stable isotope composition of fossil charcoal has become an important method for establishing broad trends in Holocene water availability (Riehl *et al.* 2008; Ferrio *et al.* 2006; Ferrio 2005; Aguilera *et al.* 2012; Fiorentino *et al.* 2007).[147] There are a number of critical issues with using charcoal isotopic content as a proxy for paleoenvironmental data, however. Recent work on the effects of the fragmentation of

[147] Here, charcoal refers to any blackened plant-derived material that has been significantly altered, chemically and structurally, through heating via fire.

anatomical structure of different wood taxa point to their substantial impact on the mechanical properties of the resulting charcoal (see e.g. Chrzazvez *et al.* 2014)[148], and these variances need to be considered when evaluating isotopic data. As discussed below in the methods section, the impact of different carbonization temperatures on $\delta^{13}C$ values in charcoal also requires the calibration of results using statistical models, especially when the temperature at which the ancient charcoal was formed is unknown.

There have been several recent applications of measuring carbon stable isotope compositions in archaeological charcoal to ascertain past trends in precipitation and water availability, which both support the potentials of the technique as a proxy for paleoclimatic change as well as reveal some of the areas for improving the methodology and representation of the results. Ferrio *et al.* (2006) provide an assessment of ancient aridification in northeastern Iberia, covering a multi-millennial diachronic range, while also offering detailed analyses on the effects of carbonization on isotopic content as well as the changes in atmospheric $\delta^{13}C$ that impact paleoenvironmental reconstruction (as discussed below). Others have used this technique for samples coming from Anatolia and Syria (Riehl *et al.* 2008; Riehl 2008; Caracuto and Fiorentino 2007). Overall, these studies rely on small sample sets with rough chronological precision, and tend to interpret results in relative terms, using data to determine whether certain periods were wetter or drier in relation to others (see Wallace *et al.* 2013: 389). At this time this preliminary work follows this trend, although it includes a large number of samples with distinct regional variation, and further tests decadal changes by measuring 1-2 year ranges, with the intent to improve the absolute dating of the samples in future studies.

[148] In the case of this particular study, Chrzazvez *et al.* (2014) were interested in the impacts of fragmentation in the recovery of taxa percentages in a given population. For my purposes, these types of abundance studies are less relevant than understanding the different responses to carbon isotope fractionation between taxa, e.g. *Pinus* and *Quercus*, and between species, e.g. *Pinus brutia* and *Pinus nigra*.

Methods

Sampling strategy

As McCarroll and Loader (2004: 781) note, a careful sampling design for stable isotope analysis is necessary, as not every part of a tree or even a tree-ring records paleoenvironmental information the same way, nor do trees of different species, ecological habitats, or even elevations discriminate isotopes the same way. Unfortunately, while dendroclimatological projects with access to fresh cores of material might be able to design complete strategies, archaeological charcoal – while common in many projects – is not a material that all projects collect and store, and there are usually complications with exporting materials for international analysis. The aim in this study's collection was to gather as many pieces spread across a temporal range of at least two millennia, as well as to collect material from the transition to the 1st millennium BCE, the critical period of interest. As discussed below, a number of challenges prohibited a "complete" data set covering all ranges equally, including which projects responded to requests for material, which samples were locatable and available for study, and which ones were suitable for building isotopic records based on species, age, etc. Thus there are skews in these data toward certain species and certain periods. Nevertheless, the chronological and regional variation provides an adequate and exciting pilot study.

Approximately 200 samples of archaeological charcoal were obtained through an export license from Cyprus in the spring of 2013, representing a diachronic and regional range of material in order to incorporate the most variability (Table 1). The majority of the samples were collected through requests to directors of field projects on the island, from both active and non-active projects, while a small set was collected through in-field geomorphological sampling.[149] In

[149] The material from Zygi *Petrini* was collected from the coastal scarp using trowels during two field visits in 2013 (March and June), where a kiln is visible in cross-section, and the material was separated arbitrarily into ten plastic

addition, several samples were included from existing collections of Mediterranean material held at Cornell University.[150] As discussed in the previous chapter, many historic field projects on Cyprus did not record or save archaeobotanical material, so that the options for the sample collection were limited.[151] Nonetheless, the material comes from a range of stratified contexts: tombs (Kition *Pervolia*, Maroni *Tsaroukkas*), building material (Kalavasos *Ayios Dhimitrios*, Alassa *Paliotaverna*, Apliki *Karamallos*, Alambra *Mouttes*), potential hearths and/or kilns (Zygi *Petrini*, Amathus), and ritual deposits (Idalion, Amathus).

The collected samples constitute a dataset extending from the mid-2nd millennium BCE (Middle Bronze Age) to the mid-1st millennium CE (Late Roman). The majority of the samples cluster in three major periods: the Late Bronze Age (Apliki, Alassa, Kalavasos, Maroni), the mid-1st millennium BCE (Amathus, Idalion, Kition), and the Roman to Late Roman periods (Amathus, Zygi). Thus the earliest part of the 1st millennium BCE (e.g. 11th-9th c.) is poorly represented, except for one sample from a CG deposit at the site of Idalion. In addition, due to the feasibility of the project's funding, only four samples were sent for radiocarbon dating, while the remaining samples are dated relatively based on stratigraphic records. For this reason, some of the chronological resolution for samples remains poor, covering several centuries (e.g. Archaic = 8th-5th c. BCE). The four samples sent for radiocarbon dating were selected based on their known and secure contexts as well as key anatomical features that aid in the statistical

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bags. Samples from the coastal scarp at the LBA/IA site of Tochni *Lakkia* were also collected, although they were too small to allow for identification and not included in the present data.

[150] Specifically, the Apliki material. I thank Brita Lorentzen for her help in recovering and identifying these archived materials.

[151] Of the projects from which material was requested, the directors of six were able to find and donate samples: Antoine Hermary and Aurelie Carbillet at the French excavations at Amathus; Sophocles Hadjisavvas at Alassa; Alison South at KAD; Sabine Fourrier at Kition; Andrew Sneddon at Alambra; and Pamela Gaber at Idalion. I am indebted to them for their willingness to participate in this project and for their generosity. Unfortunately the material from the 1st millennium BCE copper production site of Ayia Varvara *Almyras* was never located in the Cyprus Museum, although I thank Walter Fasnacht for his patience and help in trying to find them.

modeling of their results (i.e. bark). Despite the limitations of this initial study, and the problems with diluting climatic change to only "wet" or "dry" (Rosen and Rosen 2001), the data provide a reasonable diachronic range of relative changes in water availability.

Equally as important as gathering samples that covered this diachronic range was their regional variation, and an additional aim was to include material that extended from coastal to inland higher-elevation landscapes in order to document potential changes in discrimination relative to altitude (Fig. 4). The samples offer an important contribution to the study of carbon stable isotope composition variation in these different bioclimatic parts of the island. Several samples originate from immediate coastal environments (Amathus, Kition, Maroni *Tsaroukkas*, Zygi *Petrini*), while others represent inland foothills landscapes (Kalavasos *Ayios Dhimitrios*, Idalion, Alassa *Paliotaverna*, Alambra *Mouttes*). Apliki, in particular, provides information from a copper-producing site in the high northern foothills of the Troodos mountain range. Importantly, most of the samples cluster in the study region, the Vasilikos and Maroni valleys (Kalavasos *Ayios Dhimitrios*, Maroni *Tsaroukkas*, Zygi *Petrini*), providing a potentially robust regional climatic signal. In addition, samples were selected from three of the known excavated 1st millennium BCE sites (Idalion, Amathus, Kition), which provide a relative idea of urban wood strategies for the polities; caution must be used, however, to avoid extrapolating assumptions of local vegetation cover from these isolated and anthropogenically chosen materials, which might have been selected for cultural and/or symbolic reasons (e.g. the material from tombs and ritual deposits).

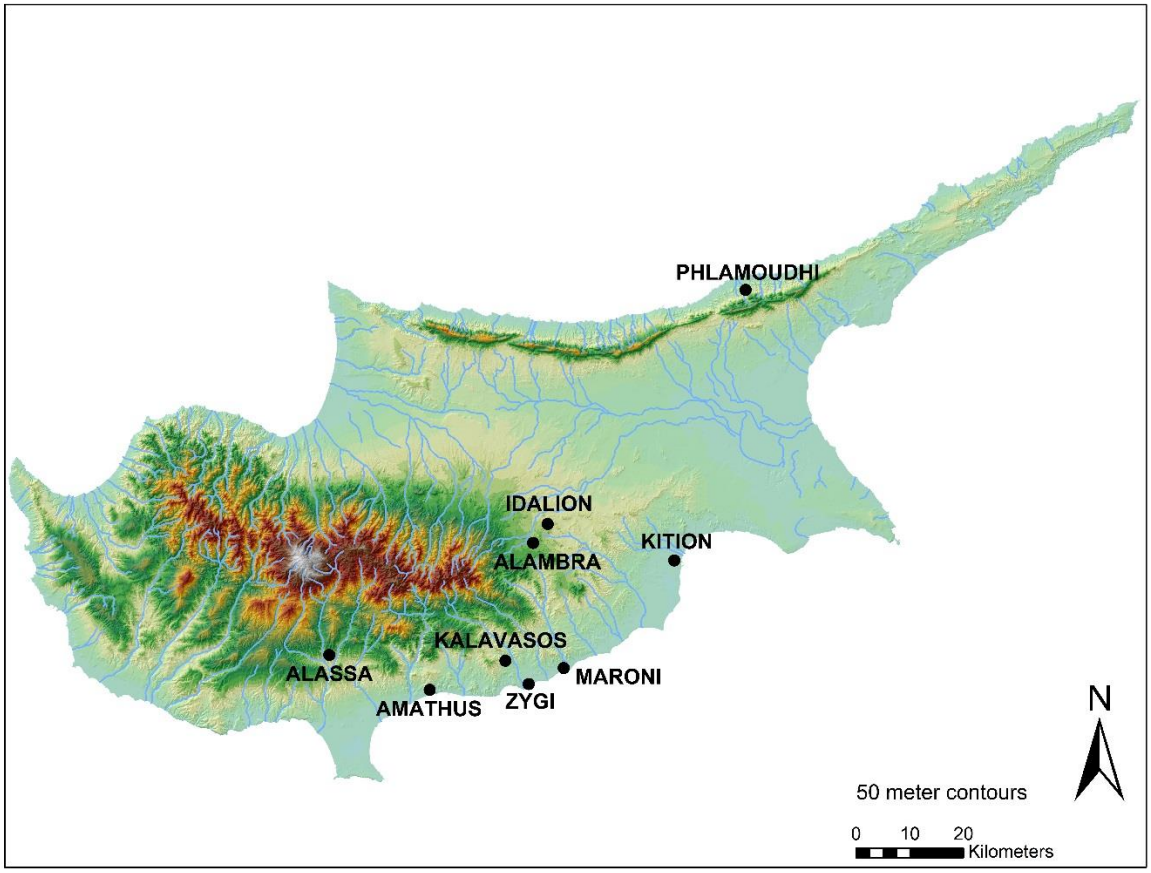


Fig. 4.4. Map of sites providing charcoal for this study. Created in ArcGIS 10.0 with data provided by the Geological Survey Department.

Table 4.1. Charcoal data derived from archaeological sites on Cyprus, catalogued by site, species, number of samples, chronological period and corresponding date range, and archaeological context.

Site Name	**Species**	**No. of samples**	**Chronological period**	**Date Range (approx.)**	**Context**
Alambra *Mouttes*	*Olea eur.*	2	MC III	1750-1650 BCE	Room debris
Maroni *Tsaroukkas*	*Olea eur.*	2	LC IIA/LC IIB	1500-1350 BCE	Tomb
Kalavasos Ayios *Dhimitrios*	*Pinus sp.*	76	LC IIB/LC IIC	1400-1300 BCE	Roof debris; Pithos hall
Alassa *Paliotaverna*	*Olea eur.*	1	LC IIIA	1200-1050 BCE	Room and pit deposits
	Pinus sp.	3	LC IIC	1340-1200 BCE	Room and pit deposits
	Pinus sp.	3	LC IIIA	1200-1050 BCE	Room and pit deposits
Apliki *Karamallos*	*Pinus sp.*	11	LC IIC/LC IIIA	1350-1250 BCE	Room debris

Apliki *Karamallos*	*Pistacia ter.*	1	LC IIC/LC IIIA	1350-1250 BCE	Room debris
Idalion	*Quercus sp.*	1	Cypro-Geometric	1050-800 BCE	Pit deposit
	Quercus sp.	16	Cypro-Classical	500-300 BCE	Pit deposit
	Pistacia ter.	5	Cypro-Classical	500-300 BCE	Pit deposit
Amathus	*Quercus sp.*	4	Cypro-Archaic	800-500 BCE	Pit deposit, floor debris
	Pinus sp.	12	Cypro-Archaic	800-500 BCE	Pit deposit, floor debris
	Olea eur.	1	Cypro-Archaic	800-500 BCE	Pit deposit, floor debris
	Pistacia ter.	2	Hellenistic	300-30 BCE	Destruction layer
	Quercus sp.	6	Hellenistic	300-30 BCE	Destruction layer
	Olea eur.	5	Hellenistic	300-30 BCE	Destruction layer
	Pinus sp.	11	Roman	30 BCE-CE 200	Room debris
	Quercus sp.	5	Roman	30 BCE-CE 200	Room debris
Kition *Pervolia*	*Olea eur.*	7	Cypro-Classical	500-400 BCE	Tomb
Zygi *Petrini*	*Pinus sp.*	68	Late Roman	CE 200-400	Kiln feature

Identification

The taxa of the samples were identified using reflected (incidental) light microscopes in the Malcolm Weiner Laboratory of Aegean Dendrochronology at Cornell, at 6x – 50x magnification. The taxonomical determinations were based on the anatomical properties of the wood, using the transverse, radial and tangential cross-sections, and utilizing references to wood anatomy of European and eastern Mediterranean species (Schweingrüber 1990; Akkemik and Yaman 2012; Crivellaro and Schweingrüber 2013).[152] The samples were then photographed and every sample was given a unique identifying number. In some cases, very small fragments (< 2-5 mm) from a single context were not separated as individual samples and were not included in the

[152] For a summary of identification methods and references, see Dolby 2008: 452 ff.

isotopic analysis. The rings were counted on all of the *Pinus sp*. samples, as well as when applicable in other taxa.

The samples collected from Cyprus represent a normal range of mostly low-elevation taxa, endemic to the island (Chart 1). The vast majority of samples were *Pinus sp.*, and most likely *Pinus brutia* Ten., "Cyprus" or "Calabrian" pine. This evergreen tree is indigenous to Cyprus (as well as Italy, Greece, Turkey, and western Syria) and is the dominant forest species of the island, occurring throughout the Troodos and Pentadaktylos mountain ranges, from the coast up to 1400 m asl (Tsintides *et al.* 2002: 77; Crivellaro and Schweingrüber 2013: 68-69). *P. brutia* is distinguished by the pitting of the end walls of ray parenchyma cells, and a cupressoid to taxodioid cross-field pitting. The other species of pine present in the sample collection was *Pinus nigra* ("black pine"), also indigenous to Cyprus (as well as Turkey and the Caucasus) on the highest slopes of the Troodos range, at an altitude of 1100-1900 m asl (Tsintides *et al.* 2002: 79). The end walls of ray parenchyma cells are smooth in *P. nigra*, and it has fenestriform ("window-like") cross-field pitting (Crivellaro and Schweingrüber 2013: 72-73). Since too much time would have been needed to determine whether each pine sample was *P. brutia* or *P. nigra*, so most of the samples (that were not identified using SEM) are listed as *Pinus sp*.

A number of evergreen oak samples were identified from the sites of Amathus and Idalion, but as it is difficult to tell evergreen species apart, their exact taxa are not clear. There are two main indigenous evergreen oak species on Cyprus. *Quercus coccifera* L. subsp. *calliprinos* Holmboe, or "holly oak," is a drought-resistant shrub or small tree (up to 10 m) found mostly in maquis and pine forests in the Troodos range and in the Akamas peninsula, growing on calcareous geological substrate up to 1300 m asl (Crivellaro and Schweingrüber 2013: 320-321). The very common *Quercus alnifolia*, "golden oak," is also an endemic shrub or small tree (up to

10 m) growing between 300-1700 m asl. on the ultrabasic soils in the Troodos (Tsintides *et al.* 2002: 115-117; Neophytou *et al.* 2007). Oak (*Quercus*) species tend to be good for understanding precipitation in central Europe and not the Mediterranean (Büntgen *et al.* 2011).

Olea europaea, olive, formed another small group of samples from the sites of Alambra, Alassa, Amathus, Maroni and Kition. Native to Cyprus, olive trees have formed an important part of the island's economy since earliest prehistory, and are widely cultivated today up to 1000 m asl. (Tsintides *et al.* 2002: 326-7; Crivellaro and Schweingrüber 2013: 434-5). *Olea eur*. has indistinct growth rings, making it hard to estimate ring counts for a given sample. Few carbon stable isotopic analyses have investigated *Olea eur*. in relation to paleoclimate; most isotopic studies on ancient *Olea eur*. focus on traces of olive oil composition. A smaller percentage of the charcoal samples were identified as *Pistacia terebinthus* L., terebinth, from the sites of Apliki, Amathus and Idalion. Terebinth, also indigenous to Cyprus, is a small deciduous tree or shrub common on rocky mountainsides and in pine maquis and forests in the Troodos range, up to 1500 m asl. (Tsintides *et al.* 2002: 257). 5 pieces of *Anagyris foetida*, "stinking bean trefoil," were found from one context in Building X at Kalavasos *Ayios Dhimitrios*, near the entrance to the building, but were not included in the isotopic study. The stinking bean, a deciduous shrub with characteristically odorous flowers, is also native to Cyprus and grows mostly in low-elevation maquis up to 1200 m asl. (Crivellaro and Schweingrüber 2013: 288-289).

Additional samples from the Early Bronze Age site of Tell Leilan in northern Syria, identified by Dr. Brita Lorentzen, were included in the analysis to provide variation in terms of eastern Mediterranean micro-climates as well as chronological variation (for Tell Leilan see e.g. Weiss *et al*. 2012; Ristvet and Weiss 2000; Weiss and Bradley 2001). 12 samples were taken from contexts that included both oak (*Quercus cerris*) from arid forest environments, and ash

(*Fraxinus sp.*), plane (*Platanus orientalis*), and willow/poplar (*Salicaceae sp.*) from riparian environments, to create a cross-comparison of different bioclimatic zones around the site.

As noted above, it is probable that low-elevation and high-elevation taxa of the same species may differ in their isotopic fractionation. In order to discern samples of the two local pine species *P. brutia* and *P. nigra*, and to understand their potentially distinct isotopic signatures, select examples were chosen for further identification using a scanning electron microscope (Mira TESCAN), for increased resolution (e.g. <100 μm), by myself and Brita Lorentzen. Because SEM is still a very costly analysis, not every sample of *Pinus sp*. could be determined. The SEM provides a three-dimensional quality from a very wide depth of field, which aids in examining the identifying features of wood, namely the rays and pits of *Pinus* taxa (Pearsall 2000: 170-1). The radial section provides the best evidence for variation in ray arrangement between the two *Pinus* species on Cyprus, *brutia* and *nigra*. To prepare the samples for SEM analysis, the radial section was fractured using a double-edged razor blade to achieve a clean break and then placed on an aluminum mounted stub using double-sided carbon stickers. The samples were then sputter-coated with gold-palladium coating to control charging in the SEM using a Desk II coater. The samples selected for identification were mostly *P. brutia*, the lowland variety of pine (Fig. 5), while a few samples from Alassa *Paliotaverna* were *P. nigra* (Fig. 6), the high elevation species. The overwhelming identification of lowland pine, however, suggests that most if not all of the *Pinus sp*. samples from the coastal regions, such as Kalavasos and Zygi, are likely the lowland variety.

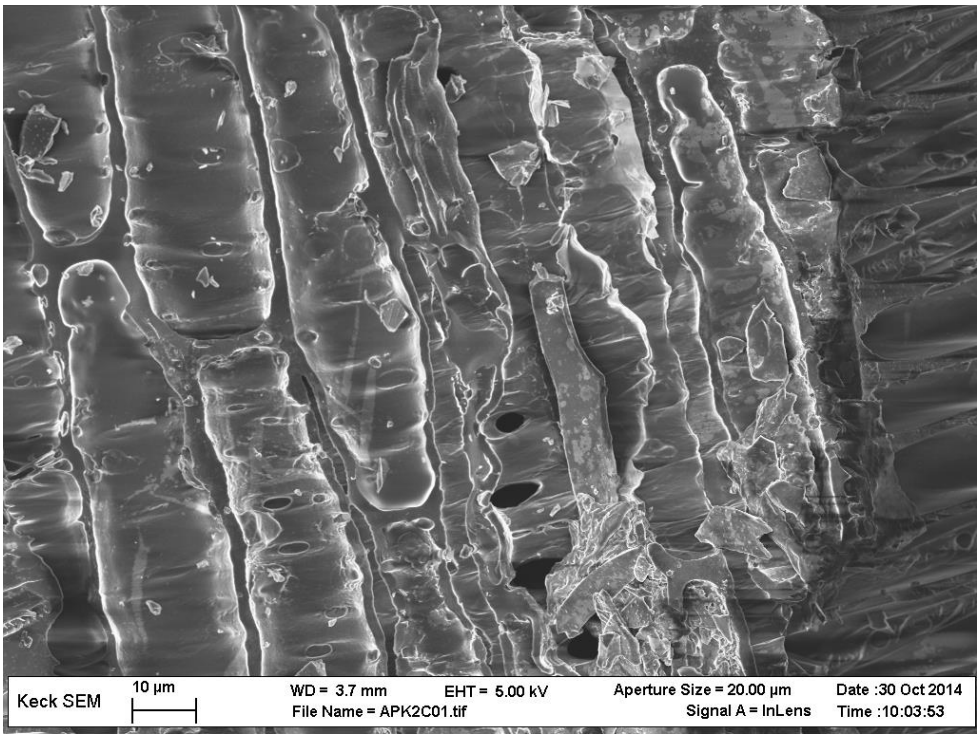


Fig. 4.5. Example of *P. brutia* identification using SEM (photo courtesy of B. Lorentzen).

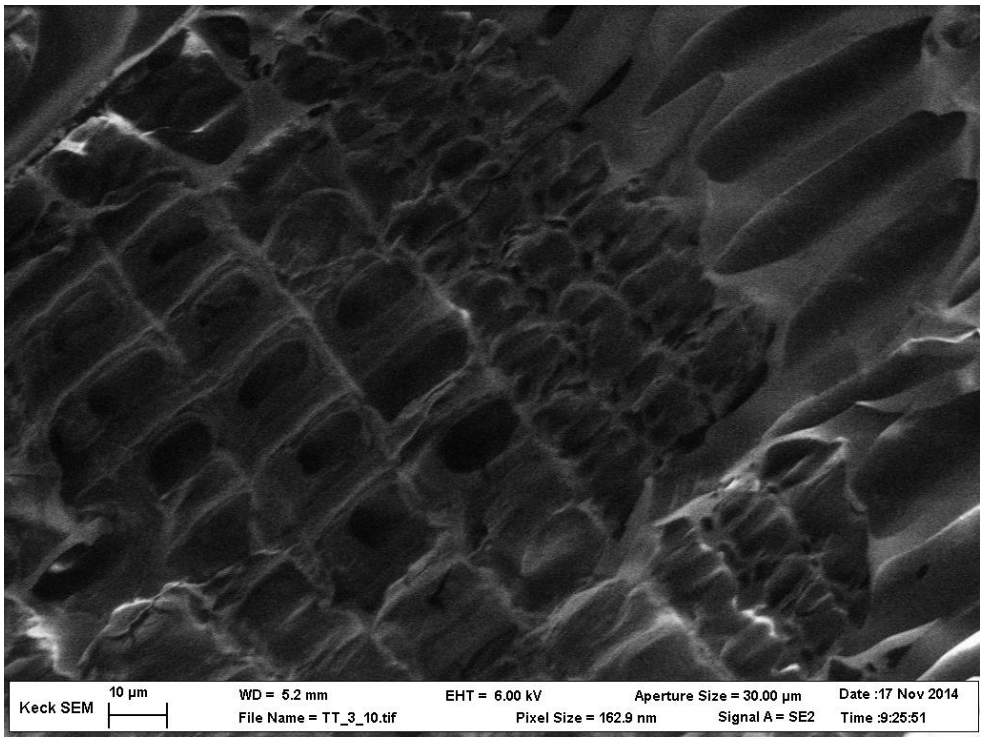
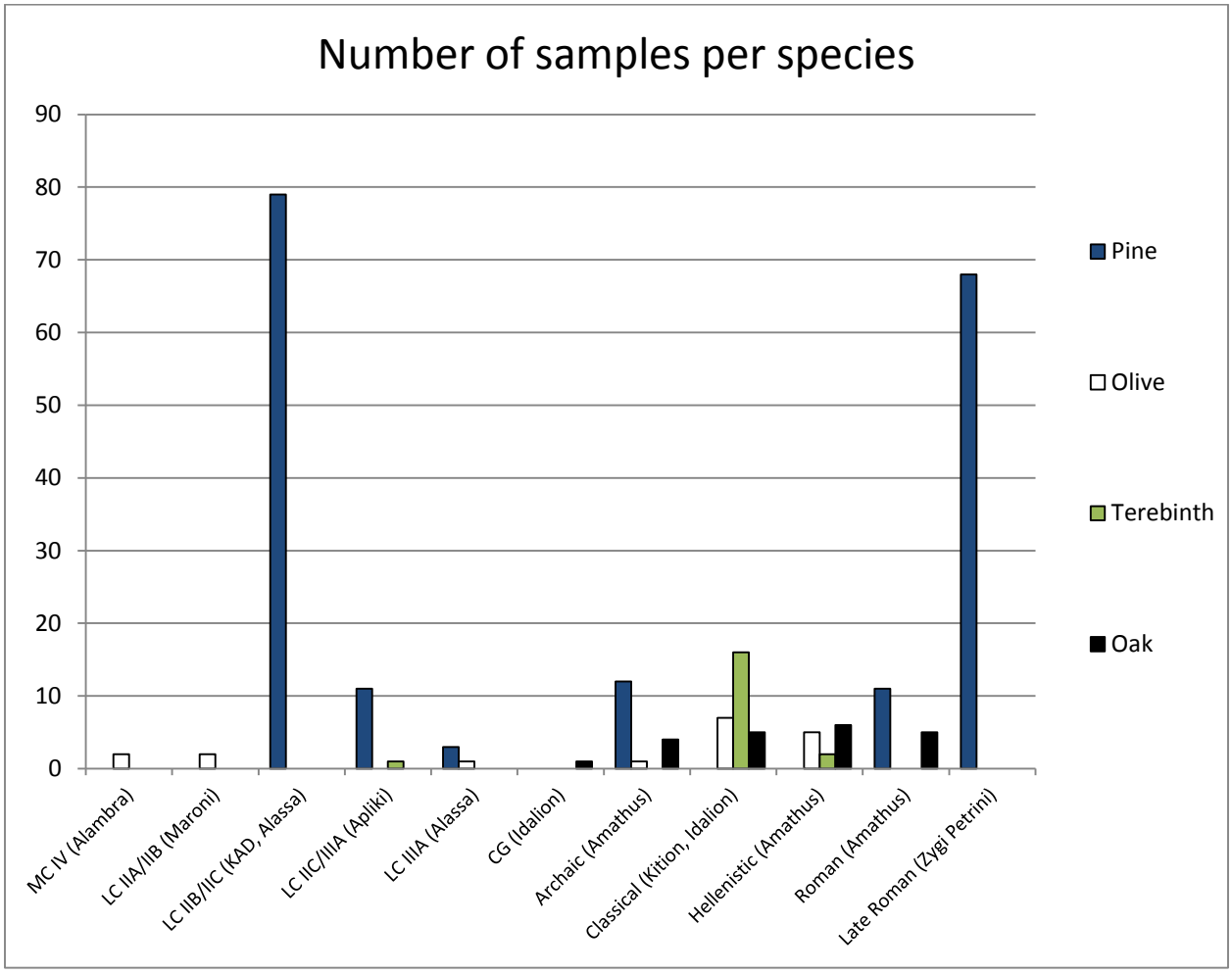


Fig. 4.6. Example of *P. nigra* identification using SEM (photo courtesy of B. Lorentzen).

Chart 4.2. Species distributions by sites and by period.



Procedure

The samples were first collated according to site and then taxa, and separated into batches[153] to prepare them for analysis in a Finnigan MAT Delta Plus isotope ratio mass spectrometer (IRMS), plumbed to a Carlo Erba NC2500 elemental analyzer, at the Cornell Isotope Laboratory (COIL), under the direction of Dr. Kim Sparks.[154] To prepare the samples

[153] Thus all *Pinus sp*. were analyzed in three separate batches of 70 samples each, while one batch included the *Olea, Pistacia, Quercus sp., Salicaceae*, *Platanus orientalis* and *Fraxinus sp*. Because these latter taxa share similar environments, it was considered inconsequential to run them as one single batch.

[154] The IRMS uses an aliquot of sample gas (once it has been combusted from the original sample) and ionizes it, which turns it into charged particles which are variously received in Faraday Cup detectors depending on mass;

for analysis, each one was first sectioned using a double-edge razor blade to remove any noticeable carbonate crust as well as to section a piece along ring boundaries when possible. Removing carbonate crusts avoids potential shifts in the $\delta^{13}C$ as well as helps to achieve a proper determination of the charcoal's percentage of carbon, %C (Ferrio *et al.* 2006: 1257). For the *Pinus sp*. samples, a sectioning strategy was implemented to analyze changes in isotopic composition at the sub-decadal level (e.g. 2-9 years) to try and establish if non-climate trends were observable. So, for example, if a sample had 20 rings, 3-5 sections were produced, each one given its own unique identifying number and analyzed separately (e.g. rings 1-5, 6-10, 11-15, 16-20, moving from the innermost ring to the outermost). In some cases the rings were so tightly sequenced that this sort of decadal sectioning was impossible, and groups of 15-20 rings were included in one sample.

The samples were then each ground using a Fisherbrand porcelain mortar (50 mL) and pestle (114 mm), creating a milled powder which was then placed inside Eppendorf 2.0 mL safe-lock tubes (polypropylene LoBind), and then submerged for 24 hours in 0.5 M HCl to remove any existing carbonates.[155] The mortar and pestle was cleaned with ethanol between each sample to avoid contamination. After the samples were pH tested to make sure the carbonates were removed, the samples baked for 24 hours at 50°F and were re-ground to load into tin capsules, which ensure proper combustion in the elemental analyzer. A Sartorius MC5 microbalance was used to weigh the samples at 2.0 +/- 0.1 mg. In order to test the precision of the IRMS, several samples were measured and run repeatedly (10 times) to gauge the standard error, with an average of 0.039‰.

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these detectors are compared with the results of standards of known isotopic composition to create the ratio; see McCarroll and Loader 2004 for more discussion. The COIL IRMS is interfaced with an elemental analyzer, allowing a continuous flow procedure.

[155] "Submersion" refers to covering the ground powder with HCl, at least a half a cm. over the top of the material.

Equations

As noted above, several non-climatic trends can affect carbon stable isotope data, and there are various data treatments and statistical analyses available for modeling these trends and removing anomalous values. One problem relates to the global reduction of $\delta^{13}C$ in the atmosphere since the beginning of industrialization in the 19th c. To calibrate data against this trend, scholars can either remove it mathematically, or express isotope ratios in terms of discrimination against $\delta^{13}C$, $\Delta^{13}C$, rather than the data simply computed against the standard (McCarroll and Loader 2004: 787). Carbon isotope discrimination ($\Delta^{13}C$) is calculated from Farquhar *et al.* (1989) as:

$$\mathbf{\Delta^{13}C_{plant} = (\delta^{13}C_{air} - \delta^{13}C_{plant}) / [1 + (\delta^{13}C_{plant}/1000)]}$$

where $\delta^{13}C_{air}$ and $\delta^{13}C_{plant}$ refer to air and plant composition, respectively. Essentially, the equation reflects the amount in which the heavier isotope is discriminated against the lighter isotope during the synthesis of the plant organic matter. To account for changes in $\delta^{13}C_{air}$ during the Holocene and since industrialization, $\delta^{13}C_{air}$ for the archaeological samples was inferred by interpolating data from Antarctic ice-core records, together with modern data from Antarctic stations, to estimate annual values of the $\delta^{13}C$ of the atmosphere (McCarroll and Loader 2004: 787). A smoothed $\delta^{13}C$ curve of atmospheric CO_2 from 16100 BCE to the present was used, derived from Ferrio *et al.* 2006.[156] According to this model the estimated $\delta^{13}C_{air}$ for the Cypriot archaeological samples, ca. 1700 BCE to CE 600, ranged from -6.52 to -6.37‰ (Table 2).

[156] Available at http://web.udl.es/usuaris/x3845331/AIRCO2_LOESS.xls

Table 4.2. Values for computing $\Delta^{13}C$ for chronological periods of charcoal samples.

Period	**$\Delta^{13}C_{air}$ value (‰)**
Middle Cypriot, ca. 1750-1650 BCE	-6.37
Late Cypriot IIA/B, ca. 1500-1300 BCE	-6.47
Late Cypriot IIC/IIIA, ca. 1350-1200 BCE	-6.5
Geometric, ca. 1100-750 BCE	-6.52
Archaic, ca. 750-500 BCE	-6.52
Classical, ca. 500-330 BCE	-6.49
Hellenistic, ca. 330-30 BCE	-6.45
Roman, ca. 30 BCE-CE 200	-6.41
Late Roman, ca. CE 200-400	-6.37

Results and Discussion

The preliminary data from the carbon stable isotope analysis suggest certain trends in past water availability on Cyprus and support other proxy records for a shift to wetter conditions by the 8^{th}-7^{th} centuries BCE in the east Mediterranean. Figure 7 shows the average $\Delta^{13}C$ values for periods from all sites, coded according to each of the species analyzed, and their standard deviations. When plotted, the variations in carbon stable isotope discrimination for the different species show peaks and troughs in a number of periods that correspond well to what we know of solar activity, as seen in the proxy of the radiocarbon calibration curve (Fig. 3). In addition, these peaks are replicated across species, suggesting a more convincing oscillation of long-term climatic conditions than the function of taxonomic discrimination in isotopes. The standard deviations for these data are high, and raise important questions about possible non-climatic trends skewing the isotopic discrimination, particularly juvenile tails (Gagen *et al*. 2008). Especially for the Late Roman coastal kiln site at Zygi *Petrini*, which produced a number of charcoal samples showing pith (and therefore within the first few decades of life), the probability of lower $\delta^{13}C$ values must be considered a factor.

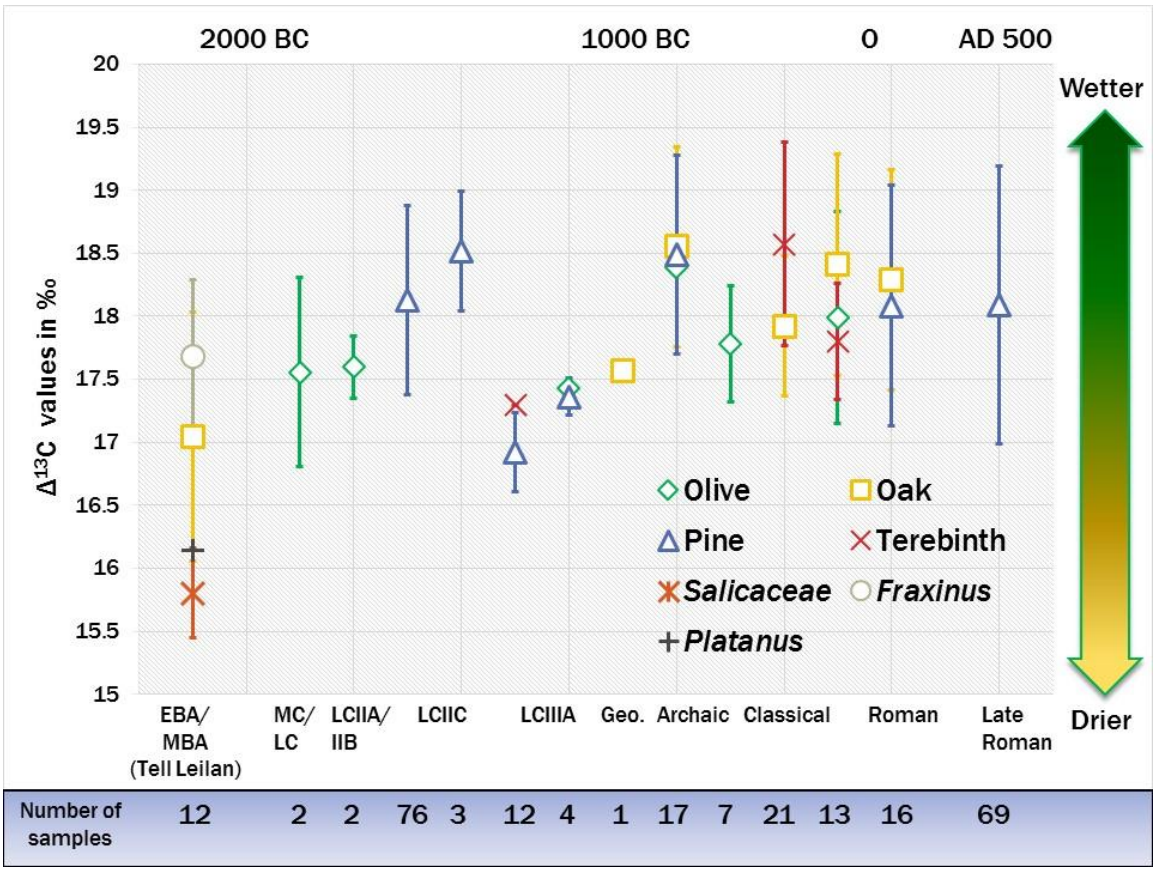


Fig. 4.7. Graph of results from carbon stable isotope analysis, coded according to species (*Pinus sp., Quercus sp., Olea eur., Pistacia ter.*) and period and showing standard deviation. Precision 0.029-0.05‰

The most substantial data so far belong to the trends for *Pinus sp*., which extend from the later Middle Bronze Age, at the inland site of Alambra, to the Late Roman period at the coastal site of Zygi *Petrini* (Fig. 8). Due to the abundance of material, there are clear differences between the end of the 2nd millennium and the CA period, represented by the site of Amathus on the southern coast. The values for the Late Cypriot period at Kalavasos *Ayios Dhimitrios* and Alassa *Paliotaverna*, for example, likely indicate moister conditions in the 14th-13th c. BCE. By the LC IIIA period, as seen in a second phase at Alassa and at the inland copper-producing site of Apliki *Karamallos*, the values have significantly dropped, reflecting the consensus for increasingly drier and likely cooling conditions by the later 12th c. BCE around the

Mediterranean. Some of the samples from these sites are the highland pine species, *P. nigra*, and may reflect more of a discrimination between species towards cooling than a general climatic trend, and more work is needed to investigate these issues. In addition, the piece of *Quercus sp.* from a likely late CG context at Idalion has a very low $\Delta^{13}C$ value, reinforcing the likely drop in water availability preceding the 8th c. BCE, yet representing only a single sample for the period between the 11th and 8th c. BCE.

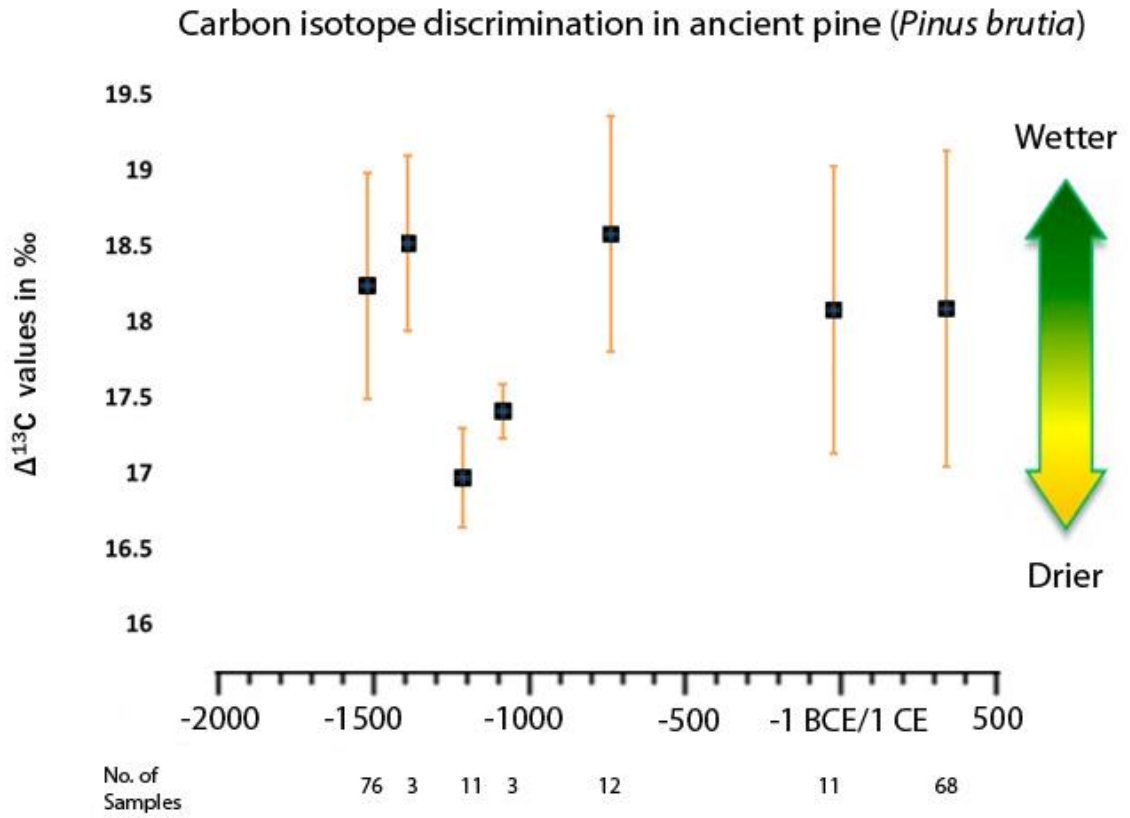


Fig. 4.8. Results from *P. brutia* samples (184). Precision 0.029-0.05‰.

By the CA period, both *Pinus sp.* and *Quercus sp*. values are at their highest in the datasets, indicating more water availability for these lowland pine trees in the 8th-6th c. BCE. A similar trend is apparent in the *Olea eur*. data as well, with lower LC IIIA $\Delta^{13}C$ values and higher CA ones. And, towards the later 1st millennium BCE and into the Roman period, the data

suggest a levelling out of $\Delta^{13}C$ values, consistent with the proxy for a relatively stable period of solar activity. Due to the paucity of samples for the Hellenistic period, it is unclear whether evidence from Cyprus may reveal the solar minimum dated ca. mid-4th c. BCE, although the *Quercus sp*. and *Olea eur*. data do show slightly higher $\Delta^{13}C$ values, suggesting possibly moister conditions.

How do these data compare to other proxies to create a more regional picture? Due to the imprecision of the dating for many of these samples, it is currently difficult to contrast these data with other published records that have absolute chronologies based on systematic sequencing. The CA period samples, for example, fall between the 8th and late 6th c. BCE, prohibiting the sort of timescale analysis for the effects of solar forcing as seen elsewhere (e.g. Plunkett and Swindles 2008). Nevertheless, the data pair well with the broader trends in early 1st millennium BCE climate from other parts of the eastern Mediterranean. Girolamo Fiorentino *et al.* (2007) for example note a shift toward more humid conditions ca. 2600-2500 BCE in samples from Ebla, in Syria, which also roughly coincides with the speleothem records from Soreq Cave in Israel showing more moisture ca. 2600 BCE (Bar-Matthews *et al.* 1998; Issar 2003). As part of this study, samples from the Iron Age site of Tell Tayinat in Turkey were processed and analyzed, and their upcoming results will provide an important comparison with which to measure the Cypriot record.[157]

Conclusion

While this pilot charcoal study is on-going and requires significant work in terms of chronological precision and statistical modeling, it constitutes a vital step in the creation of a

[157] These samples are part of the CRANE (Computational Research on the Ancient Near East) Project, directed by Timothy Harrison, with coordination of climatic research by Sturt Manning and Brita Lorentzen.

paleoclimatic record for Cyprus, using a relatively accessible, low-cost method that has proven successful for measuring broad, century-scale shifts in water availability during plant growth (Wallace *et al*. 2013: 403). The paleoclimatic evidence indicates that at least by the 7th c. BCE, the coastal lowlands around Amathus had a wetter climatic context, with presumably more reliable winter rainfall and consistent growing seasons, which may have allowed for the instigation of landscape activity.

The different isotopic discriminations between lowland and highland pine species on Cyprus, and the more precise absolute dating of several of the archaeological samples, merit further consideration. The abandonment or partial destruction of many Late Bronze Age centers that precipitated the transformation of geopolitical organization on Cyprus, for example, has traditionally been dated to ca. 1200 BCE. The analysis of pieces of *P. brutia* from the important Late Bronze Age site of Kalavasos *Ayios Dhimitrios*, however, reveals that the fire that presumably destroyed the site's monumental administrative halls occurred roughly a century earlier. This revised chronology would raise important questions about the perhaps earlier development of complex, heterarchical political forms with impressive built environments in the Late Cypriot IIA/B period on Cyprus.

This paleoclimatic proxy of wetter growing conditions on Cyprus is exciting, and provides the groundwork for new, more robust studies of the island's ancient environments. Yet it can only suggest at the macroscale what may have been changing in terms of local landscape practices. That is to say, we need more information to examine how this coarse-grained picture of wetter conditions might have translated into more favorable ones, and then question for whom they were favorable. To move beyond this sketch of wet vs dry, I went into the field in order to assess archaeological survey data and to gain closer perspective on Iron Age landscape creations.

The next two chapters focus on the archaeological record to come at the nexus of human-environment relationships from the opposite angle.

Chapter 5

Chasing the early 1st millennium BCE Cypriot countryside: a retrospective archaeological survey

"What is especially promising about such regionally-based comparative research is the likelihood that it can shed significant new light on archaeological or historical problems that have hitherto been tackled only with piecemeal data. In Cyprus, for instance, such problems might include the processes of geopolitical transformation that resulted in the known kingdoms of Cyprus in the Cypro-Archaic period." (Cherry 2004: 30)

As I argued in **chapter 2**, notions of urban kings coupled with epigraphic cartographies have traditionally governed the study of the landscape transformations of the 1st millennium BCE on Cyprus. Due to a perceived gap in the material record for the 11th to 9th c. BCE, we have consistently searched the few excavated city centers and their tombs and temples for evidence of the period's new regimes, at the expense of attending to the surrounding countryside. As John Cherry notes in the quote above, comparative survey data can shed light on non-urban place-making that accompanied and supported the development of polities on Cyprus during the 1st millennium BCE. This chapter takes up his challenge, presenting the methods, results, and interpretations of comparative regional (re)survey in the Vasilikos and Maroni valleys, and distinguishing patterns in practice and social order. Rather than attempt to map the impact of the kingdom of Amathus on this assumed periphery, these spatial and material analyses of site location, interaction, and continuity examine moves in local landscape that contributed to a novel politics. The chapter further asserts that multiple survey datasets can begin to illuminate the construction of this region in the absence (or anticipation) of excavated sites or detailed local history.

Archaeological survey in the Mediterranean, encompassing pedestrian field walking as well as geophysical and remote sensing methods (Keller and Rupp 1983a), has transformed over the past two centuries, from its origins in the traditions of 18th c. antiquarian prospection to its

current standing as a major systematic methodology, often performed in lieu of excavation (Cherry 1983: 378-84; e.g. Manning *et al.* 2014; Barker *et al.* 1995; Cherry *et al.* 1991; Watrous *et al.* 2004).[158] Likened to "frogs around a pond" (Cherry 1983), the various systematic surveys undertaken since the 1970s are remarkable as much for their increasing intensity and sophistication as for their disparate aims, methods, and conclusions. Despite the consistent and widespread use of survey to investigate landscape and settlement patterns, synthetic regional analysis that rounds up these myriad frogs has been a much slower development (Alcock and Cherry 2004b: 4). Indeed, it took roughly three decades after the "new wave" of systematic (and self-reflexive) archaeological survey (Alcock *et al.* 1994: 137) before Susan Alcock and Cherry (2004a) issued their call for more "side-by-side" investigations.

The challenges of archaeological survey are notorious and well-known, stemming from the principle doubt that we can be sure of any sort of representation of past human activity from surface remains (see among others Terrenato and Ammerman 1996; Bevan and Conolly 2013; Mattingly 2011; Pettegrew 2001; Cherry 1983). Each project uses its own collecting, recording, and cataloguing methods for sampling: transects or blocks, total collect or only diagnostics, site-based or distributional ("off-site," "site-less"; Alcock *et al.* 1994: 137-8). All of these constraints make comparative research daunting (Cherry *et al.* 1991: 34; Alcock and Cherry 2004b: 5).[159] Yet, taking the position that survey can be an appropriate avenue for exploring settlement patterns and landscape practices at a community or regional scale (cf. Hope Simpson 1984: 115), survey's benefits as a methodology well-suited for spatial analyses can surmount

[158] Underwater survey is an equally important development for archaeological investigations of coastal and maritime activity and includes geophysical and noninvasive methods; for Cyprus see e.g. Leidwanger 2005, and ch. 5 n. 220 on work by Sewell and Andreou.

[159] Alcock and Cherry (2004: 6) argue, however, that a manual of standard survey practice should not exist given the geographic and material variety of the interested areas; only that explicit explanation – and *availability* - of each project's aims and methods be imperative (see also Keller and Rupp 1983b: 3).

many of these obstacles (Alcock *et al.* 1994; Cherry 1983: 388; Khatchadourian 2008: 345-6). This chapter investigates one region using several decades of archaeological survey data and employing various methods of "source criticism" (Alcock 1993: 49-53; Pettegrew 2007: 749).

Given the problems of the data, the aim here is not to find the "invisible" residues of 11th-9th c. BCE practice in the material record (for such a case in Greece cf. Stissi 2011). For many scholars, the apparent absence of rural settlements and a corresponding agricultural economy for the CG period has largely reflected an island-wide response to the end of the Late Bronze Age and the withdrawal of populations into the surviving urban centers (Palaepaphos and Kition, e.g. Iacovou 1994: 151).[160] This chapter forwards, by contrast, a more nuanced model of the dramatic landscape changes occurring around the mid-8th c. BCE, which created a landscape "signature" characterized by emerging sedentism and sustainable interrelationships between communities and their surroundings (Wilkinson 2003: 11; Alizadeh and Ur 2007; Lelièvre 2012). "Chasing" the fugitive Iron Age via survey results therefore requires spatial and material synthesis (*sensu* Pettegrew 2001; Bintliff *et al.* 1999).

For this case study, I employed "front to back" re-survey as a way to examine these changes, akin to the model set out by Stephen Thompson (2004) in his own re-survey of the Metaponto region in southern Italy. This method entails the return to a region previously surveyed, often decades earlier, to distinguish modifications in assemblage as well as visibility and surface composition (see also Diacopoulos 2004; Ammerman *et al.* 2013; Wilkinson *et al.* 2004: 190). Archaeological surveyors have noted the value of returning to previously-surveyed regions for self-referential analysis, in order to confront issues of visibility and stochastic surface

[160] Coldstream (2012: 13) indeed also asked a similar question for Amathus, noting that after the desertion of KAD and Maroni in the late 13th/early 12th c. BCE, "there would have been four or five generations of indigenous people who must have had homes somewhere in the neighborhood, homes that still await discovery."

change (random noise), since the 1980s (e.g. Cherry 1983; Stanley Price 1983; Keller and Rupp 1983c: 32-33). Todd's work with the VVP could be considered a longitudinal study, as he consistently returned to revisit some sites in the valley, updating their descriptions. When confronted with gaps in publication records, contemporary visits to fields and landscapes can also provide much needed re-assessment. Albert Ammerman *et al.* (2013), for example, instituted a formal "longitudinal" re-survey of their project, and their findings suggest that "windows of visibility" – the intermittent appearance of materials relative to factors such as plowing and climate – effect the ability of surveys to gain a representative sample of diachronic artifact assemblages (see also Barker 1981; Bintliff and Snodgrass 1985). When data of previous survey projects are accessible for study, re-analysis can offer important new interpretations using updated (digital) techniques and methods (see Diacopoulos 2004).

Part one of this chapter thus presents such a "retrospective" survey that builds upon earlier regionally-based projects to re-orient our understanding of already-known (yet understudied) assemblages. The second part confronts the problems of comparative regional survey via the juxtaposition of two previous projects in the region and proposes a rough demographic scheme for the Vasilikos and Maroni Valleys. I hypothesize a shift in the early 1st millennium BCE to a new *habitus* of permanence, and define three broad indices of landscape practice that guide the subsequent analysis: 1) the locational siting of early 1st millennium BCE places in relation to features such as water and slope, 2) the interaction between sites and their possible aggregation into communities, and 3) their continuity through time, in relation to earlier occupations. A short methodology section follows, which outlines the study of previously found and archived survey assemblages and my small-scale re-survey of targeted areas, before turning to macroscalar interpretations of trends in the data. These (dis)alignments of survey evidence,

when combined with the paleoenvironmental record created in **chapter 4**, provide the framework for detailed multiscalar syntheses of political landscapes in **chapter 6**.

Carobs and olives: comparing survey and re-survey in south-central Cyprus

The Vasilikos Valley Project (VVP), directed by Ian Todd through Brandeis University, was conducted mostly between 1976 and 1981, with continued visits to parts of the valley throughout the 1980s and 1990s. Todd's main interests were the economy and settlement patterns of density and continuity, especially during the prehistoric occupation of the valley (Todd *VVP* 9: 19-20). The project began, in a first extensive phase, with a mostly intuitive survey directed at prominent topographical features. The methods aimed to identify the *site* from its surrounding background noise: material was recorded in its immediate cadastral plot and associated with a toponym, and efforts were made to circumscribe the area of the site through the extent of surface scatter (Todd *VVP* 12: 4). Based upon the density of the finds, and the nature of their deposition, Todd hypothesized site function in relation to a broad typology of settlement, cemetery, industrial or agricultural processing site, or sanctuary. Evidence of oil presses indicated for example the working area of a settlement, and several of the sites were noted as having open-ended multifunctional designations. Importantly, Todd recorded all potential periods of occupation at a site, even if some were only represented by a single sherd, although issues of manuring and erosion, for example, make some of these single-sherd occupations considerably less convincing.

After recognizing that this intuitive survey method had not covered much of the lower valley and its side drainages, a more intensive and systematic second phase began in 1979 and

eventually included 19 transects running E-W across the Vasilikos River, 100 m wide and spaced at 400 m intervals (Todd *VVP* 12: 20; Johnson and Hordynsky 1982; Fig. 1).

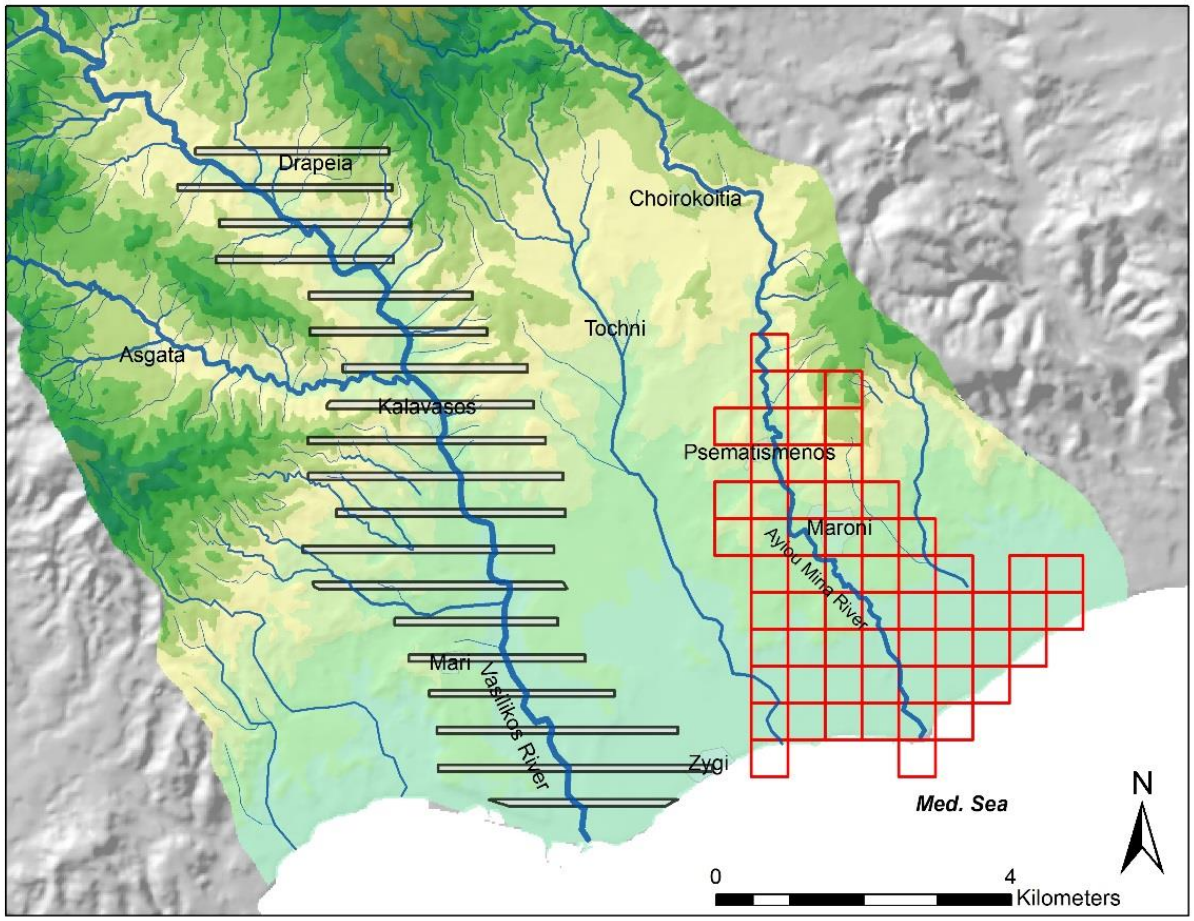


Fig. 5.1. VVP and MVASP survey transects. All maps in this chapter created in ArcGIS 10.0 using data provided by the Geological Survey Department of Cyprus.

Field walkers were spaced 10 to 50 m apart based on number, from 2 to 4. The survey area stretched ca. 11 km from the Kalavasos mines and the dam constructed from 1983-85 to the coast (approx. 151 sq. km), and claimed to have achieved ca. 60% coverage (Todd *VVP* 9: 48). This second phase included alluvial and environmental histories of the valley performed by Wagstaff (*VVP* 9) and Gomez (*VVP* 9; 1987), as well as studies of modern vegetation and ethnographies of modern rural practices (Hanson *VVP* 9). Due to the rapid pace of construction in the area, the VVP had to repeatedly shift its focus to rescue excavations, leading to the

important work at the LC site of Kalavasos *Ayios Dhimitrious* under the new Nicosia-Limassol highway as well as the Neolithic sites of Kalavasos *Ayious* and *Tenta* (Todd *VVP* 9: 43). In addition, the survey finds helped launch the Kalavasos *Kopetra* survey project (Rautman *et al.* 2003), which explored the Late Roman occupation of the same valley.

Based on the survey evidence, Todd (*VVP* 12: 119-22) has argued that the valley had been most intensively worked and occupied during the Neolithic, MC, CA, and Late Roman periods, with significant hiatuses in the EC, the early 1st millennium BCE (11th – 9th c BCE), and the Classical period (5th – 3rd c BCE). From an initial unpublished study of the Iron Age ceramics by Margaret Morden, three sites are listed for the 11th – 9th c. BCE (Fig. 2): Tochni *Kapsala* (*VVP* 9: [97], 132-2),[161] Kalavasos *Mitsingites* (*VVP* 9: [59], 85-87), and Tochni *Lakkia* (*VVP* 9: [98], 133-4). A few sherds of CG material were also noted at Mari *Moutsounin/Mandra tou Rirou* (*VVP* 9: 181), Tochni *Petreli* (*VVP* 9: [101], 139-50), and possibly in an area of late 2nd millennium BCE tombs at Kalavasos *Mangia* (*VVP* 9: [53], 79-80). Then, during the 9th/8th c. BCE, the valley bursts with settlement: roughly 72% of the sites identified in *VVP* 9 have some CA material, stretching the entire length of the surveyed area.[162] Todd (*VVP* 12: 100) also noted that certain parts of the valley became more intensively occupied in this period, such as the territory around the modern village of Mari. Despite this radical shift in the valley's history, and evidence for copper production and olive oil processing, Todd (*VVP* 12: 120) judged the 1st millennium BCE settlement configuration in the valley a "backwater on the edge of the two incipient kingdoms Amathus to the west and Kition to the east."

[161] Each VVP site was given a number, represented within the brackets [], followed by page numbers of its description.

[162] As discussed below, the 146 sites listed in the *VVP* 9 and *VVP* 12 include those with unknown locations as well as separate listings for single tombs or scatters of the same area (e.g. Kalavasos *Mangia* I-VIII): 125 total VVP sites were included in my analysis below, of which 90 had a significant amount of CA material.

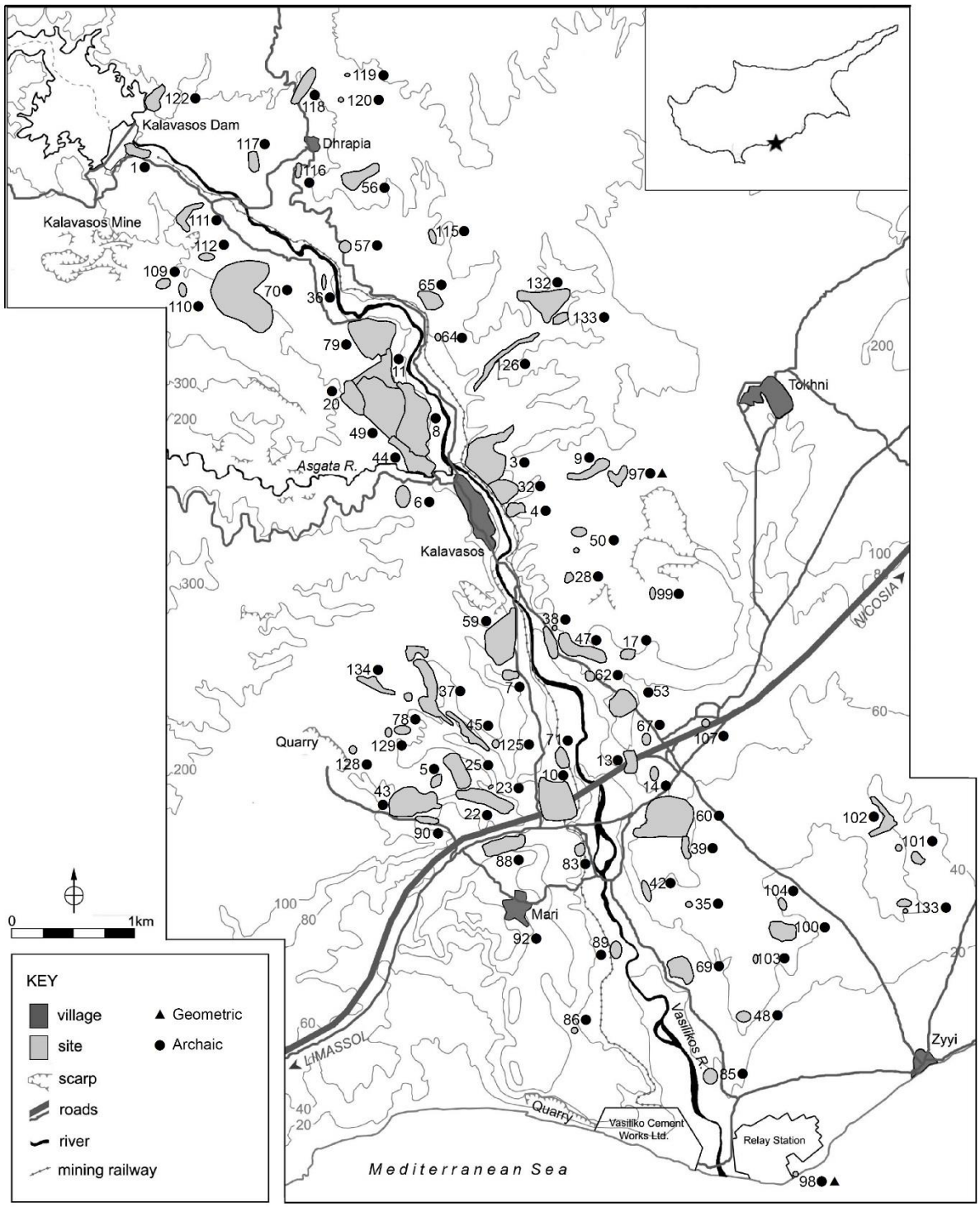


Fig. 5.2. *VVP* 12, CG and CA sites in the Vasilikos Valley, showing proposed site extent in gray. Created in Photoshop for Todd *VVP* 12.

The Maroni Valley Archaeological Survey Project (MVASP), undertaken by Sturt Manning[163] of the University of Cambridge from 1990-1992 and of the University of Reading from 1993 onwards (with shorter seasons in 1994, 1995, and 2004),[164] had a similar purpose of investigating the adjacent Maroni valley's diachronic history and the regional context for the excavations at the LC site of Maroni *Vournes*. It also aimed to sample from a range of geological contexts, and to record the valley's archaeology before modern development had cleared much of the land near the coast (Manning and Conwell 1992: 272). Indeed, by 1995, the construction of semi-permanent *thermokipia* (greenhouses) along the coastal plain prohibited further expansive survey. The survey's 14.5 sq km area extended from the coast up the valley towards the modern villages of Maroni and Psematismenos, and the MVASP covered approx. 4.3 sq km, roughly 30% of the total grid (Fig. 1). The project stopped its field walking efforts to perform rescue excavations at several sites, including a church at Maroni *Petrera* (Manning and Manning 2002) and the LC coastal site of Maroni *Tsaroukkas* (Manning *et al.* 1994b). Due to the interest in the latter, Manning then initiated the *Tsaroukkas*, Mycenaeans and Trade Project, which investigated the site's relationship with Maroni *Vournes* and with Mediterranean/Aegean trade systems in the LBA (see Manning *et al.* 1994b).[165]

The MVASP had two phases: an initial venture began with both extensive survey and extremely intensive sampling. Using a block system, the MVASP worked from a distributional method rather than a site-based one, creating large 500 m rectilinear blocks that were then

[163] The first full season in 1991 was co-directed by Manning and Conwell (1992) in association with the Maroni Valley Project of Cadogan; after 1992 Manning was the director.
[164] The small seasons in 1994 and 2004 concentrated on the EC-MC site of Psematismenos *Trelloukkas*.
[165] Manning *et al.* (2002) presents the strategy and results of an underwater survey off the coast at Maroni Tsaroukkas that grew from the MVASP methodology. In 2008, Manning (with K. Fisher and M. Rogers) founded the Kalavasos and Maroni Built Environments Project (KAMBE) to further investigate *Tsaroukkas* and its relationship to *Vournes*.

subdivided into smaller units for transect walking (Manning and Conwell 1992: 273-275). The resulting tabulated surface material – ceramics, ground stone, tile, etc. – allowed for the study of patterns in density which might indicate activity. Depending on the density of artifacts and the likelihood of a nearby "site" in a given unit, total collection methods were used, which took every surface piece in a 50 m transect. This strategy was heavily influenced by surveys of the "boom" period of the 1970s-1980s, especially those working in the Aegean (e.g. Cherry *et al.* 1991; Runnels and Van Andel 1987; Bintliff and Snodgrass 1985). In 1992, after recognizing that the intensity of the collection prohibited efficient work (covering <1 sq km in one season), the MVASP reduced the number of surveyors per block to 4, spaced 5 m apart, overseen by a unit leader who recorded surface information (visibility, ground cover, slope etc.). By the end, the project had sampled over 30,000 artifacts.

The MVASP findings allowed for some tentative interpretations for the 1st millennium BCE occupation of the southern Maroni valley, after a gap in the CG period. Andrea Swinton (1994) has done a preliminary study of the Iron Age ceramics, arguing that the material was consistently similar to the wares characteristic of the Amathus region to the west. She noted three areas of density of 8th – 5th c. BCE finds (Fig. 3)[166]: 1) Maroni *Vouni*, on the edge of a marine terrace on the east side of the Ayiou Mina river, 2) Maroni *Viklari*, on the west bank of the same river between the hills of *Viklari* and *Aspro Moutti*,[167] and 3) Maroni *Yialos*, an area of Classical material near the coast previously known by the British Museum and by the discovery of a limestone figurine in 1977 (Karageorghis 1978: 881-2; Johnson 1980: 6; Swinton 1994:

[166] Swinton (1994: 355) noted one piece of a White Painted II-III bowl (CGIII; roughly 900-750 BCE) from Maroni *Vouni*.

[167] Todd had collected remains from *Viklari* as part of a study collection at the Cyprus American Archaeological Research Unit (CAARI); see Manning and Conwell 1992: 276. *Viklari* was also known as *Aspromouttes* (Catling 1962: 156) for its Neolithic and Chalcolithic remains (Johnson 1980: 6).

353). Swinton (1994: 356) further argued that Maroni *Vouni* was likely a settlement, with a large number of coarse, utilitarian wares, while Maroni *Viklari* was probably a cemetery (or sanctuary) based on the number of finer, decorated wares.

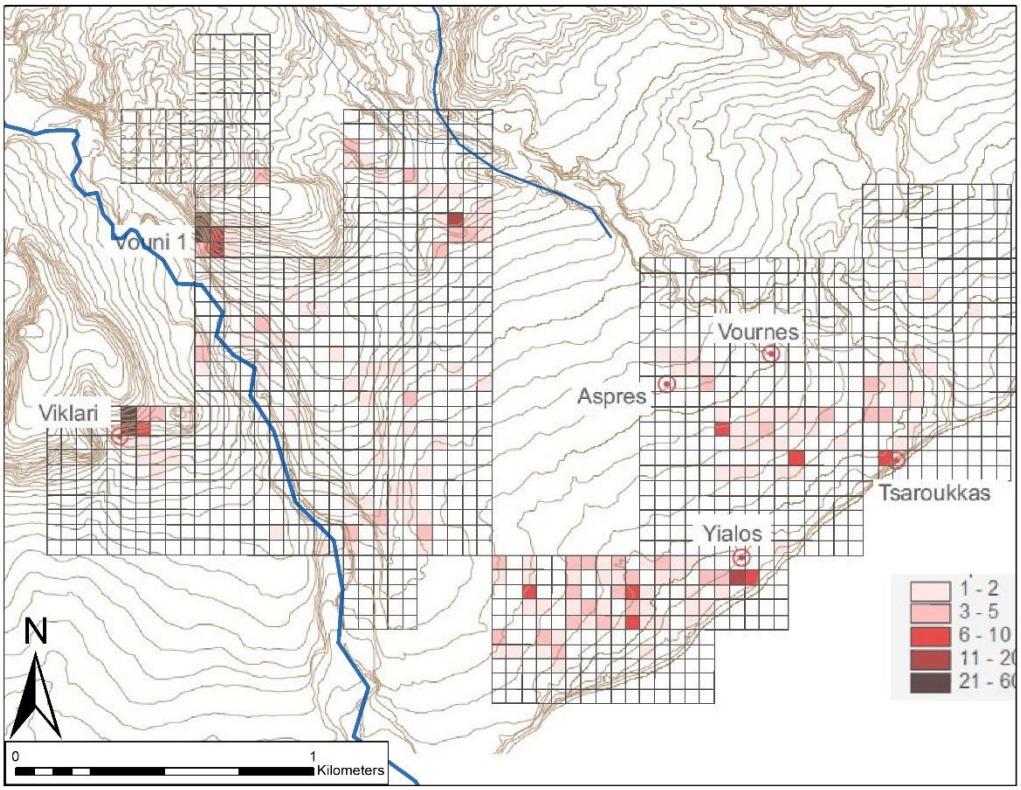


Fig. 5.3. MVASP Iron Age assemblages, coded in distributions in survey grids, each square representing 50 by 50 m grid (courtesy of D. Sewell)

These two projects reached similar conclusions about the early 1st millennium BCE: little to no evidence for the earlier part of the millennium, followed by a jump in occupation beginning in the 8th c. BCE. They also had noticeable variances in methodology. The VVP, working in the late 1970s and 1980s, was conducted using 1:5000 topographic, cadastral, and geological maps (Pantazis 1967), without the aid of computer technologies, a major asset to large-scale projects (Todd *VVP* 12: 2; see Alcock *et al.* 1994: 138; Conolly 2008). The MVASP, on the other hand, used early editions of geospatial software to map their data, making it much easier to translate artifact scatters into georeferenced analyses. While the VVP mostly consisted of the work of

Todd and a handful of other field walkers, the MVASP employed several team members in a rigorous schedule of field walking. The projects also differ in accessibility: Todd published field reports in the 1970s and 1980s (e.g. Todd 1977, 1978, 1989; Johnson and Hordynsky 1982), a catalogue of sites (*VVP* 9 [2004]), as well as a recent edition on settlement history (*VVP* 12 [2013]). The MVASP has put forth articles on method and preliminary results (Manning and Conwell 1992; Manning *et al.* 1994a; Manning *et al.* 2002; Manning and de Mita 1997; Manning and Monks 1998; Manning and Sewell 2006), as well as a publication on a Late Roman church discovered and excavated through survey (Manning 2002), but further interpretive findings and synthesis are forthcoming.[168] Finally, the VVP covered a significantly larger swathe of the Vasilikos valley than the MVASP did for the Maroni valley, although the latter's methods were clearly more intensive (Todd *VVP* 12: 4): thus 3 areas of Iron Age material have been identified so far in the Maroni valley as opposed to almost 80 sites in the Vasilikos.

These distinctions in method are important but not as conspicuous as the projects' varying articulations of the "site." Although later reappraisals of survey methodology have criticized a site-centric emphasis ("the fact is that archaeological data do not come in neat packages called *sites*" Cherry 1984: 119; see also Snodgrass and Bintliff 1991: 88; Given and Knapp 2003: 27-28; O'Shea and Barker 1996: 13; Diacopoulos 2004: 65), the VVP organized its material as part of a specific assemblage with its own site name and area extent. Thus Todd (*VVP* 12) was able to list 146 sites of human activity, whether single tomb or 25 ha settlement, taking note of material around them but ultimately focusing on understanding their function and length of occupation (Todd *VVP* 12: 4). The MVASP by contrast only identified potential sites

[168] A volume on the survey finds and interpretations is currently underway. See also Manning *et al.* 2014, which draws upon MVASP pedestrian data.

after statistical scrutiny of the patterns of artifacts across a continuous surface.[169] This distinction is perhaps the greatest hindrance for a direct comparative survey of raw data, as one project's data are enumerated in terms of site, while the other's are in units of artifact per block.[170]

Site recovery is a related concern: assuming that no survey recovers a complete record of human activity in the past, how many sites did each survey potentially miss, given their intensity (Witcher 2011: 39-45; Wilson 2008: 235-6)? For the VVP, Todd (*VVP* 9: 40) estimated that out of ca. 151 sq km of the main river valley, 60% was surveyed (90.6 sq km), with an additional 100% of three major side drainages. Yet this 60% includes both the initial, more extensive intuitive survey as well as the transect survey with 2-4 walkers, and its recovery rate is therefore more complicated to assess. Following the calibration model of Andrew Wilson (2008: 236), we can assume that the VVP survey with extra walkers covered about 90% with a nearly intensive rate (100% for the smaller drainages whereas ca. 70% for some transects of only two people spaced 50 m apart = 85%), while the reconnaissance walking covered an additional ca. 10% with a more random sampling of unique topography (ca. 25-30%).[171] The total percentage might then be expressed mathematically as:

$$\mathbf{(90 \times 85\%) + (10 \times [(25+30)/2]\%) = 79.25\%}$$

Thus roughly 80% of the estimated 90.6 sq km was examined with the two methods of intensity (72.48 sq km), requiring a multiplication factor of 2.08 to approximate the total number of sites in 151 sq km. Indeed, Todd (*VVP* 12: 5) noted that 45.5% of the sites recorded by the VVP were

[169] The distributional approach to surface survey began in the late 1960s: see Alcock *et al.* 1994: 138.
[170] For many (but not all) of the VVP sites, Todd did list relative amounts of sherds per cadastral plot (e.g. small scatter).
[171] These percentages of course express only one rough possibility based on the publications and survey notes, and not first-hand experience of the survey. It is possible, on days with only 2 walkers spaced 50 m apart, that entire assemblages (or sites), were missed, bringing the possible coverage down to something ca. 20-50%.

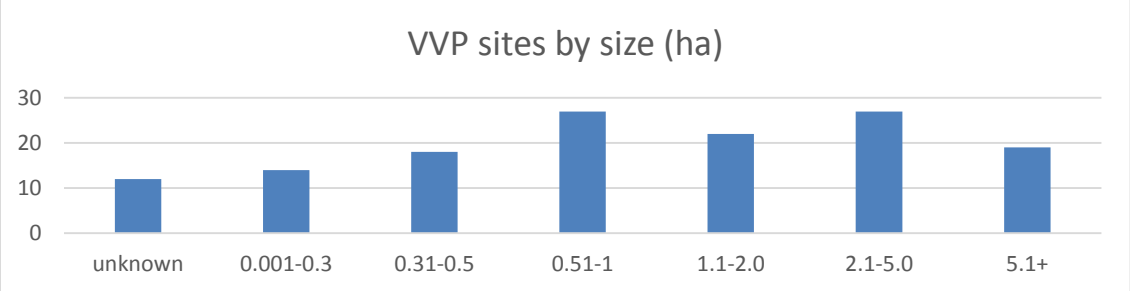
less than 1 ha in size, as compared to the 60% from the Melos survey or 90% of the Boeotia project (Cherry *et al.* 1991: 19), suggesting that the VVP did not recover as many small sites as a more intensive survey.[172] For the MVASP project, of a reported 14.5 sq km total area, 30% was very intensively surveyed (4.3 sq km x 100%), requiring a factor of 3.37 to achieve a gross total number of sites (see Table 1).

Table 5.1. Multiplication factors for calibrating survey coverage for the two surveys.

	Presumed coverage of valley	Recovery multiplication factor
VVP	79.25%, 72.48 sq km	2.08
MVASP	30%, 4.3 sq km	3.37

These numbers are then applied to the data via assumptions of site *size* recovery: for the VVP and the MVASP, we can presume that both surveys did not fail to find a large town or center of the Iron Age (e.g. 10-25 ha); therefore the category of potentially missed sites is the small nucleated settlement or village (e.g. 0.6-6 ha) or the small rural site (e.g. <0.5 ha; see Chart 1). Due to the nature of the published data, in which site areas are postulated by overall scatter and not distinguished by period, sizes have been crudely estimated for many of the sites that were continuously occupied over time (see also Sundstrom 1993).[173]

Chart 5.1. VVP sites distributed by size, based on data from Todd *VVP* 9 and 12.



[172] Another way to look at it: roughly 1/3 of VVP sites were recorded as larger than 2 ha.

[173] This recalibration of areas for CG/CA sites relied on the description of the surface scatters given by the two surveys, the descriptions of sites and visual identification in satellite imagery, and then gross arbitrary estimates if neither of these sources were available (e.g. "small scatter" = 0.5 ha). Sites that Todd identified as, for example, 25 ha with CA material "spread across the site" were reduced to an arbitrary value of 6 ha and the largest category of sites over 5 ha due to the lack of any other descriptive information.

While "site ranking" – creating hierarchies of sites based on rough categories of size – can be an inadequate explanatory system (Khatchadourian 2008: 344-345), patterns in area can help to ascertain local changes in settlement structure and are necessary for heuristic models of population (Mattingly 2011: 92). Despite the problems of building models of ancient demographic dynamics from surface survey (e.g. Witcher 2011; Osborne 2004; Wilson 2008; Sbonias 1999), it is germane to consider the populations that the Vasilikos and Maroni valleys might have supported by the 8th c. BCE, especially if it were an important resource-producing periphery of Amathus (cf. Horden and Purcell 2000: 382; Price 2011; Harris 2005a: 14-15; for the LBA, see South 2014).[174] There are a number of methods which quantify rural population via estimates and calculations of either site or catchment area and number, household size, or individual building area (Witcher 2011). The Northern Keos project (Cherry *et al.* 1991), for example, calculated rural population by multiplying the number of small farm sites by a standard number of 5 persons per family, assuming the sites (based on density of finds) to be one-family houses. The Boeotia Project (Bintliff and Snodgrass 1985) computed roughly 38 persons per sq km in the Classical Greek countryside, and assumed all rural sites to have the same inhabitation size (Osborne 2004: 166). Yet excavated evidence from contemporary EIA rural Levantine houses (Routledge 2009) suggests that both house sizes as well as the degree of compactness can vary (see Yerkes 2000).

While retrojecting population estimates from "traditional" 20th c. villages can be problematic (see Yerkes 2000), for the southern parts of the Vasilikos valley, census data from

[174] On population cyclicity, see e.g. Bintliff 1999.

three selected years shows that the average number of people per household is more often 3, not 5 (see Wagstaff 2004: 14-15; Table 2).[175]

Table 5.2. Census records for the years 1946, 1982, and 2011 for the villages of the Vasilikos Valley, showing number of households, total population, and number of persons per household.

Name	Size	1946 [176] No. of house-holds	1946 total pop.	1946 No. per house-hold	1982[177] No. of house-holds (usual residence)	1982 total pop.	1982 persons per house-hold	2011[178] No. of house-holds (usual residence)	2011 total pop.	2011 persons per house-hold
Kalavasos	Village	296	1243	4.19	193(192)	655	3.39	278 (278)	737	2.65
Asgata	Village	185	704	3.81	93(93)	282	3.03	143 (142)	417	2.91
Mari	Village	163	580	3.56	141(141)	476	3.38	59 (59)	158	2.67
Vavla[179]	Small village	63	204	3.23	27(27)	57	2.11	25 (25)	39	1.56
Dhrapia[180] (1960)	Hamlet	12	50	4.17	--	--	--	--	--	--
Avg. village		176.5	682.8	3.7	113.5	367.5	2.98	126.3	337.8	2.5
Avg. hamlet		12	50	4.17						

If we extrapolate and multiply by the numbers of assumed settlements recovered by the survey data, we can create one coarsely resolved model of population per settlement (e.g. Mattingly 2011; see Table 3). The number of 0.1 to 0.3 ha per one-household rural farm site from the 1st millennium BCE survey material calculated by Alcock (1993: 60; also Watrous *et al.* 2004: 321; Jameson *et al.* 1994) is a starting point, recognizing that these could represent a range of field

[175] A similar trend occurs in the southern Maroni valley over the last few decades, with 2.35-3.01 average persons per household (the villages of Tochni, Maroni, Psematismenos, and Zygi), while in 1982 there were on average 2.67 persons per household for the entire Lefkara plateau (458.6 population per village, 171.3 households; Wagstaff *VVP* 9: 14). Estimating population using modern (20th c.) population statistics on Cyprus is especially exacerbated by the displacement of ethnic groups during the 1950s – 1970s conflicts on the island, and would have to take into account village spaces no longer occupied after the displacements.

[176] Data from Census of Population and Agriculture 1946 (Crown Agents for the Colonies, 1949).

[177] Data from Census of Housing 1982 (Dept. of Statistics and Research, 1984)

[178] Data from Census of 2011 (http://www.mof.gov.cy/mof/cystat/statistics.nsf/census-2011_cystat_en/census-2011_cystat_en?OpenDocument)

[179] These averages do elide, however, differences between village size: Vavla, although a municipality, is a small village with a population size more comparable to a 'hamlet' or small rural settlement.

[180] Dhrapia was a small cluster of ca. 12 houses and a church, with about 50 people living there in 1960 but virtually abandoned by the 1970s. Wagstaff (*VVP* 9: 15) suggests that Dhrapia and Parsata, another small abandoned hamlet north of Kalavasos, were temporary settlements used by carob-gatherers and shepherds from the more northern village of Ora.

shelters or houses, pens, or temporary installations (Pettegrew 2001). Other categories of the VVP material clustered at the 0.3-0.5 ha, 0.51-1 ha, and 1-2 ha ranges, and an additional remaining group of widely spread artifact scatters of 2+ ha that may represent villages with a concentrated center of 20 or more households (Price 2011). Following the work of Richard Blanton (1994: 5) on cross-cultural comparisons of households and their spatial arrangements, a household is associated with daily practice and denotes coresidents who share responsibilities and practices involved in the maintenance of the residence, including decision-making.

Table 5.3. Estimated population and household numbers for Vasilikos Valley sites, listed in relation to possible site size.

Proposed type of VVP material	Size (ha)	Households	Population with 3 persons per household	Population with 5 persons per household	Number of sites recovered	Estimated total sites (x 2.08)	Estimated population (x3) (x5)
Small farm or rural site	0.01-0.3	1	3	5	11	23	69 115
Small settlement	0.3-0.5	2-5	6-15	10-25	13	27	162-405 270-675
Small village	0.5-1 ha	4-12	12-45	20-75	19	40	480-1800 800-3000
Village	1-2 ha	10-20	30-60	50-100	12	25	750-1500 1250-2500
Village	2-5 ha	20-40	60-120	100-200	22	46	2760-5520 4600-9200
Total					77	161	4200-9200 7000-15000
Total lower estimates (-10%)							3780 - 5000

These rough sizes of proposed settlement would then have an estimated range of households, the lower number suggestive of smaller 3 person households and the higher number representing larger (5 person), potentially more compacted ones. Richard Yerkes' (2000)

estimate for the population of the Roman site of Athienou *Malloura* of 60-75 per 1.7 ha of lived space thus would fit into the higher estimates of the 1-2 ha category. The above table (3) breaks these numbers down for the Vasilikos valley finds as well as a re-calculated estimate of total sites based on the modeling of site recovery discussed above (a multiplication factor of 2.08).

From these necessarily coarse estimations, the maximum numbers of 5 persons per household for the calibrated total number of expected sites seem overly high, requiring a population of 7,000-15,000 for just the southern part of the valley. The number of settlements recorded with over 2 ha in surface scatter is probably too high, since many of the descriptions lack detail about CG/CA material. If, however, we take the lower estimates and adjust them down by 10% to account for sampling bias against rougher terrain (Bevan 2002: 245), as well as the likelihood that not every small site was occupied at the same time, nor every area of a site contemporaneously used, we might approximate ca. 3,700 as the minimal population and 5,000 as a maximum in the 8th-5th c. BCE. This range of 25-33 persons per sq. km (against the 151 sq km surveyed by the VVP) is somewhat lower than the Boeotia's countryside estimates noted above, but not by drastic amounts, especially if we allow for variation in the number of persons per household and inter-site diversity in lived space, and the overall trend in population increases by the mid-1st millennium BCE in the east Mediterranean (e.g. Haggis 2005: 84). By contrast, in the intensive Argolid Exploration Project (Jameson *et al.* 1994), population estimates for the Archaic period's non-town inhabitants reached roughly 3,500 for 44 sq km, or ca. 80 people per sq km, a more densely occupied countryside given the presence of two large towns.

The lower figure of ca. 3,700 is much higher than Alison South's (2014) recent calculations for the LBA population in the Vasilikos Valley, between 1575 and 1875, which are measured from the major site of Kalavasos *Ayios Dhimitrios* and the estimated sites of other

major LBA sites in the valley: Kalavasos *Mangia*, Kalavasos Village, Kalavasos *Arkhangelos* and Tochni *Oriti*. These lower estimates, however, do not take into account other potential smaller sites throughout the valley, and her upper estimate of 3,000 (with a much bigger population estimate for Kalavasos *Ayios Dhimitrios*) might give more flexibility for non-town-sized sites. Nevertheless, South (2014) also notes that the LBA settlement pattern seems to reflect a major concentration at *Ayios Dhimitrios*, so that a lower estimate for the LBA than the 8th-7th c. BCE, when there does not seem to be a central site but several clusters (as explored below), might make sense.

With the smaller overall survey area of the MVASP and the number of sites recorded there, and thus a skewed dataset without much evidence of small <0.3 ha sites or smaller villages <1 ha, it is exceedingly difficult to offer a crude population estimate for the lower Maroni valley (see Table 4). And, given the trends in the discovery of tombs in village centers (e.g. Mari [Hadjicosti 1997b] and Maroni [Karageorghis 1972], and elsewhere on the island), it is possible that larger sites remain under modern villages. In addition, the overall trend in abandoning Late Bronze Age urban centers might suggest that a larger village exists somewhere outside of the MVASP survey area. Based on the amount of identifiable assemblages, and the likelihood that smaller farming installations and settlements were concentrated in the fertile coastal plain, the gross higher estimates in this case of ca. 450 people (still at 3 per household), or about 30 people per sq km, might reflect a presumably intensive agricultural zone near the coast.

Table 5.4. Estimated population and household numbers for Maroni Valley sites, listed in relation to possible site size.

Proposed type of MVASP material	Size (ha)	Households	Population with 3 persons per household	Population with 5 persons per household	Number of sites recovered	Estimated total sites (x 3.37)	Estimated population (x3) (x5)
Small settlement	0.31-0.5	2-5	6-15	10-25	1	3.4	7-51 34-85

Village	1-2 ha	10-20	30-60	50-100	2	6.8	204-408 340-680
Total					3	10.2	211-459 374-765

Apart from the challenge of estimating population, the other main concern to consider before beginning a comparative synthesis of these two regional projects is the identification of post-Bronze Age ceramics (see Smith 2009: 23-25). As noted throughout survey literature for Cyprus, there is acknowledged difficulty in recognizing Iron Age wares, and particularly the greyish-brown, undecorated coarser ones (Given and Smith 2003: 271; Swinton 1994: 355; Janes and Winther-Jacobsen 2013a: 62; Sørensen 1993).[181] A bias towards sampling fine or decorated wares, often combined with a lack of expertise or interest in the period's ceramic typologies, orients survey work towards recognizable shapes and decorations known almost entirely from mortuary contexts, with their own problems of classification (see Nys 2008; Gjerstad 1948). In addition, due to the lack of an Iron Age excavated sequence in the Vasilikos or Maroni valley for comparison, the need for a rigorous study of local material becomes imperative (e.g. Pettegrew 2007: 770). Despite these caveats, and due to the mostly universal acceptance of Gjerstad's (1948) ceramic sequences for the 1st millennium BCE, there is less risk of incongruous periodizations between projects for those pieces that are identified as Iron Age, as each phase is set firmly within standard centuries (unlike in the Aegean, cf. Alcock 1993: 49).

A hidden rural Iron Age?: persistence and permanence

John Bintliff *et al.* (1999; Bintliff *et al*. 2002), in their provocative argument for "hidden" landscapes, have challenged survey methodology and its inherent inabilities to recover certain

[181] See Verdan et al. (2011) for similar Iron Age ceramic problems in the Mediterranean.

periods in the Aegean, such as the Iron Age (see Stissi 2011). Using the case of the Boeotia project in Greece, the authors proposed that prehistoric sites were not being found through intensive survey. The failure of many projects to identify the older, more fragmentary prehistoric wares, as well as the covering of these presumably small, short-lived settlements by much more visible later assemblages, led the Boeotia project to miss much of what was assumed to have been a dense prehistoric network. Jack Davis (2004), among others,[182] has critiqued these assumptions, calling attention to the unlikelihood that all surveys are failing to recognize prehistoric periods as well as the circularity of the claim that survey is not intense enough because it does not find certain periods.[183] The problems with Bintliff *et al.* (1999)'s basic argument are evident in the post-1970s success at finding Neolithic and early prehistoric sites on Cyprus, once thought to be very meager, after scholars began explicitly directing research agendas (and appropriate methodologies) towards the period (Manning pers. comm.). The nature of survey evidence for the Iron Age landscapes of Cyprus, and the assumption that most Iron Age material lies "hidden" under modern cities, is plagued with similar yet separate problems: what are the practices – past or modern – that preserve some periods but obscure others? And, importantly, how might climatic and environmental shifts, such as major erosional or alluviation episodes, make 1st millennium BCE sites more difficult to identify through surface remains?

The early 1st millennium BCE period seems to pivot on a shift in landscape "persistence" (Bevan and Conolly 2013; Wilkinson 2003: 7-8; Cherry *et al.* 1991: 246): human activity during the 11th-9th c. BCE either is not represented or is marked by small, isolated assemblages, while

[182] See especially review comments in *JMA* 2002 vol. 2.

[183] The *Landeskunde* school of geography used by the Boeotia project, Davis (2004: 33) argues, presumes that certain resource-rich parts of a landscape were continuously occupied, leading to the belief that surface materials in these areas must consist of all periods. Thus the tautology: the survey is not intense enough because it does not find prehistoric material, and the survey does not find prehistoric material because it is not intense enough.

8th-5th c. BCE contexts appear in high density, re-emerging in places of earlier occupation as well in new ones.[184] Tony Wilkinson's (2003: 11) concept of "signature" landscape preservation can help to frame this shift in regional long-term histories. Signature landscapes are better preserved because of both the practices that created them and the subsequent economic, social, or environmental actions that persisted around them. In the Near East, the common mounded "tell" formation is a prime example: continuously occupied and spatially defined, these cumulative, diachronic sites were re-used over generations. Less permanent settlements, on the other hand, can be more susceptible to erasure through subsequent land use practices (Alizadeh and Ur 2007). On Cyprus, the later 20th c. move away from pastoralism towards agricultural technology and development caused widespread damage to the lowland plains, and the modern history of herding and regional mobility, in the form of small field shelters or the traveler's *khan*, has all but disappeared (Todd *VVP* 9: 22-24; Jones *et al.* 1958).[185]

In contrast to the "hidden landscapes" argument, this shift in landscape persistence does not assume that we have failed to see sites (although we do need higher-resolution investigations), rather that contingent practices transform the landscape in varying ways, and our expectations of one period's dwelling and movement habits cannot easily map onto another's. In other words, rural sites of the 11th – 9th c. may not carry the surface signatures – extramural cemetery, olive processing or mining installations, large-scale storage – which we have come to expect of the 8th c. BCE on Cyprus. Landscape endurance is tied not just to post-depositional processes – though local taphonomic properties are important – but also to the organization of

[184] A comparison of regional survey projects on Cyprus and their early 1st millennium BCE material will be presented in **Chapter 6**.

[185] For a recent and thought-provoking discussion of the medieval *khan*'s cultural landscape in central Asia, see K. Franklin (2014) *The World is an Inn: Cosmopolitanism and Caravan Trade in Late Medieval Armenia*. Unpublished PhD Dissertation, University of Chicago. For Cyprus see e.g. Gibson 2007.

communities, their construction and subsistence activities, and their length of landscape investment or sustainability (Bevan and Conolly 2013: 9).[186] But, to avoid falling into the trap of creating a false dichotomy between 11th-9th c. BCE mobility and 8th-5th c. BCE settlement, my focus on permanence follows Michelle Lelièvre 's (2012: 105) recent reconsideration of social movement and the "settlements without sedentism" that she has studied among the indigenous populations of the Canadian arctic. Sedentism is (and was) not an "ideal" form in relation to which movement represents a degeneration (Lelièvre 2012; Cherry 1988: 27); rather, environmental and social changes around the 8th c. were, for reasons explored below, co-constitutive of a shift towards more permanent practices.[187]

Many of the (admittedly meager) inferences of a less sedentary pre-8th c. BCE landscape stem from an absence of evidence (especially if we grant that non-presence is more than just a function of preservation and archaeological methods). Most notable is the gap in rural settlement data for the early CG period (e.g. Given and Knapp 2003: 56; Given *et al.* 2013: 156)[188]; those settlements of this period that are known to exist, such as Gastria *Alaas*, are one-phase sites (Iacovou 1994: 153).[189] The absence or diminution of the monumental-sized storage vessels (pithoi) known from the Late Bronze Age in centers across the island after the 11th c. BCE also suggests that durable, large-scale storage (requiring significant technological investment) was no longer a viable part of daily practice (Pilides 1996: 110, 119-20; see Halstead and O'Shea 1989: 123-24).[190] By the end of the CGIII period, larger vessel types reappear (Gjerstad 1948: 242-

[186] The prehistoric periods on Cyprus are indeed known for their lack of tell-like mounds and their always-on-the-move settlement patterns that never occupied the same area for more than a few centuries (Catling 1962).
[187] For early (Neolithic) village formation and sedentism, see M.S. Bandy and J.R. Fox eds. (2010) *Becoming Villagers: Comparing Early Village Societies*. Tucson: University of Arizona Press.
[188] The later historical polities were also mostly removed from their LC antecedents; e.g. Iacovou 1994, 1999; Catling 1994: 137.
[189] See also Karageorghis and Demas (1988) on Maa *Palaekastro* and (1984) on Pyla *Kokkinokremmos*.
[190] At the site of Myrtou *Pigadhes*, for example, excavators noted that only one form of storage pithos had continued into the CG period (du Plat Taylor 1957: 115). Similarly, a shorter, smaller and less impressive form of

247),[191] indicating risk-averse, long-term storage strategies (Halstead and O'Shea 1989). Jennifer Webb and Judith Weingarten (2012: 92) have likewise suggested "a low intensity use of seals in commodity management" in the CG period, a practice which had been largely linked to LBA overseas trade and which had reappeared by the subsequent CA period in relation to increased exchange with Euboea, Crete, and the Levant, as seen in imported pottery found across the island (Gjerstad 1977). There is also sparse evidence for olive cultivation and oil production following the end of the LC period (Hadjisavvas 1996: 133; 1992: 27); only one olive press is known, from an 11th c. BCE tomb at Kouklia *Skales*,[192] as opposed to the conspicuous and elite-controlled nature of oil production and consumption in the 13th c. BCE and again by the 8th c. BCE.[193] The relative absence of continuity of cult or sanctuaries in the CG period (Papasavvas and Fourrier 2012: 297), places which can indicate generational use and a need for iterative, public rituals (Papantoniou 2012; Ulbrich 2008), hints at other small-scale, less permanent or less overt ritual practices in the CG period.

Negative formulations that emphasize the loss of the markers of preceding institutions can oversimplify what was a dynamic and diverse period, as well as project a reversion to regressive or unstructured practices, "a myth of archaic pastoralism" (Lewthwaite 1981: 60; Cherry 1988: 14, 26-8). More highly-resolved data are required to avoid these generalizations.

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pithos found in the early CG layers of the urban site of Kition indicate a potential reduction in the need for long-term storage of subsistence commodities. There is a wide and dense range of studies on prehistoric storage strategies and political economy, particularly in the Aegean; see Christakis 2008 for a review; Privitera 2014; Renfrew 1972: 287-289.

[191] The administrative or residential "Palais" at Amathus by the 8th/7th c. BCE also contains a large pithos-storeroom (Blandin *et al.* 2008), as does the "Phoenician" administrative center at Idalion (Hadjicosti 1997a: 57-60).

[192] The inclusion of the *Skales* calcarenite press within a tomb might further indicate the high value of olive oil, marked by its overall rarity, or the capacity of the tomb occupant to control its production.

[193] In the preceding LC period, large, conspicuous and often decorated storage containers (pithoi) were a hallmark of monumental urban centers such as Kalavasos *Ayios Dhimitrios* and Alassa *Paliotaverna* (Hadjisavvas 1996: 130-33). CA presses have been found at Nicosia *PASYDY* (Hill of St. George) and Mari *Kopetra* (Hadjisavvas 1996), and possibly Tochni *Mouthkia* (Todd *VVP* 12: 101).

With excavation of 11th-9th c. BCE sites in Cyprus, for example, it would be possible to compare archaeobotanical and faunal data with evidence from contemporary contexts elsewhere in the wider Mediterranean that have suggested a more localized, mixed subsistence system of mostly cultivation with some specialized pastoralism during the Early Iron Age, oriented away from external market demands (Wallace 2010; Cherry 1988: 28-9; Porter *et al.* 2014; Moody 2012). At the 11th c. BCE site of Khirbat al-Mudayna al-'Aliya in west-central Jordan, for example, studies have revealed a complex extensification of the semiarid landscape by communities living in a defensible settlement (Lev-Tov *et al.* 2011). Do marginal production zones on Cyprus suggest a similarly mixed subsistence strategy in, for example, the 11th c. BCE? Would faunal evidence from excavated rural sites indicate a risk-averse management of herding resources, akin to subsistence patterns in the EC and MC (Spigelman 2008)? Was seasonal movement an ideal strategy for rural communities dependent on habitat-tracking? These matters of landscape experience (Smith 2003; see also Lefebvre 1991: 37-45) call for a new inquiry of early 1st millennium landscape creation. The available survey evidence for Cyprus limits our discussion, at this time, to an analysis of the contours of a new rural sedentism by the 8th c. BCE.

Methods

Indices for regional survey comparison

Some of the most successful comparative survey projects have used chronological and spatial analyses of overall survey results, rather than coordinating and integrating variously collected raw data (e.g. Khatchadourian 2008: 342-89; Davis 2004). Central to this framework are the broader patterns of occupation or activity and the structures that conditioned landscape practice. Yet this type of macroscalar survey analysis can also run the risk of shallow interpretations: settlements increased in this area from period A to B, or decreased in this one

from B to C (e.g. Kouki 2013). Three categories guide the following discussion to avoid oversimplified explanations: 1) the location and position of a site within its immediate environment, 2) the intensity of site interactions, and 3) the continuity or discontinuity of presence and potential negotiations of the past (Khatchadourian 2008: 358-9).

The position of a site – whether it sits on an upslope or a flatter valley floor, how close it is to drainages or water sources, its elevation and accessibility – speaks to a number of choices and practices of the population(s) living or working there (Bevan 2002; Stancic and Velganovski 2000). The factors of landscape situation highlight how groups choose to build and manage their places, and can illuminate not only the more practical requirements of inhabitation, subsistence, or industry, but also – when carefully analyzed – the social or political ties to landscapes through selected configurations of cemeteries, domestic spaces, or public areas. In this study, computational spatial analysis first considered background variables, such as slope, aspect, and bedrock geology, before moving to locational strategies related to 1) drainage and 2) terrain ruggedness in order to compare datasets through time (see Bevan 2002; e.g. Conolly 2008: 586-91). [194] These DEM-derived models were then used to formulate questions of the data, in order to avoid deterministic, predictive reasoning (Wheatley *et al.* 2002: 2; see also Woodman and Woodward 2002: 22). It is hoped that future work can extend to detailed analyses of (problematically modern) vegetation via multispectral imaging (e.g. Fall *et al.* 2012; Agapiou

[194] Locational modeling is often synonymous with predictive modeling, itself heavily influenced by processual archaeological methods that seek determinants in quantifiable environmental phenomena; "nothing has been more hotly debated than 'predictive' modelling" (Wheatley *et al.* 2002). Here 'locational modeling' is used more broadly to ascertain the influences for past settlement position in the landscape, "as a reflection of certain decisions" that include social, political, or ideational reasoning (Stancic and Veljanovski 2000: 148).

and Hadjimitsis 2011), soils (e.g. Moody 2012),[195] and movement and mobility (e.g. Wheatley and Gillings 2002).

The interactions between places – whether materials are clustered or grouped together to suggest the close proximity of multiple groups, for example, or are separated at significant distances from one another – can also help to evaluate sedentism by observing site grouping and interactions. Evidence of inter-site proximity, for example, may reflect how space was used to create collective ties, how goods were accessed through local networks, as well as the potential "budding off" of new settlements (Bevan 2002: 25). Spatial modeling can reveal the clustering of sites in places that may suggest the emergence of a more bonded community of several households, or the extensification of the landscape via small-scale farming and shepherding installations. On the other hand, dispersed settlement can suggest the interplay of various social groups in competition (e.g. Manning *et al.* 2014 for LC Maroni). These patterns of community, and the use of space to distinguish between or to connect certain groups, can therefore aid in the exploration of complex social interaction (Khatchadourian 2008: 344).

The third important conceptual index concerns the interactions of populations with the past. These diachronic relationships were roughly modeled by comparing patterns in assemblages using the following breakdown. The following rubric (Table 5) aims to take account of multiperiod sites with long-term or inconsistent presence, with the caveat that sites do not fall into neat types, nor does the absence of one period on the surface conclusively indicate its absence in lived practice.

[195] The data for soils in the Vasilikos and Maroni region was unfortunately too coarse for in-depth study at this time.

Table 5.5. Continuity rubric, categorizing sites in relation to their period and possible continuity with earlier occupations, breaks in occupation, or new foundations in the CG/CA period.

Recovered survey material, listed by periods present	Continuity code	Number of sites in VVP and MVASP	Possible context of site
Prehistoric and protohistoric (Neolithic, Chalcolithic, MC, LC)	1	33	No post-prehistoric material; potential visible remains
Early prehistoric (Neolithic, Chalcolithic) and CA	2	5	Gap of very long time span (ca. 1000 yrs. +) before settlement in early 1st millennium BCE
MC and CA	3	19	Long gap during the LC and CG periods (ca. 1700 to 800 BCE)
LC and CA	4	4	Only protohistoric (LC) evidence and possible gap in CG (1100-800 BCE), potential continuity
Neolithic, MC, LC, and CA	5	9	Activity spanning prehistoric to early 1st millennium BCE with possible gap in CG (1100-800 BCE), potential continuity
MC, LC, CG, and CA	6	7	Activity from 2nd millennium to early 1st millennium BCE, probable continuity
MC, LC, CA	7	27	Activity from 2nd millennium through to early 1st millennium BCE but with possible gap in CG (1100-800 BCE), potential continuity
CG and CA	8	4	New site in 10th/9th c. BCE
CA	9	23	New site in 8th-6th c. BCE
CC, Hellenistic, Late Roman	10	10	Only mid-1st millennium BCE and after

This coding does broadly show, however, general patterns in sites of the early 1st millennium and their relationship with preceding periods, which are explored further below. As noted in **chapter 2**, direct association with earlier remains may articulate a preference for the local environment, the pragmatic re-use of pre-existing structures such as groves and terraces, or an intent to connect with the past or to identify a place as culturally or temporally distinct (Manning 1998). At the same time, developing a site on *terra nova* (while acknowledging that the land was manipulated in other ways and was therefore not "pristine") may signify the desire to found territory or to claim space for future generations. While it is difficult to tell from only surface remains how conspicuous the materials of earlier occupations might have been – and Richard Bradley (2003)

cautions against the assumptions of direct relevance between several generations – the residues of previous practices can serve as a register of landscape creation and interaction.

Analysis of previous survey material

The first stage of the analysis took a second look at the collected materials from the two projects. For the VVP, Margaret Morden had originally created a catalogue of roughly 200 CG and CA ceramic fragments, culled from the larger body of material collected during the survey. I used this list to create a new database for the ceramics, as well as to refine the original VVP record of 1st millennium BCE sites.[196] In the summer of 2014, Anna Georgiadou began her own detailed analysis of the material for Todd's upcoming publication of the survey finds (*VVP* 10, n.d.). For the MVASP material, I studied selected finds from a survey block list and accompanying map of their distributions.[197] While Swinton (1994) had published a brief note about the MVASP ceramics for the CA period (see above), there was no inventory of the material. The resulting database included information on each piece's ware, possible function, shape, and then various measurements and notes on decoration, fabric and composition.

This "second-generation" analysis aims to place the materials within their spatial and social context. Lyn Foxhall (2004: 251-2) has noted, in her study of "farmstead" ceramics from the southern Argolid in the Aegean, that survey biases can privilege ceramics as indices of period, rather than as objects active within their contingent social worlds. Detailed study of ware, shape, and function can (despite issues of resolution and specific project methods) reveal

[196] With the descriptions of the ceramic scatters it was possible to determine if some sites identified by Todd as having an Archaic presence were less probable, for example with descriptions of only one sherd or very few found. Only those with a noted CG/CA presence (>10 sherds) were included.

[197] In the summer of 2012, Sheri Pak, Jenny Carrington and other KAMBE students separated 12 crates with Iron Age pottery from the larger collection of survey finds headed for storage at the Larnaka Museum. This material did not include the small finds for MVASP, nor did it include every bag of 1st millennium BCE finds (discussed below).

distinctions between rural sites of the same relative size, as well as point to possible variations in the structure and practices of the community. While Foxhall (2004: 266) cautions pushing these data too far, her model illuminates a complex countryside rather than a uniform stereotype of peasant farmers. The problems of resolution with Iron Age ceramics do make this analysis coarse, and for this region and particular period of interest, the material mostly dates to the CGIII- CAI period (ca. 900-600 BCE). Such a range is not ideal to study how rural settlements emerged and interacted with their surroundings, but it is hoped that further study in the area can help to refine this rather imprecise chronology.[198]

Re-survey

I undertook roughly two months of targeted re-survey in the region with permission from the Department of Antiquities of Cyprus.[199] This re-survey was judgmental, and worked from a selected list of sites, rather than from a random area (see Table 6).[200] This selection aimed to provide a rough cross-section of the environmental contexts of sites initially discovered with which to compare surface assemblages, as well as to create a smaller sample to focus more narrowly on material finds, location, and surroundings (Fig. 4). The publications of each survey (e.g. Todd *VVP* 9, *VVP* 12; Johnson and Hordynsky 1982; Manning *et al.* 1994) provided a list of sites that included material from the 9th – 7th c. BCE and extended from the northern limits of the original VVP survey area to the marine terraces and coastal plain.[201]

[198] See Coldstream 1999 for this dating of the end of CGII/beginning of CGIII (rather than Gjerstad's 850 BCE); Coldstream 2001. Radiocarbon dating of IA contexts would, of course, also help.
[199] Acting co-directors at the time of this request were Dr. Despina Pilides and Dr. Marina Solomido-Ieronymidou.
[200] I made this decision due to constraints of time and funding, and because as one person, to initiate a fully intensive survey in order to locate new sites, was unfeasible (and perhaps unethical; see e.g. Cherry 1983: 386).
[201] Todd was especially generous in providing his original field notebooks for me to scan once these sites had been chosen.

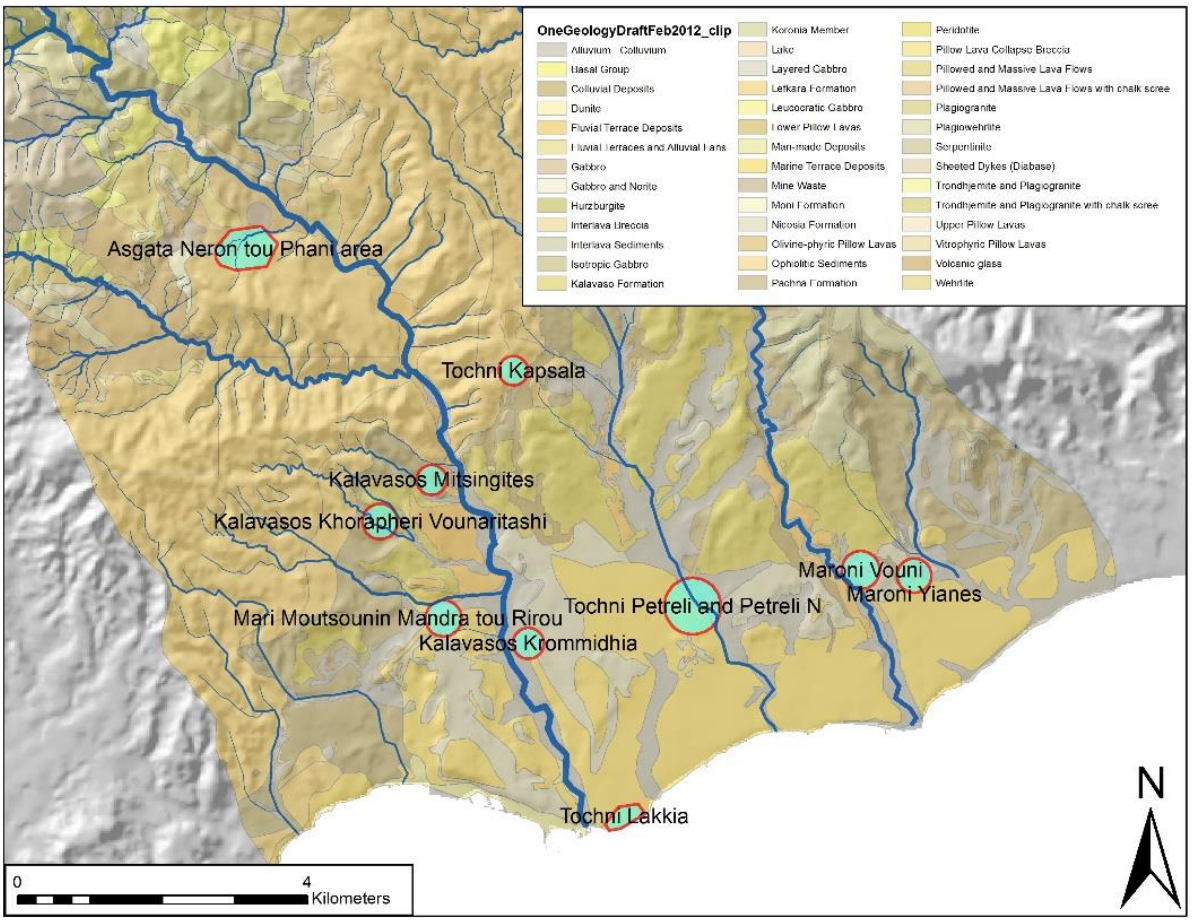


Fig. 5.4. Targeted re-survey sites shown against Quaternary geology

Table 5.6**.** Targeted sites for re-survey, showing period, geomorphological context, possible function of site and area.

Site name	Period (?)[202]	Geomorphological context	Presumed type of site	Presumed area (ha)	Publications
Tochni *Petreli* and Tochni *Petreli* N	CG, CA	Alluvial plain, terrace overlooking channel	Cemetery + settlement	~3.5	*VVP* 9 no. 101, 103 (139-141); Todd 1979: 35
Asgata *Neron tou Phani* and Asgata *Kambos*	Chalco, (MBA), CG, CA	Igneous/sedimentary boundary, hillslope overlooking gully	Settlement + cemetery	1.2	*VVP* 9 no. 109, 110 (30-32); Todd 1989: 44
Maroni *Vouni*	CA	Ridge of marine terrace, near alluvial terrace	Settlement	1.5	Manning *et al.* 1994: 347

[202] The periods listed here focus on the prehistoric and early 1st millennium BCE; later occupations (e.g. Hellenistic, Roman, Late Roman) are prevalent throughout the Vasilikos Valley and are not listed.

Maroni *Yianes*	CA	Coastal plain	Settlement (?)	~0.25?	MVASP map[203]
Tochni *Kapsala*	MC, LC, CG, CA	Hillslope in gypsic aquifer, near alluvium of small drainage	Settlement	3	*VVP* 9 no. 97 (132-33); Todd 1988: 37
Kalavasos *Khorapheri/Vounaritashi* (area D)	CA	Hillslope in gypsic aquifer, side drainage of main river channel	Settlement + industry(?)	0.8	*VVP* 9 no. 37 (58-60); Todd 1989: 47; Johnson and Hordynsky 1982: 65
Kalavasos *Mitsingites*	MC, LC, CG, CA	Alluvial terrace	Settlement	~0.1	*VVP* 9 no. 59 (85-86)
Kalavasos *Mangia* III	LC, CG, CA	Alluvial terrace	Settlement (?)	~0.5?	*VVP* 9 no. 53 (79-80); Johnson and Hordynsky 1982: 65
Mari *Moutsounin/ Mandra tou Rirou*	Neo, MC, (LC), CG, CA	Ridge of alluvial terrace	Cemetery	5.2	*VVP* 9 no. 81 (121-22); Stanley Price 1979: 128-29
Kalavasos *Krommidhia*	CA	Alluvial terrace	Settlement + cemetery	N/A	*VVP* 9 no. 42 (65-66); Johnson and Hordynsky 1982: 65

I then created a GIS spatial database to plot the VVP and MVASP sites using Esri ArcGIS 10.0. Through a collaborative agreement with Dr. Zomenia Zomeni of the Geological Survey Department (GSD) of Cyprus, I received a number of geological, geomorphological, hydrological, and local administrative data, including photogrammetric contours and a 20 m DEM. In addition, two types of remote sensing data were available: 1) already-digitized Quickbird satellite images from the years 2008 and 2011,[204] and 2) aerial photographs taken in 1963 (scanned and georeferenced) by the British Royal Air Force. 1:5000 topographic maps and

[203] This "site" was not identified in Manning *et al.* 1994 but represents an area of density in the MVASP Iron Age density map near the toponym *Yianes*, provided by Sewell and forthcoming in MVASP publication. The scatter is roughly 200 m by 100 m and contained roughly 65 fragments dated to the Iron Age.

[204] Quickbird images are drawn from satellites with orbits at 450 km, allowing for some of the highest resolution data (Parcak 2009: 72).

the relevant cadastral maps also provided useful local landscape information.[205] Sites were then coded for a variety of attributes: elevation, slope, area, distance to the mines, geology, presence of slag, type (settlement, cemetery, etc.), period (relative to the early 1st millennium BCE), and history of occupation (continuity). Using the publications to plot sites without exact coordinates introduced an error in their point placement, which proved a problem when extracting surface raster values. The following locational modeling took into account confidence rankings for sites that were not checked in the field, at 10 m radii at 85% and 50 m radii at 95%.[206]

The selected sites of Table 6 were located in the field with a handheld Garmin Oregon 450 GPS (Global Positioning System). A Leica Viva differential GPS allowed for more detailed topographic surveying of significant features.[207] Locating some sites proved difficult, requiring tweaks to the methodology, a problem that highlights some of the challenges of retrospective survey. Due to land development or the growth of dense *maquis* over the last four decades in the valleys, some sites were no longer located in the same fields (Todd *VVP* 12: 133). In addition, some targeted fields were still under crop, and others now sit within private, fenced-in properties (e.g. Maroni *Yianes*), making the material (if still visible) inaccessible.

[205] Georeferencing for this project entails projecting the data onto the World Geodetic System (Universal Transverse Mercator, UTM) of 1984, 36N. The dGPS data were recorded in the local Cyprus grid (CGCS), which required conversion to the UTM projection in ArcGIS. A discrepancy between the two of roughly 3-5 m was discovered using the CGCS conversion file provided by the Cyprus Institute surveying team (especially Marina Faka). The Department of Lands and Surveys of Cyprus provided the 1:5000 topo and cadastral maps, which have been occasionally updated (most recently in 1996).

[206] Calculated by estimating that sites are not more than 50m radius off of chosen point datum.

[207] Dr. Athos Agapiou and the Department of Civil Engineering and Geomatics at the Cyprus University of Technology generously loaned the Leica in 2013 and 2014.

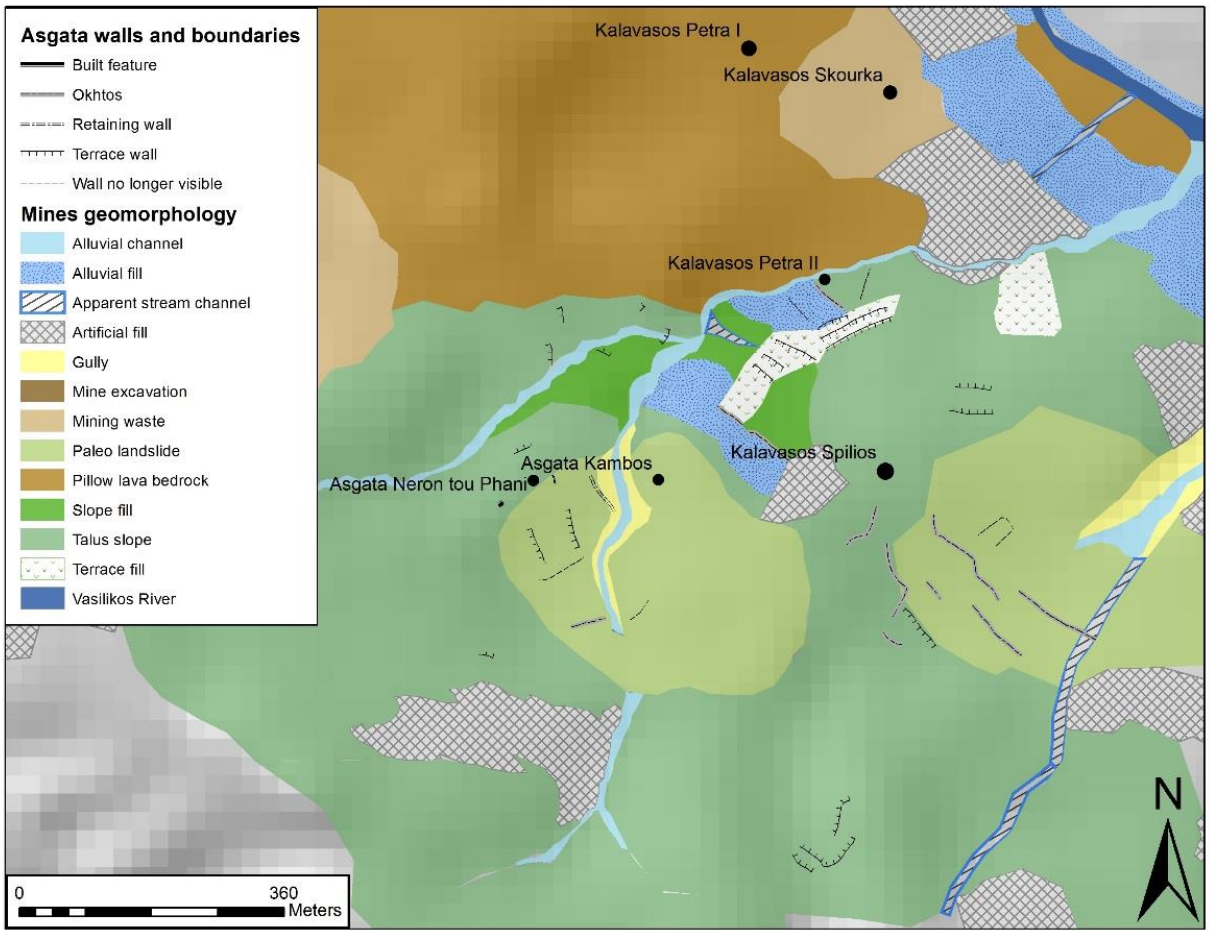


Fig. 5.5. Example of geomorphological map, area of Asgata *Neron tou Phani* in the northwestern part of the VVP survey area.

Notes on landscape features in each area were used to create geomorphological maps, situating sites in relation to landforms such as gullies, igneous geology, or terraces (using Noller 2010; Terrenato 2004: 39; Fig. 5). These maps placed assemblages in their unique positions and guided the placement of further field walking (e.g. Tartaron *et al.* 2011; Wells 2001; Given *et al.* 2013a). At the site of Asgata *Neron tou Phani* in the upper western Vasilikos Valley, for example, the deep-soiled, concave saddle of a paleolandslide was considered one unit bounded on three sides by talus slopes, and broken up into several smaller units for easier walking. The other advantage of documenting the current surfaces of the sites was that it provided a detailed picture of land use with which to compare modern practices to the archaeological assemblages,

in order to account for changes in activity (e.g. Cherry and Davis 1991: 21). The transects were spaced 5 m apart and laid out in N-S axes using a compass, in order to cover the areas without being too time-intensive.[208] For some cases, such as at the site of Kalavasos *Khorapheri/Vounaritashi*, 10 by 10 m units with 2 m transects were placed over areas of dense scatter for a more intensive collection.[209] I combined extensive field walking in ca. 0.5 km areas around the site when possible, to locate off-site scatters as well as features such as walls. All finds in a given transect were counted, and diagnostic material was sketched and photographed.[210]

Results and discussion

One of the most noticeable differences between the re-survey and the original investigations was the spatial spread of material (see Table 7). While the re-survey gave more attention to 1st millennium BCE artifacts than in both earlier surveys, and while visibility ranged from 5% in heavily overgrown slopes or unplowed fields to ca. 90% in recently plowed ones, the results confirm the sometimes dramatic variation over just the last few decades in these selected surface scatters. At the site of Tochni *Petreli* N, for example, the re-survey documented significant densities of material in fields to the north and west of the VVP's original demarcation, surrounding a concentration roughly 1 ha in diameter (Fig. 6). This additional spread of material, while certainly effected by plowing in the associated fields (and the pushing of material to field boundaries), suggests a larger more complex area than proposed by initial extensive field work. The material at *Petreli* N also extends into a depressed former alluvial

[208] On sampling intensity see e.g. Terrenato 2004; Plog *et al.* 1978; Richards 2008: 554-7.
[209] When possible, I had the help of additional people in field walking, especially Jeff Leon and Perri Gerard-Little of the KAMBE project in 2013.
[210] Since my agreement with the Department of Antiquities did not extend to collecting or storing any new survey material, all materials were left in the field after study.

channel, indicating that the site was located right against a former stream whose deeper soils may have covered even more extensions of the settlement. Not every site recorded larger areas, however; at the site of Tochni *Kapsala*, numerous garbage deposits and waste-burning allowed for only a very small scatter of visible material.

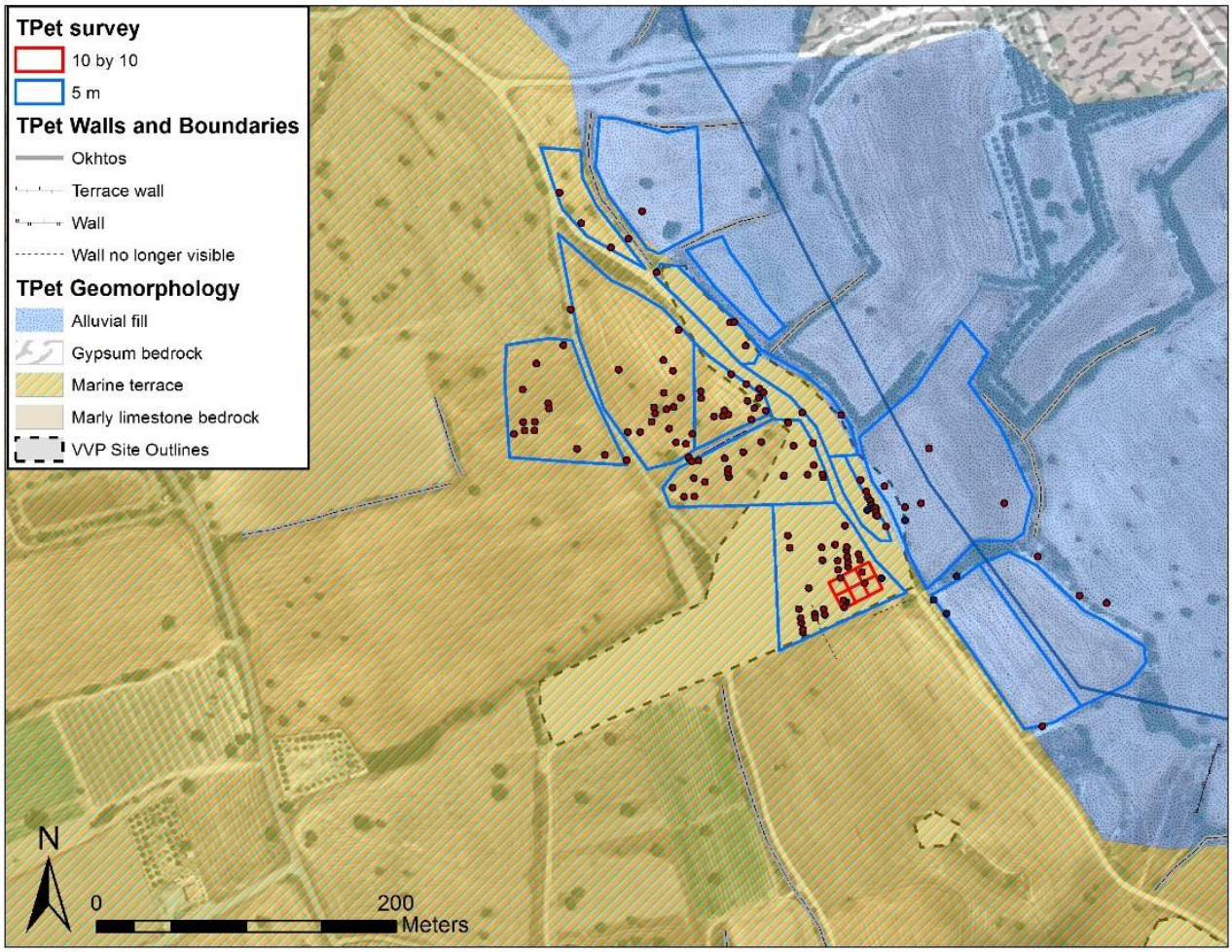


Fig. 5.6. Tochni *Petreli* N scatter, showing VVP site area estimate in hatched lines, re-survey units in blue lines, and re-survey 10 by 10 meter collection units in red block. Each red dot is a diagnostic sherd.

Table 5.7. Changes in site area between original VVP and MVASP estimates and re-survey, calculated as percent change. Visibility ranges calculated as percentage.

Site	Original site area estimate (for CA)	Re-survey estimate	% change	Visibility range	Notes
Asgata *Neron tou Phani* and Asgata *Kambos*	0.81+0.42	2.5+0.4	123+	5-70%	Heavy erosion down slope; numerous built features; stone scatter; core area ca. 0.5?
Tochni *Petreli* N	3.5	4.5	28+	60-90%	Densest area ca. 1 ha
Kalavasos *Khorapheri/Vounaritashi*	0.8	1.5	87+	30-90%	Densest area ca. 0.7 ha; erosion from gypsum depressions; built features and stone scatters
Tochni *Kapsala*	3	0.5?	83-	5-20%	Modern waste dump area; several terrace walls
Kalavasos *Mitsingites*	?[211]	0.1		60%	Pastoral site?
Maroni *Vouni*[212]	1.5	1-2	33- to 33+	30-80%	Heavy erosion down terrace

The re-survey also showed areas of higher density in early 1st millennium BCE material at each of the targeted sites, revealing potential differences in spatial organization and highlighting the effects of erosion and plowing in creating certain distributions. At Kalavasos *Khorapheri/Vounaritashi*, for example, a small but dense concentration of material (avg. 186 sherds per 100 sq m) was surrounded by thinner scatters near the edge of the terrace slope as well as into the plowed field to the east, where significant stone scatters on the surface indicate the likelihood of ancient architecture (Fig. 7). These more off-site scatters might be the remains of small installations connected with the quarrying of gypsum, which underlies the area. At the same time, the evaporitic qualities of gypsum have created a unique land surface that has submerged materials, or sent them eroding down the terrace slope, when the gypsum bedrock becomes oversaturated. Likewise, the site of Asgata *Neron tou Phani*, which overlooks the slag

[211] The VVP 9 description for this site records 1 CG sherd and an undefined scatter of CA material.
[212] Rough estimate from MVASP 50 x 50 m survey blocks.

heaps at Kalavasos *Skourka*, had a dense scatter of material on a slightly raised slope next to the field edge, while smaller assemblages were spread around it both up the talus slope to the east and to the north (Fig. 8). The presence of small built walls in relation to these upslope scatters indicate that not all of the material has eroded downhill, but that parts of the maquis-covered hillslope were used in the past, possibly as retaining walls.

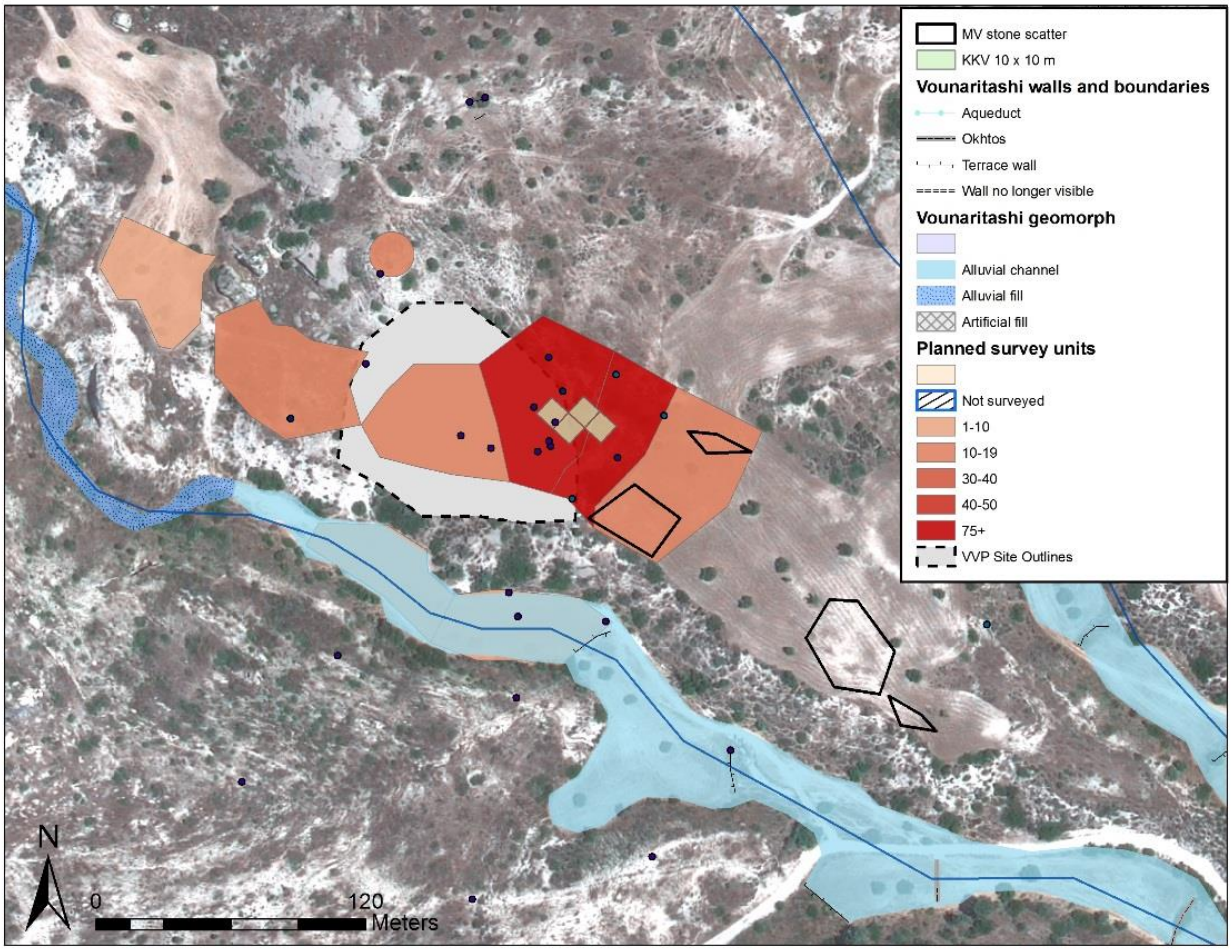


Fig. 5.7. Kalavasos *Khorapheri/Vounaritashi* scatter (also stone scatters in black). Re-survey units coded by distribution of CG and CA material.

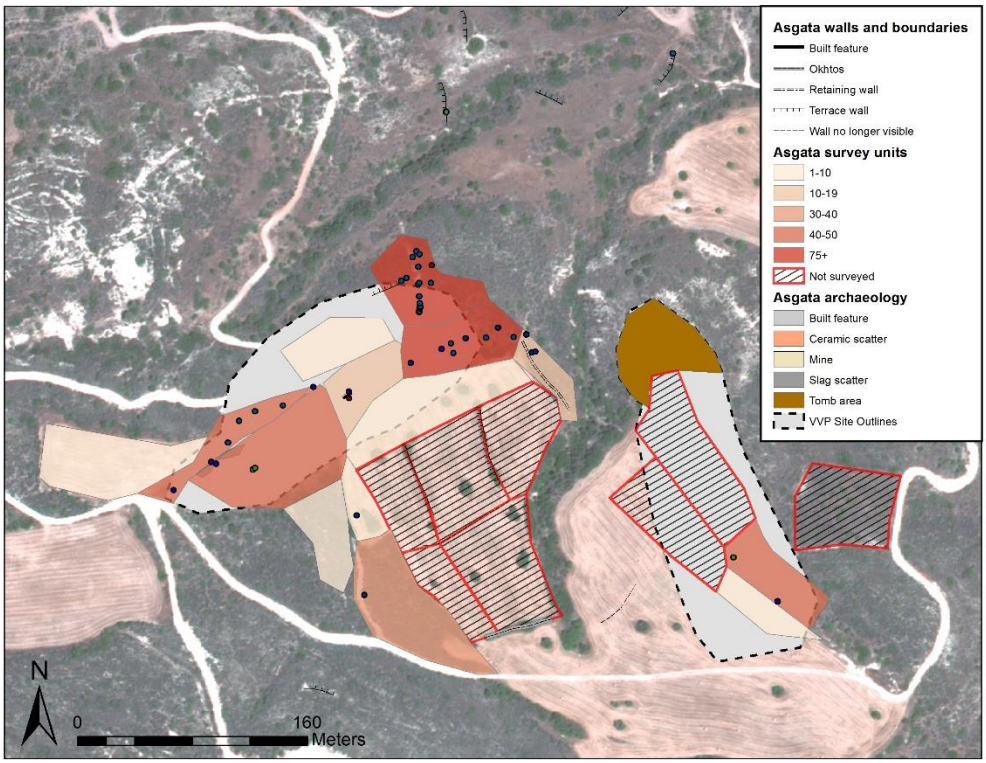


Fig. 5.8. Asgata *Neron tou Phani* scatter. Re-survey units coded by distribution of CG and CA material.

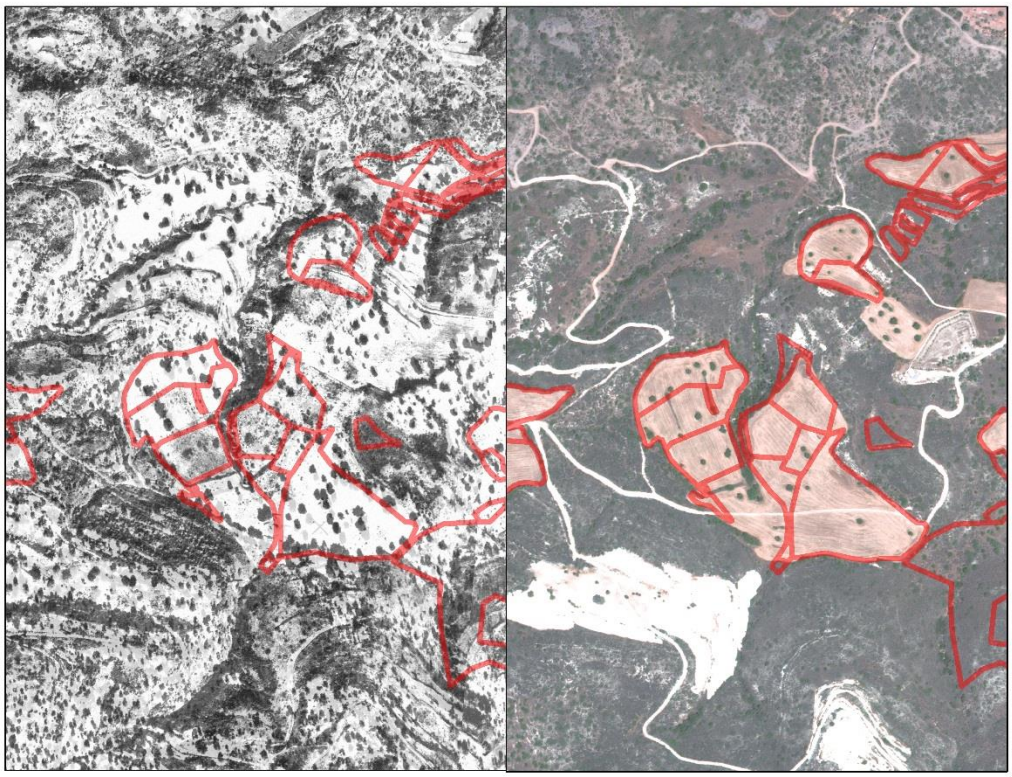


Fig. 5.9. 1963 aerial vs. 2011 satellite image of cultivation change at Asgata *Neron tou Phani*.

Geomorphological observations made at these selected sites further highlight the changes in the region's surfaces since the 1970s, which have contributed to the differences in recorded surface scatter. The expanse of impenetrable maquis growth on limestone soils in once-arable fields is noticeable, particularly in some of the higher elevations in the Vasilikos valley where the vegetation covers what was probably deep soil for cultivation and woodland. Aerial photographs from the 1960s indeed show that around the site of Asgata *Neron tou Phani*, calcareous hillslopes had typically been cultivated, and their plowing in the mid-20th c. had dramatic effects on the surface assemblages seen by the VVP (Fig. 9). These areas now have a thick cover of vegetation like spiny burnet, which obscures the features of previously cultivated landscapes, such as abandoned terrace walls and check dams, and which tends to create pockets of material on exposed limestone (*kafkalla*) outcrops (Fig. 10).

Fig. 5.10. Photo of Asgata *Neron tou Phani* ceramics on *kafkalla* outcrop, remains of wall in right center background.

The "second-generation" analysis of the ceramics likewise provided insight into patterns in material practice throughout the region, whose variances will be the focus of multiscalar analyses in **chapter 6**. Certainly, CGIII (ca. 900-750 BCE) wares were present at more sites than the 3 listed in *VVP* 12, although the evidence of CGI and CGII is still scarce, and the majority of examples were CAI-CAII (750-450 BCE) in date. The cemetery site of Mari *Paliambela*, for example, which Todd recognized as a Neolithic settlement along the Vasilikos River (*VVP* 9: 122-23), had CGIII decorated pottery along with later CAI fragments of fine wares from the looted tombs. This site, situated in the midst of several other 8th-6th c. BCE tombs and cemeteries, might then indicate an initial reclaiming of this part of the valley as a mortuary landscape in the 10th-9th c. BCE, discussed below. While the number is still small, sites with CG material now occupy areas in the distribution map from the upper valley to the coastline (see Table 8).

Table 5.8. Variance in sites with CG material between earlier VVP survey and re-analysis.

Sites with CG material in *VVP* 12 (*VVP* 9)	**Re-analysis**
Tochni *Kapsala*	Tochni *Kapsala*
Tochni *Lakkia*	Tochni *Lakkia*
Kalavasos *Mitsingites*	Kalavasos *Mitsingites*
	Kalavasos *Mangia* III
	Mari *Moutsounin/Mandra tou Rirou*
	Mari *Paliambela*
	Tochni *Petreli*

The ceramics from both valleys also seems to share a similar fabric to those produced around the Amathusian region, based on visual inspection (A. Georgiadou pers. comm.). While there is some evidence of imports into the region from sites around Paphos in the western part of the island, such as at the settlement and nearby cemetery of Mari *Moutsounin/Mandra tou Rirou*, the available data show little connection to centers to the east, such as Kition and Salamis.

Given the important production areas that must have served the center of Amathus, it is not surprising that the Vasilikos and Maroni region participated in the same network, although this assumption does raise interesting questions about the transportation of ceramics into the valleys, a distance of some 20 km, as discussed below. The bias in the collected finds towards decorated wares in both surveys does allow for the possibility of local production in coarser wares, although compositional analysis remains to be done.

The complementary data achieved through the re-survey have further refined the picture of the valleys' ceramic repertoires, and have especially filled out the range of materials catalogued at the selected sites in previous years. As shown in the example in Fig. 11, materials found in 2013-2014 along the talus slope of Asgata *Neron tou Phani* highlight the significantly larger amount of body sherds recorded than the earlier VVP survey, including the presence of coarse storage vessels such as pithoi and amphorae. In some areas, the near absence of diagnostic features such as rims and handles also suggests a potential distinction in parts of the site and the possibility that some were reserved for consumption, with handled bowls and elaborate rims. As explored in **chapter 6**, the more microscalar landscape practices evident in these material distributions can begin to reveal a nuanced local sedentism emerging in the transition to the mid-1st millennium polities, one more complex than previously thought. At the more macroscalar level, how do site location, interaction between sites, and their continuity reflect these changes?

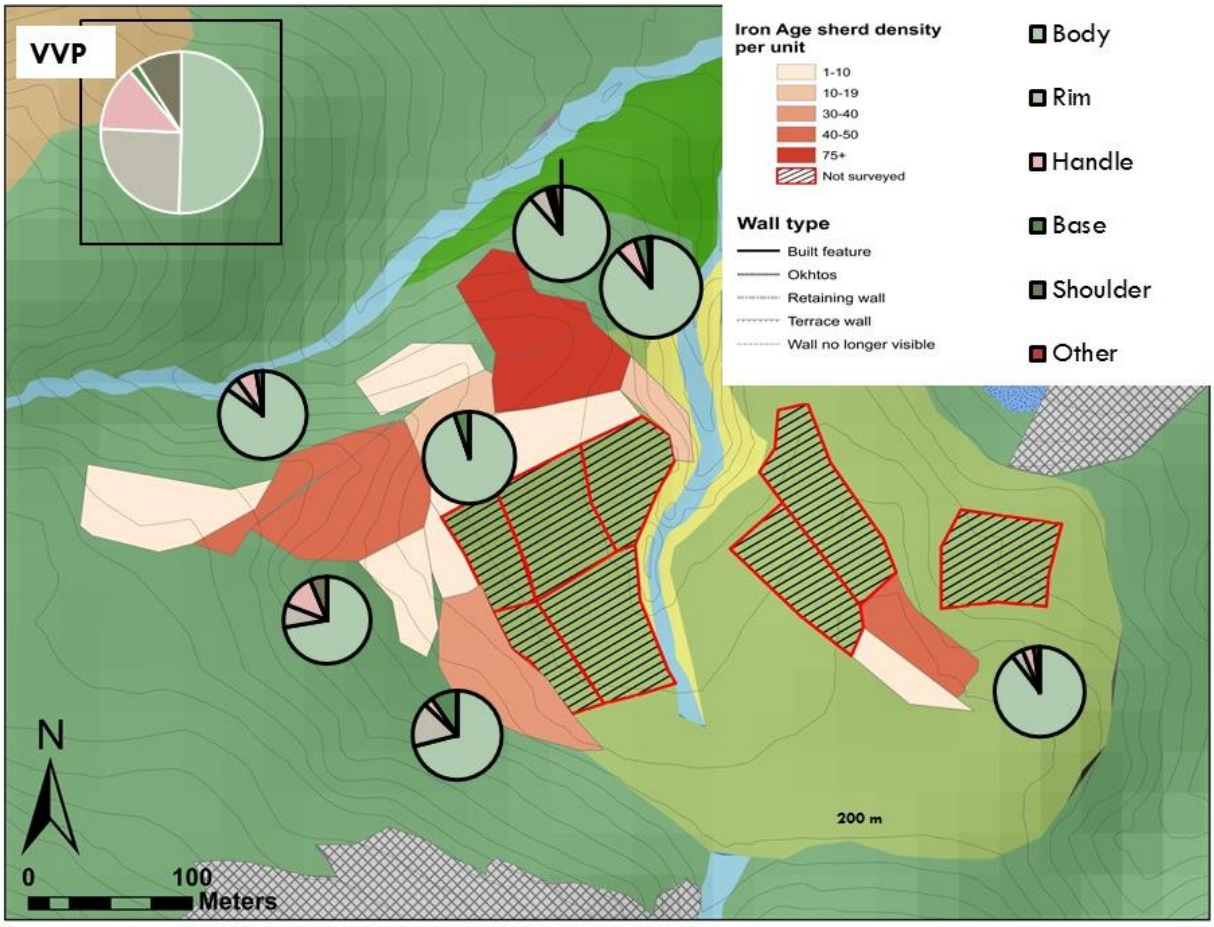


Fig. 5.11. Asgata *Neron tou Phani* survey units coded by distribution of CG and CA ceramics, compared with finds recorded per cadastral plot by VVP (in pie graphs).

Location

As described above, settlements that begin to appear in the 8th c. (CAI) occupy all parts of the two survey areas, suggesting a re-investment of the region that was more indicative of changes in settlement practice rather than just a function of archaeological visibility. What might have directed these inhabitants, given the changing environmental record presented in **chapter 4** toward wetter conditions, to settle where they did? Regression models performed using geospatial software suggest, for example, that the variables of elevation, slope, and aspect

are not very significant in relation to site location (see also Bevan 2002: 27).[213] Settlements and cemeteries of all sizes seem to occupy either side of the Vasilikos valley from the mines to the coast, reflecting a normal statistical distribution of elevation data, since the valley itself trends downward from the igneous foothills (Fig. 12).

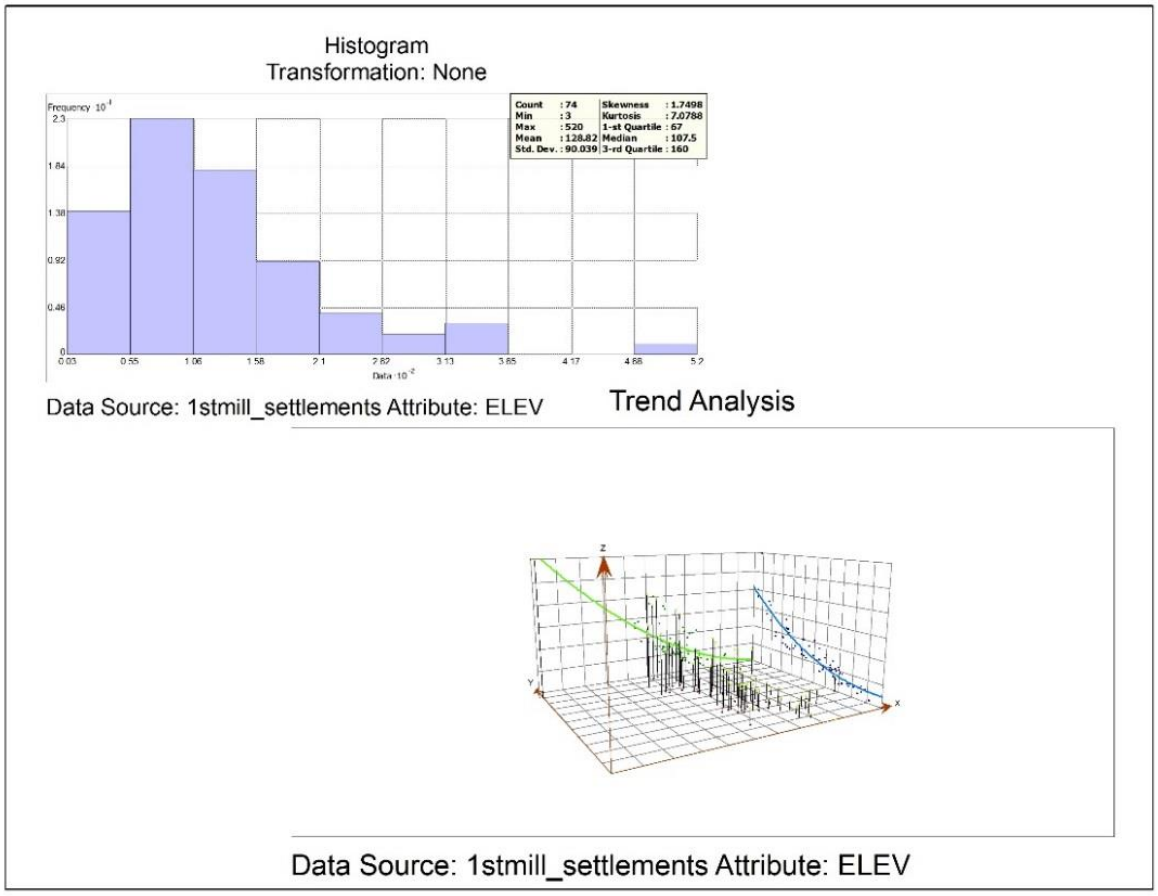


Fig. 5.12. Histogram showing normal distribution of data in relation to elevation and trend analysis showing slope from N to S and from W to E decreasing in elevation

Similarly, an average slope range of 1-10° characterizes the majority of sites, while several small sites under 1 ha in the 17-24° slope range, between 100-200 m asl, may indicate pastoral activity in the form of shelters or sites with pens. Aspect – which cardinal direction a site faces, as typically defined – also appears not to be a relevant factor, since the narrow valleys

[213] Unfortunately at this time the soil data for the region is too roughly resolved to include in regression models.

and the high ridges of alluvial terraces mean that there is no general trend (Fig. 13). Even allowing for the possibility that aspect was conceptualized in relation to the local landscape and not to cardinal directions, the sites do not seem to occupy any particular pattern related to aspect, given the dramatic relief of the region with steep valley walls, foothills, and terraces. While using DEM-derived spatial analysis can be problematic, due to algorithmic interpolation, cell size, and other issues (Bevan 2002; De Reu *et al.* 2011), elevation, slope, and aspect do not seem to be distinct as variables for site location on their own. These observations reveal the complexity of topographic position and the interplay among variables that highlight the statistical problems of confounding and variable redundancy; in other words, how it is difficult to eliminate plausible explanations for the relationships between variables (Woodman and Woodward 2002: 25; see chart 2).

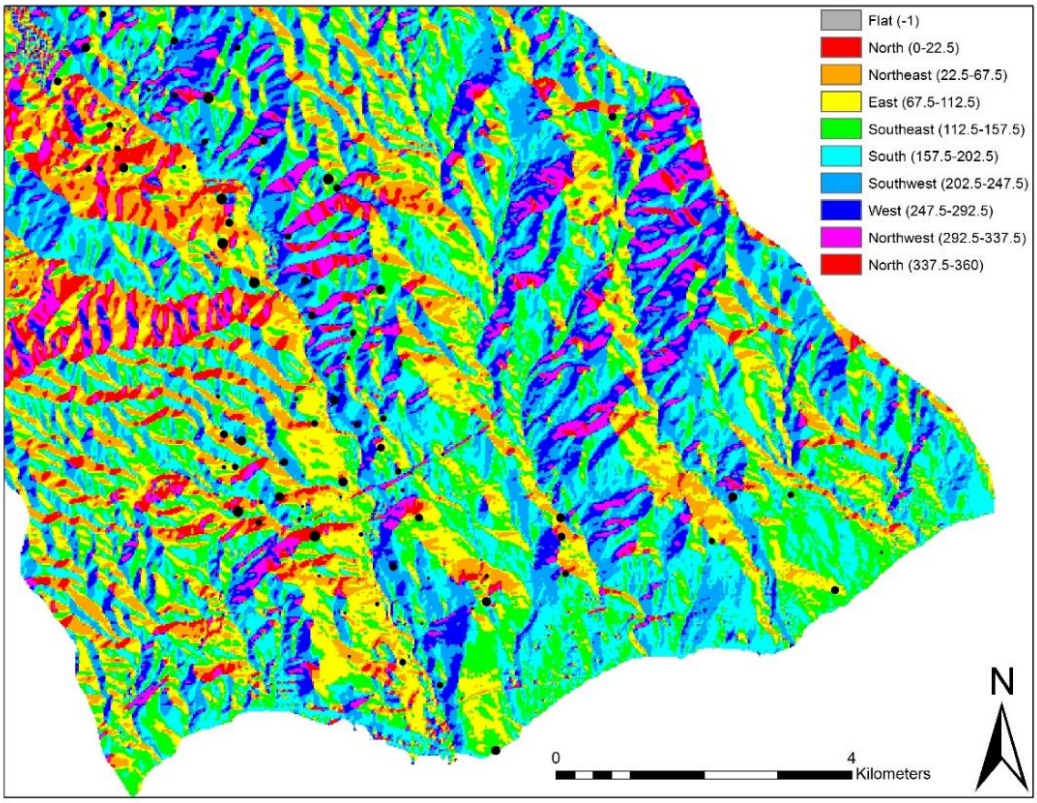


Fig. 5.13. A. DEM-derived aspect surface, showing CG and CA sites ranked by size, created in ArcGIS 10.0.

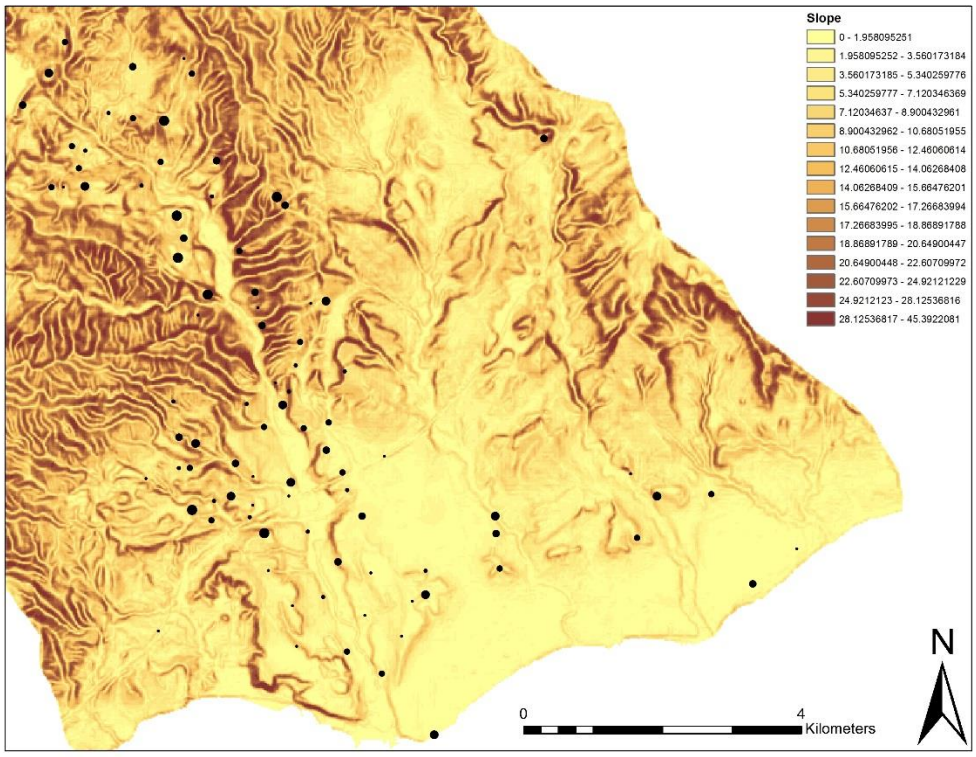
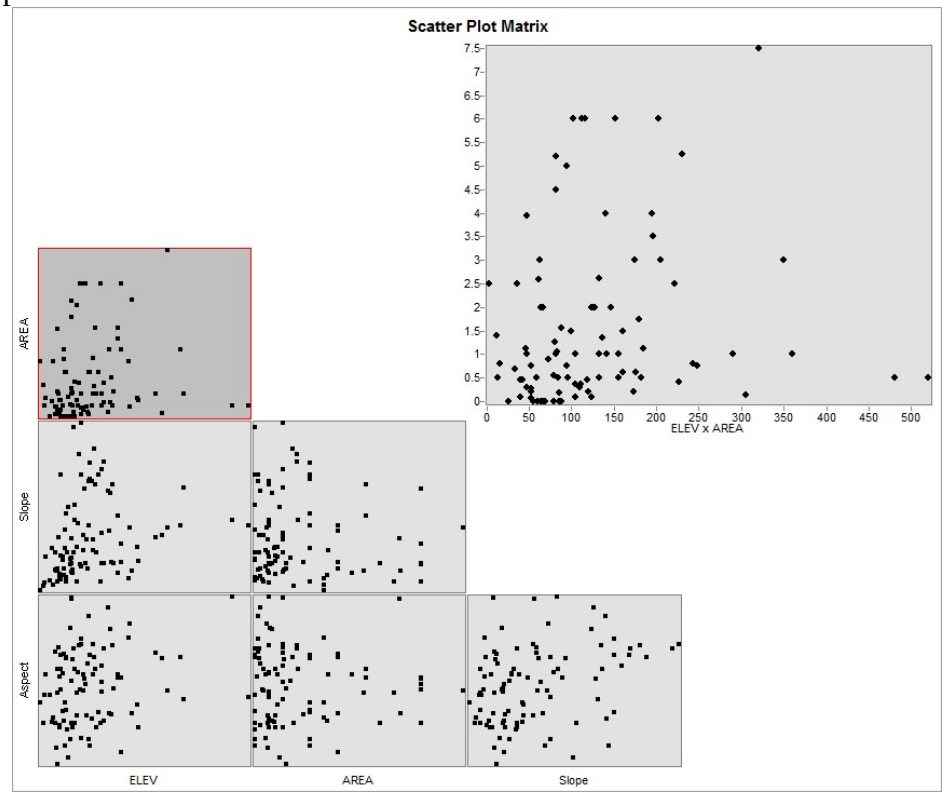


Fig. 5.13. B. DEM-derived slope surface of same area, showing CG and CA sites ranked by size.

Chart 5.2. Scatter plot matrix showing interrelationships between 4 variables: elevation, slope, area, and aspect. Created in ArcGIS 10.0.



Elevation does become important, for example, when considering local hydrology and drainage patterns, environmental elements that do potentially indicate the site-location preferences of a new rural settlement pattern by the 8th c. BCE. As discussed in **chapter 4**, the semiarid climate of Cyprus has always pushed its populations to strategize their water control during the wet winter months, in some cases relying on careful harvesting of run-off, while in others employing sophisticated channel systems to deliver water to villages via a hierarchical access network (see e.g. Given *et al.* 2013: 100; Christodoulou 1959). In the study region, numerous check dams in alluvial channels suggest small-scale water-management practices for run-off agriculture, while the potential argument that the Vasilikos and other rivers may have flowed perennially in wetter periods of prehistory (Gomez *et al.* 1987: 12) - and the 8th/7th c. BCE period is one candidate - suggest that these rivers were a major source of water in addition to smaller side streams.

The position of settlements in relation to these drainages and alluvial channels may therefore supply one measure by which early 1st millennium BCE communities were establishing more permanent and sustainable agropastoral practices. In Andrew Bevan's (2002: 242-3, fig. 17, 21) robust spatial study of rural settlement in the Neolithic period on the island of Kythera in the southern Aegean, models of watersheds and flow accumulation indicate that small farming sites were positioned on the upslope boundaries of small (e.g. < 6.5 ha) drainages for better control of water as well as foundations for buildings (see also Alizadeh and Ur 2007: 156). Watersheds, describing areas that drain through the same outlet point and that can be marked by visually obvious features such as ridges or similar soil characteristics, can inform how sites may have taken the most advantage of the little precipitation in lowland Cyprus. Asgata *Neron tou Phani* in the western part of the Vasilikos Valley is a particularly apt example of a site

overlooking a steep-sided gully and a natural depression, the saddle of a paleolandslide, whose deep soils are still valued for cultivation today (Fig. 6). Numerous terrace walls and abandoned dams point to the need for maintaining soil moisture in the surrounding fields, as well as the possibility that these alluvial channels were once key water resources requiring some maintenance. The site's name, translated roughly as "water/spring of the spirits," may in fact preserve its local importance.

A DEM-derived watershed model was created in Manifold 8.0 to test whether other settlements in the region were similarly positioned near watershed boundaries, keeping in mind the elevation of the site. By calculating minimum flow with an average watershed size of 4.5 ha (in which a flow accumulation model limits how much upstream run-off flows into one drainage), the model shows that 9th/8th c. BCE settlements in the mid and upper Vasilikos valley are on average 50 meters from a watershed boundary (Fig. 14).[214] The placement of most sites near watersheds with higher flow accumulation, rendered in the darker blues in this image, further suggests that settlements were positioned to take advantage of as much run-off drainage as possible, rather than the more eroded watersheds upstream. One area that shows a strong correlation between watershed boundary and site placement is in the western Vasilikos valley along a major side drainage ca. 3 km from the coast (Fig. 15). These drainages, which have high flow accumulation and which connect to the Vasilikos River, reveal a clear pattern of sites on higher ground overlooking check dam systems and arable fields running along the alluvial channels. While the resolution of soil mapping in this region is not adequate, this cluster of sites is in an area with threads of fertile alluvium and calcareous soils that would have been strengthened by the damming of the drainages. This watershed model is less relevant for sites

[214] Modeled in Manifold GIS using a minimum flow of 50.

along the coastal plain, however, since the much lower relief creates few visible drainages but a relatively accessible and flat expanse for cultivation.

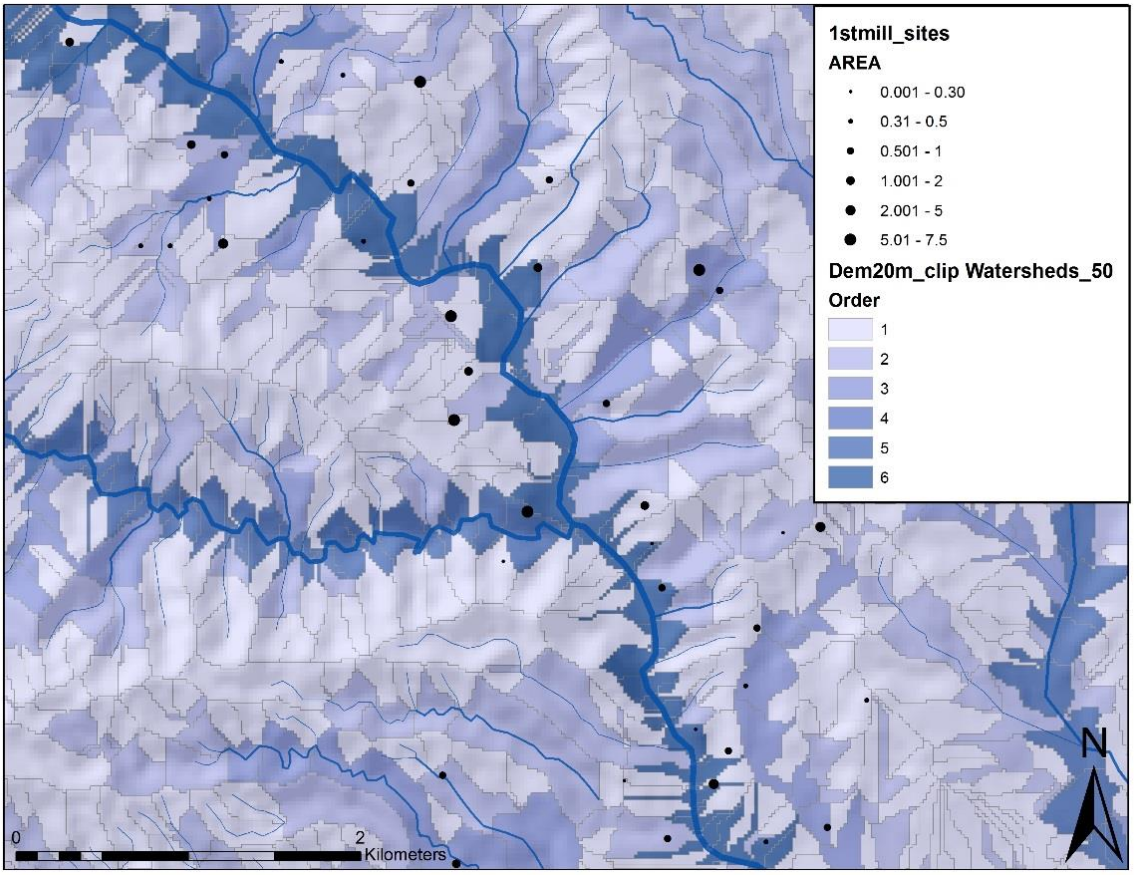


Fig. 5.14. Watershed model (average size 4.5 ha, 50 min flow), coded for order (1-6), and showing CG and CA sites ranked by size.

Another possible topographic variable effecting site location and placement near drainages is the relative ruggedness of the terrain, or more simply a site's relief and its relationship to the slopes around it, falling into a range of lowland or valley bottom, low, mid, and high relief, and ridges (Gallant and Wilson 2000). Terrain ruggedness is often used to categorize landform classifications in geoarchaeology (De Reu *et al.* 2013), and can be expressed by various algorithms such as topographic position index (TPI)[215] and the standard deviation of

[215] Calculated using focal statistics in ArcGIS to create minimum, maximum, and mean DEM rasters.

elevation.[216] Jeroen De Reu *et al.* (2013) have argued that TPI can often be crude in very heterogeneous landscapes, whose landforms are blown out by larger systems, while standard deviation of elevation can reveal more refined variations. In the same case-study of Kythera island's Neolithic rural farmsteads, using terrain curvature to model for ruggedness, Bevan (2002: 241) found that most settlements were in areas of low to medium relief and not in completely flat plains, further supporting the previously modeled preference of small farms for the ridges overlooking manageable drainages.

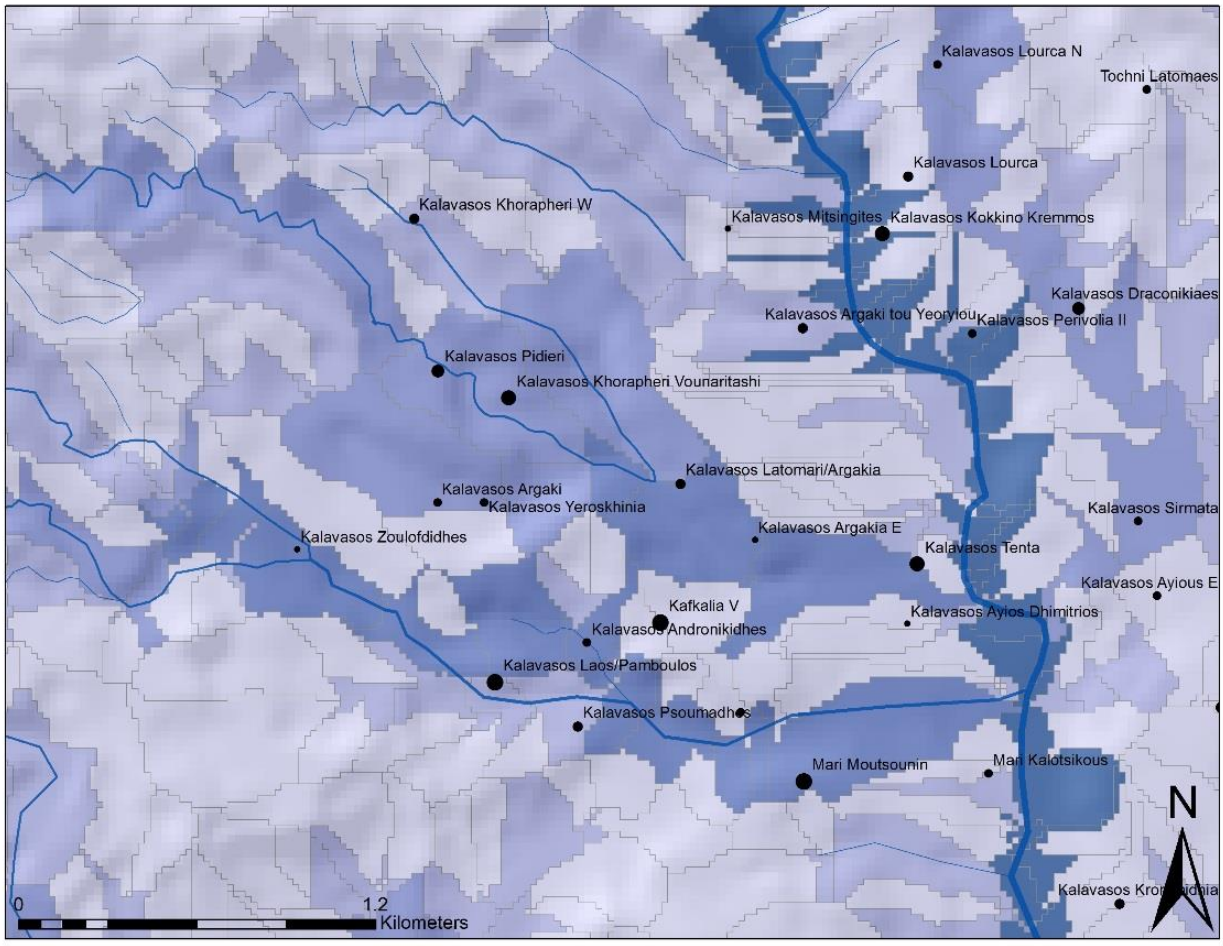


Fig. 5.15. Detail of watershed model (above) showing area around Kalavasos *Khorapheri/Vounaritashi.*

[216] Calculated using TPI raster and standard deviation of elevation (mean DEM and range DEM).

The TPI, DEV, and curvature maps for the lower Vasilikos and Maroni valleys, which variously model the difference of cells from the mean elevation,[217] show the predicted preference of low to mid relief for settlements throughout the region, while some of the cemeteries of the early 1st millennium occupy higher reliefs for presumably greater visibility, as explored below (Fig. 16). Unlike in the Kythera study, however, these measures of ruggedness are statistically less significant for this region, and the lack of a clear correlation between a certain landform and 1st millennium BCE settlements may further indicate that this period saw a new push to extensify cultivation and husbandry in the valley than in the preceding period.

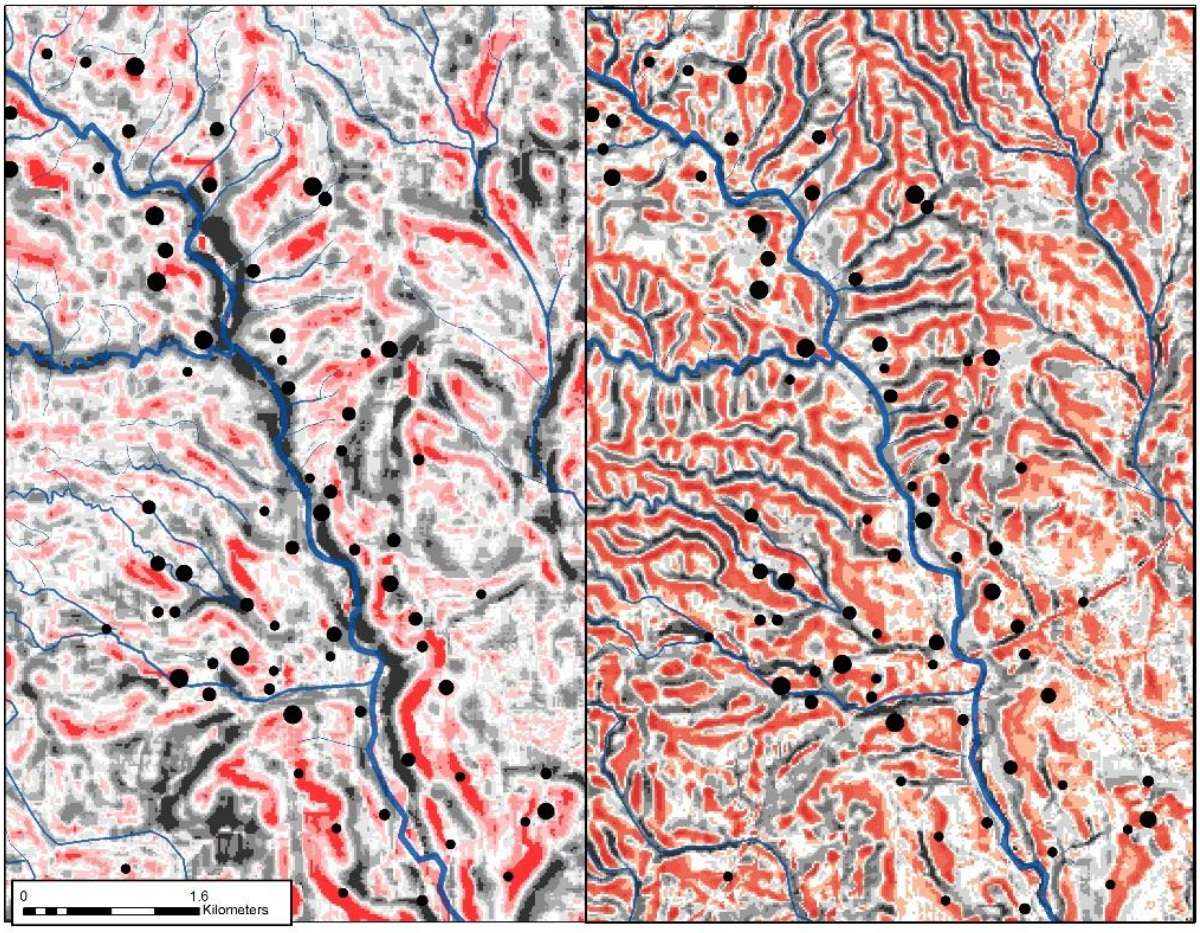


Fig. 5.16. A. TPI (left) and standard deviation (right) surfaces, showing sites ranked by size, created in ArcGIS 10.0

[217] In which positive or greater values are higher than the average and negative or lower values are less than the average.

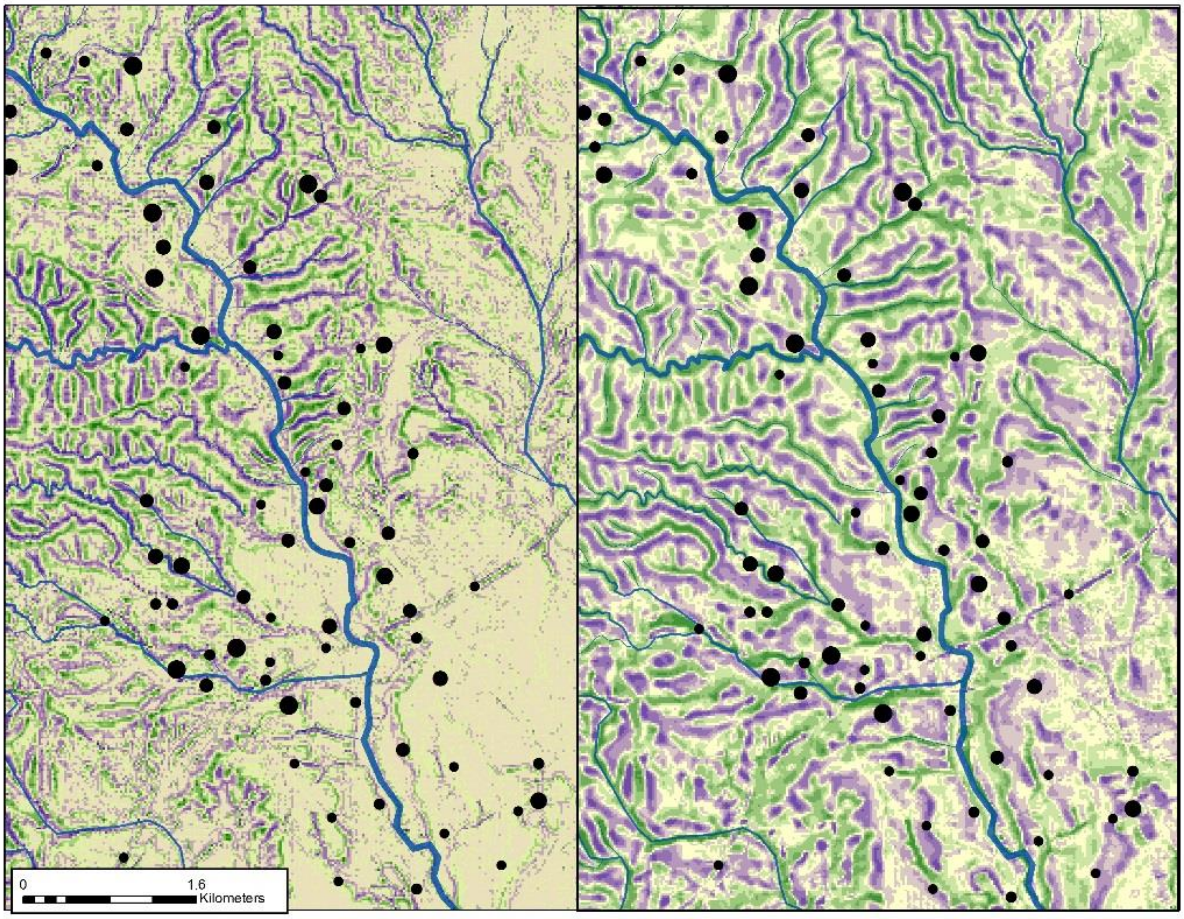


Fig. 5.16. B. Terrain curvature surface (left) vs. standard deviation of elevation (right) surfaces, showing sites ranked by size.

Interaction

Topographic position and locational modeling can indicate how communities in the 8th c. were exploiting different microenvironments in the region, but they fall short of exploring the interactions between settlements in relation to spacing and the potential social order that grouped some together while distancing others. Indeed, the clustering of these settlements provides further support for an emerging sedentism and connections between groups of sites throughout both valleys, in a number of ways. A rough look at the survey data suggests four possible zones: a scatter of sites along the fertile and flat coastal plain, a collection around the alluvial terraces

roughly 4-8 km from the coast where the Vasilikos valley widens out, an additional grouping in the narrow section of the valley along the river channel, and one grouping further northwest at the seam between the sedimentary and igneous regions near the mines (Todd *VVP* 9: 20; *VVP* 12: 105; Fig. 17).

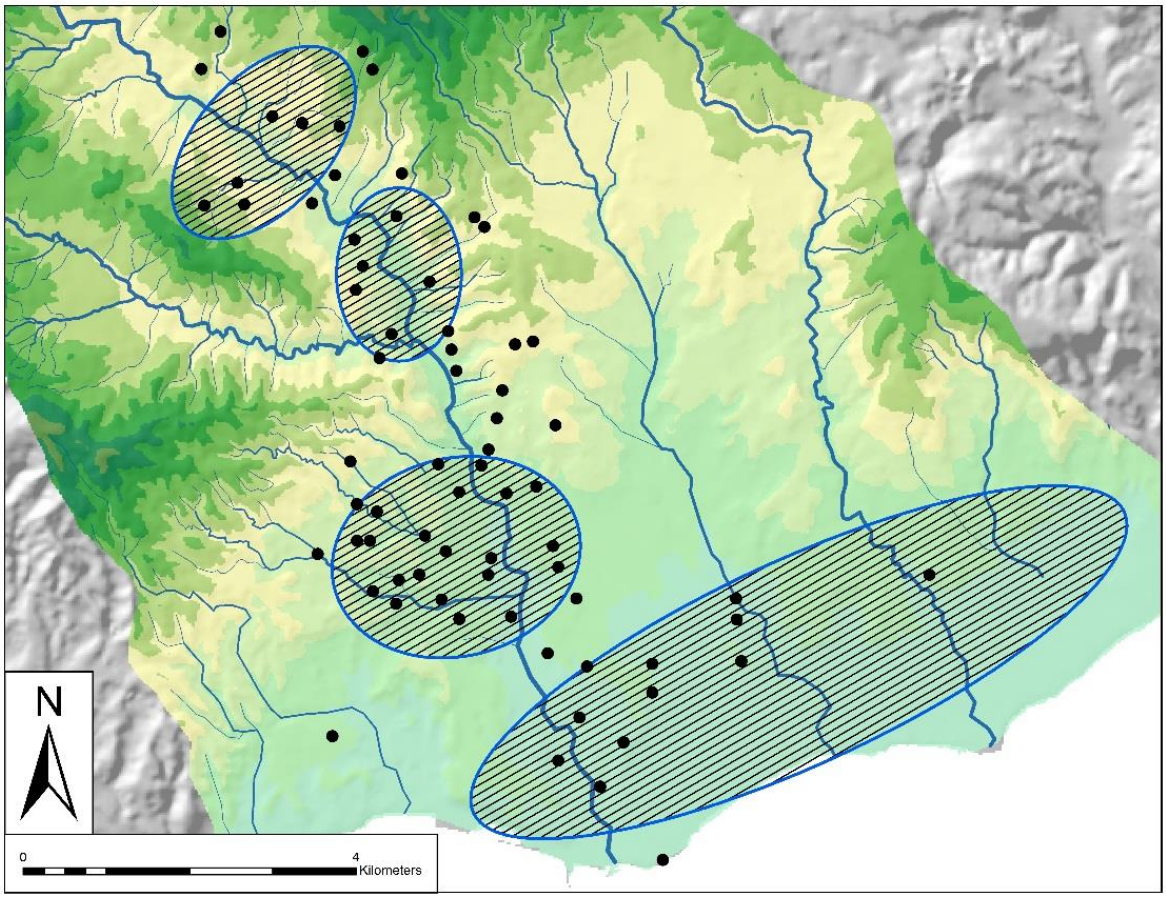


Fig. 5.17. Four possible zones of settlement, shown against Quaternary geology and ranked by size.

The presence of slag found via surveys and its distribution in sites of various sizes within 2 km of the mines area makes clear that by the later 9th c. BCE people in this northern zone were likely cohering around the extraction and processing techniques of metallurgy, as shown by radiocarbon dates of charcoal excavated from the slag at Kalavasos *Platies* (Kassianidou 2013; Fig. 18). This cluster of sites, including the larger assemblages at Kalavasos *Spilios*, with slag

heaps, tombs, and domestic wares, and smaller scatters at Kalavasos *Petra* II and Asgata *Neron tou Phani*, indicate the versatility of communities working the mines and their exploitation of upland drainages for cultivation.

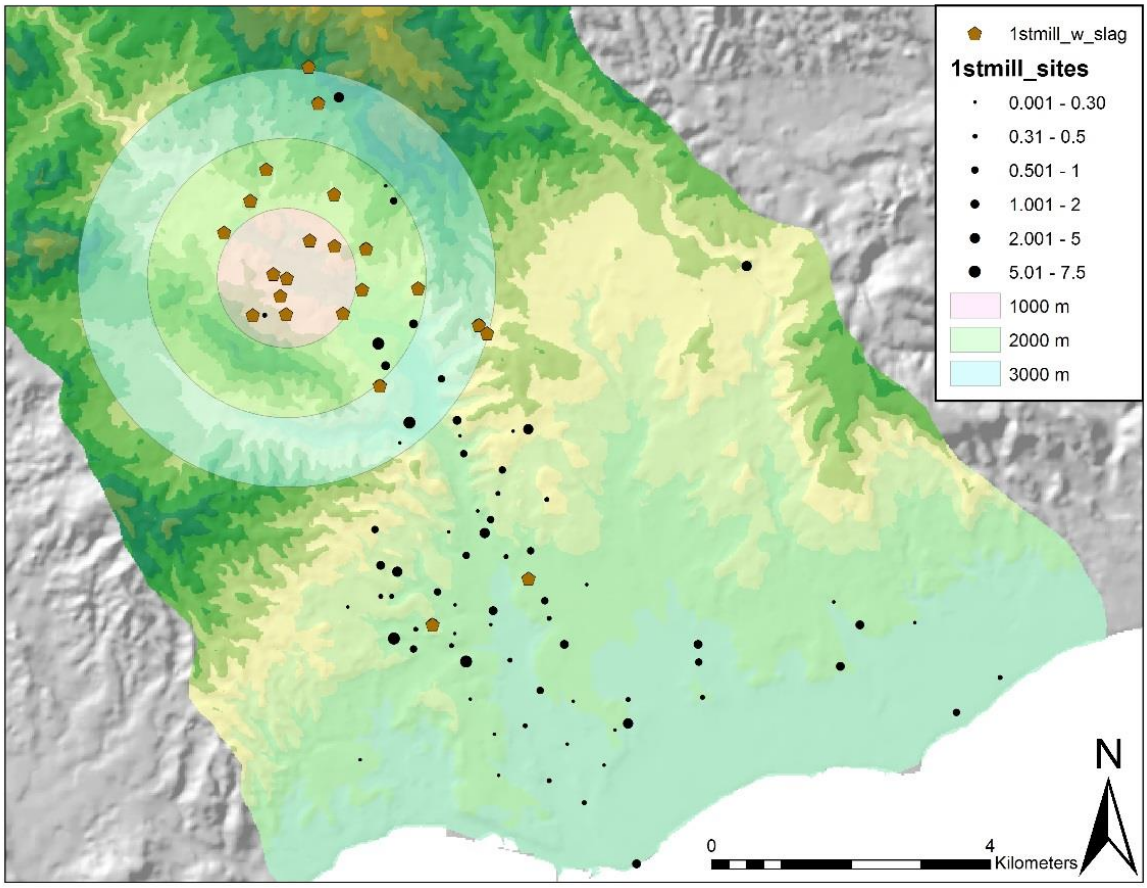


Fig. 5.18. Distribution of slag finds showing distance from mines area, illustrating 1, 2, and 3 k formal buffers (50 m DEM)

Other clusters may represent the nucleation of inhabitants of the region into communities with smaller surrounding sites managing water resources, farms, animals, and other connected places.[218] The distribution of sites of over 2 ha (again problematic because of scatter size

[218] The archaeological evidence from 1st millennium BCE Greece shows a similar trend in nucleated settlements, even with a reliance on agricultural economies (M.H. Jameson [1990] Private space and the Greek city, In O. Murray and S. Price (eds), *The Greek City from Homer to Alexander*, 171-5; cf. Horden and Purcell 2000: 92). See Harris 2005a and critique on town vs. country population estimates.

estimates) in relation to potential farming or pastoral installations further highlights zones of dense occupation in the fertile alluvium of the two river systems, particularly in the area in the southwest of the Vasilikos valley, to the east of the modern limestone quarry, where several sites are densely packed within ca. 3 sq km. On either side of a smaller drainage channel, the 2+ ha sites of Kalavasos *Laos/Pamboules* and Mari *Moutsounin/Mandra tou Rirou* sit between 80-100 m asl on the edges of terraces overlooking at least four other smaller settlements and one cemetery (Fig. 19). Given their placement in the corridor running roughly east-west across the Vasilikos and Maroni valleys now used for the major island highway, this example may reflect the building of new communities in one or two villages, with control over arable land and small (ca. 5 ha) drainages, and with position over a particularly accessible route through the region.

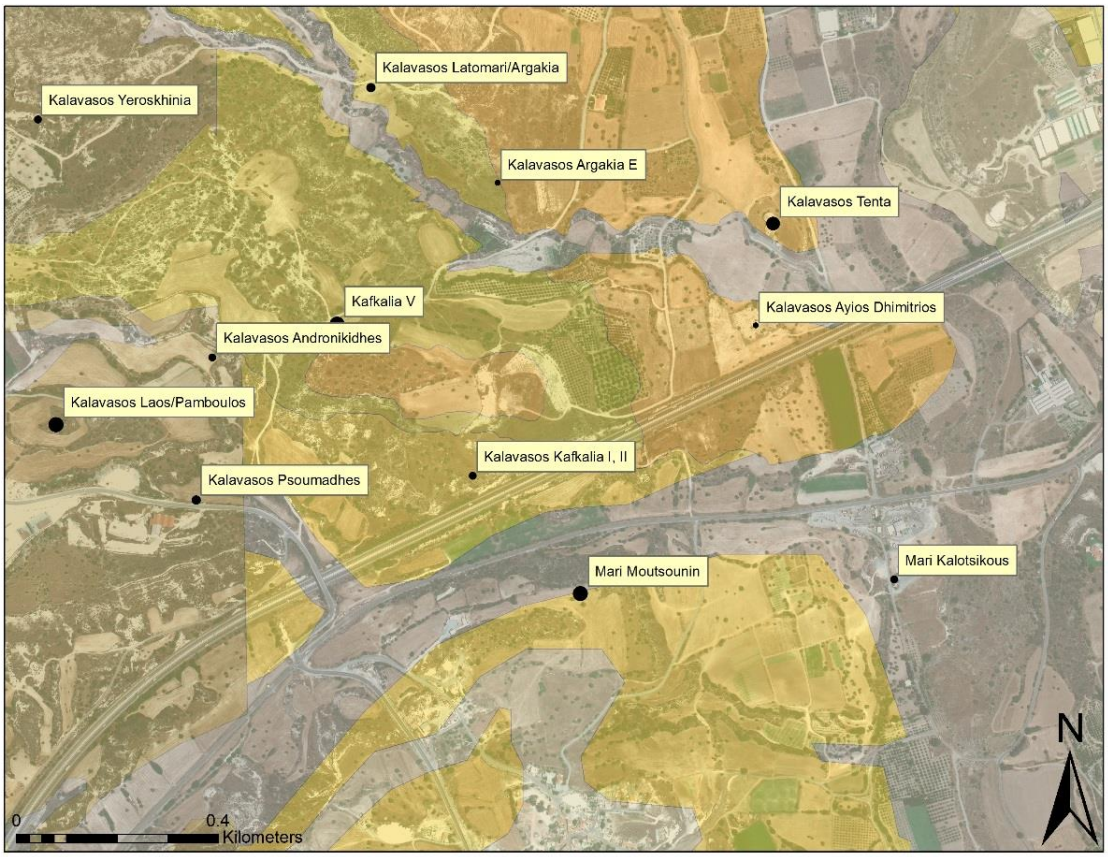


Fig. 5.19. Area of several CG/CA settlements and tombs, ranked by size), positioned in communications corridor just north of Mari village (as seen by Limassol-Nicosia highway running NE-SW), shown against Quaternary geology.

The potential aggregation of sites near important access routes raises questions about how materials and goods were moving during this transition to more sedentary, permanent practices. There is evidence from the much later Roman (LR) period of an important island route running along the coast near the modern village of Zygi, with a probable road connecting the shore near the mouth of the Vasilikos up the river to the LR town of Kalavasos *Kopetra* and further toward the mines (Bekker-Nielsen 2004; Rautman *et al.* 2003; Mitford 1980). But how did accessibility manifest in the earlier 1st millennium BCE, when settlements had started to occupy some of the major side drainages again and were clearly participating in the use of objects made near Amathus? The site of Tochni *Lakkia* on the coast, now under investigation by the Cyprus Ancient Shoreline Project,[219] which has evidence of early 1st millennium BCE imports and a presumable anchorage, may have served as one gathering point where people in the region could gain access to nonlocal goods. The sites of Kalavasos *Laos/Pamboules* and Mari *Moutsounin/Mandra tou Rirou* may have then been places of access, given their size and visibility, or possibly even places of surveillance (e.g. Letesson and Vansteenhuyse 2006).[220] Similarly, the 3 ha surface scatter of Kalavasos *Kokkino Kremmos* on the east side of the Vasilikos River, surrounded by smaller scatters up the valley slope, may have directed access for sites further up the river, particularly the larger concentrations at Kalavasos *Laroumena*, *Malouteri*, and *Yirtomylos*.

For sites around the mines such as Kalavasos *Spilios* and Kalavasos *Markotis*, the river may have been one of several routes of communication to the coast, especially if local mining practices were connected to those of the valley to the west and the slag heaps at Kalavasos

[219] Directed by David Sewell with Georgia Marina Andreou.

[220] Of course without excavated architecture, this sort of proposal is completely conjectural, although an important aspect to keep in mind.

Platies. It seems likely (without investing in DEM-derived cost surface analyses), that some materials may have followed the higher ridge system connecting the Vasilikos valley to the northwest as modern access routes show today. Interestingly, the ca. 4th c. BCE rendering of Cyprus' road systems in the Peutinger map does indicate a communication route from Amathus to the inland polity of Tamassos in the Troodos mountains, cutting northeast up through the igneous foothills and arguably stopping at the important mines and metalworking areas of Kalavasos *Platies* and *Skourka* (see Bekker-Nielsen 2004). Of course, projecting the Peutinger Tablet's route system onto the early 1st millennium BCE is problematic, given the ways in which people are constantly creating and re-creating new paths through practice (e.g. Gibson 2007). Rather than assuming that the Vasilikos and Maroni valleys were always oriented towards the coast, however, it seems likely that additional lines of access outside of the region were in the north, a question that will be taken up again in **chapter 6**.

Continuity

As discussed above, the placement of sites during the early 1st millennium BCE and their interaction with preceding occupations can reveal possible social, cultural, and political motivations, in addition to the re-use of existing landscape features such as terrace walls, groves and orchards, and cleared hillslopes. This latter form may suggest the sustainability of some agropastoral installations (e.g. Davis 2004: 33 in the Nemea Valley of Greece), or a more cyclical re-use of some landforms in periods of more rainfall and more reliable cultivation. In the turn to a more settled, populated countryside by the 9th/8th c. BCE, several patterns emerge for settlements, their associated cemeteries, and their ritual places that speak to complicated connections to, and disconnections from, the past.

The rough "continuity code" enumerated above (see Table 5) is a heuristic measure, not a conclusive reconstruction of past practices, given the likelihood of changing "windows of accessibility" with surface remains. Nonetheless, the data indicate that some of the largest surface scatters of 1st millennium BCE material (e.g. 2-5 ha) show the continuous re-use of these sites since the 2nd millennium (through the MC, LC, and CG periods). This long continuity suggests the possible nucleation of populations in a handful of sites during the transition to the 1st millennium BCE, after the abandonment of the larger centers of Kalavasos *Ayios Dhimitrios* and Maroni *Vournes*. While none of these sites have been excavated, their continuous re-occupations may also indicate preference for the local surroundings, as they tend to occupy the middle of the valley on low to mid-relief near the above-mentioned communication routes and the river. Conversely, sites that show the largest gap in occupation, for example with both Neolithic and then much later CA presence, tend to be the small, <1 ha sites at higher elevations, perhaps alluding to the expansion in the 1st millennium BCE to engineer farther landscapes with small-scale farming or animal husbandry that were deemed not viable during the 2nd millennium BCE. Similarly, sites that were newly established in the 1st millennium BCE show no consistent pattern with size, re-affirming that groups were creating spaces for a range of practices in addition to inhabitation, such as shepherding, quarrying, cultivation and water control, and mining.

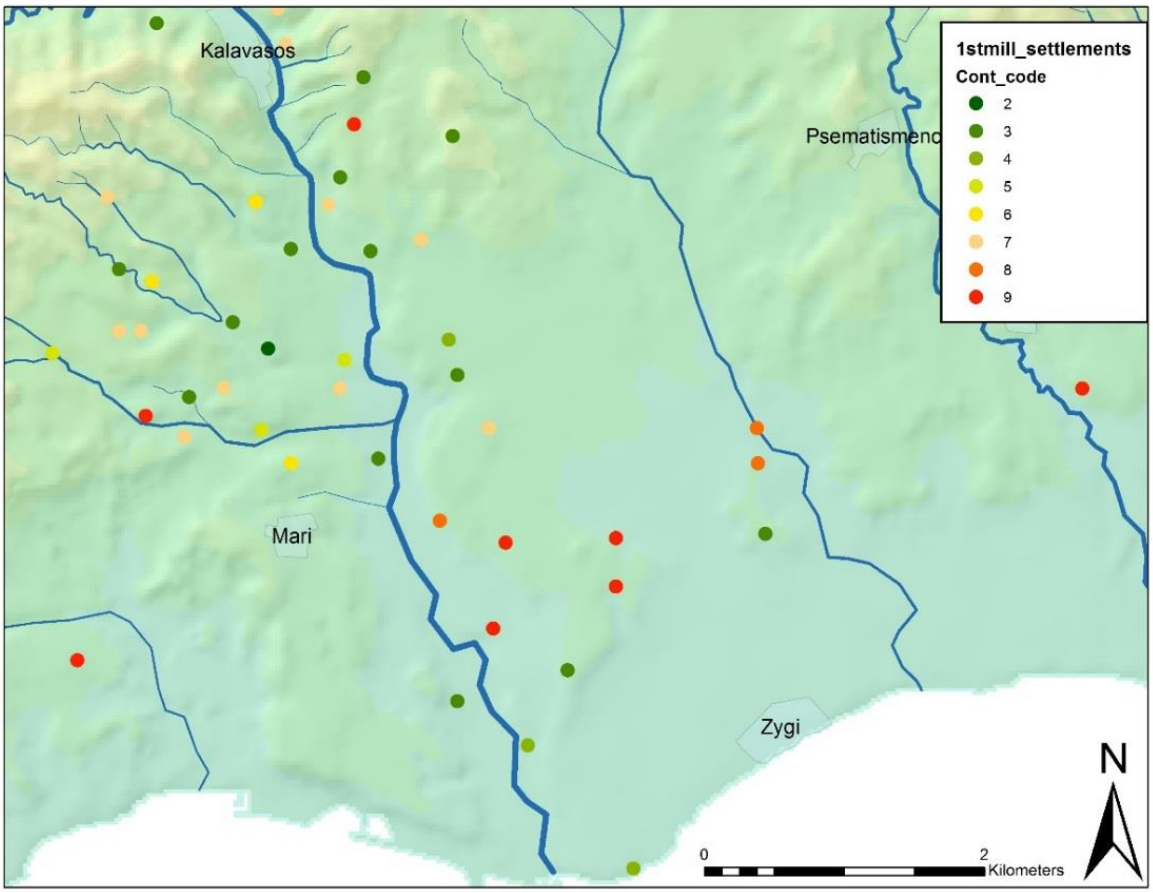


Fig. 5.20. Settlements coded by continuity (see Table 5) in the southern Vasilikos Valley.

If we reconsider the possibility of emerging social boundaries by the 9th c. BCE that aligned with more sedentary practices in the region, it is interesting that sites that appear to be newly established in this period do fall into clusters. South of the main east-west access route, as noted above, is a new cluster of ca. 5 settlements occupying the alluvial terraces that broaden out into the coastal plain, a micro-region whose rapid 20th c. development has likely obliterated the remains of an even more intensive settlement pattern (Fig. 20). Following the above discussion of access to the coastal markets, this zone may have emerged to take advantage of the position between anchorages like Tochni *Lakkia* and routes further inland towards the mines. These settlements may also have aimed to control, or monitor, the movement of goods up and down the Vasilikos River. The area within 2 km of the mines and slag heaps, on the other hand, shows a

significant number of assemblages with direct association with prehistoric occupation, further affirming the diachronic interest in metallurgy and the possibility of a zone of settlements that integrated mining and metalworking with cultivation and pastoralism (Fig. 21). Similarly, settlement evidence in the zone around the modern village of Kalavasos, ca. 4-8 km from the coast, also presents a complicated re-use of earlier sites that took advantage of the narrow valley slopes for terracing.

The one site that seems to stand out for its potential longevity, and continuity with the end of the 2nd millennium BCE, is the coastal site of Tochni *Lakkia*. Its position near the mouth of the Vasilikos River at the coastline suggests a possible harbor or site with maritime connections, and its assemblages indicate a rich variety of LC and CG wares, both utilitarian and decorated, and various imports (A. Georgiou pers. comm). Even allowing for a significant coastline change due to climate and erosion resulting from the modern development of the Vasilikos cement factory immediately next to the site, the site was very likely intended to facilitate maritime trade and likely offered some form of anchorage. The remains of buildings with plaster floors, as well as the presence of kilns and anchors, attest to the multi-functionality of this presumably important coastal node and its importance for communities transitioning to the 1st millennium BCE.

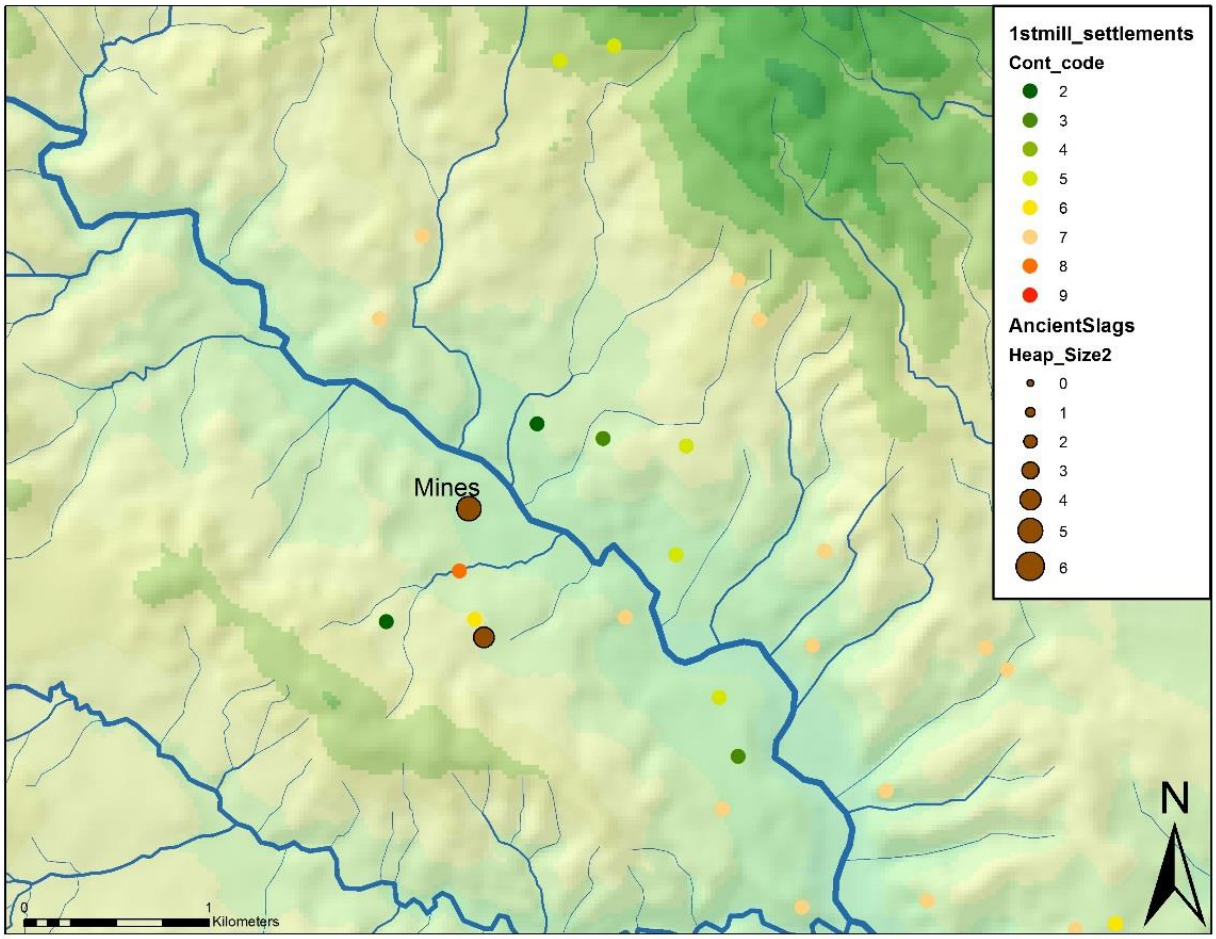


Fig. 5.21. Settlements coded by continuity (see Table 5) in the area of the Kalavasos mines, as well as slag heaps ranked by size.

The patterning of cemeteries in relation to previous occupations of the region also appears to support a new 1st millennium BCE permanence. Due to the widespread focus on mortuary contexts of the 11th – 8th c. BCE across the island, it is fairly clear that a distinct shift occurred in the practices associated with burial, most visibly in the extramural placement of cemeteries away from the center of villages to prominent places outside them, even in rural areas (Janes 2013: 151; Iacovou 2014a: 668). In addition, the typical rock-cut tombs constructed after the 11th c. BCE feature a long entranceway (*dromos*) and multiple burials, with spacing that suggests the importance of visual markers of identity, via monumental construction or large

decorated stelae (Janes 2013: 158-9). And, even with slight regional variation in traditions, there seems to be an Iron Age preference for placing clusters of tombs on higher ground overlooking a settlement (e.g. at Kouklia, Iacovou 2008c). Sarah Janes (2013) has argued that at Amathus, for example, the extramural burial sites of *Anemos* and *Ayia Varvara* would have been visible from the hinterland or from the sea, and monumental tombs to the north of the town were placed to make conspicuous statements of power to those approaching the city.

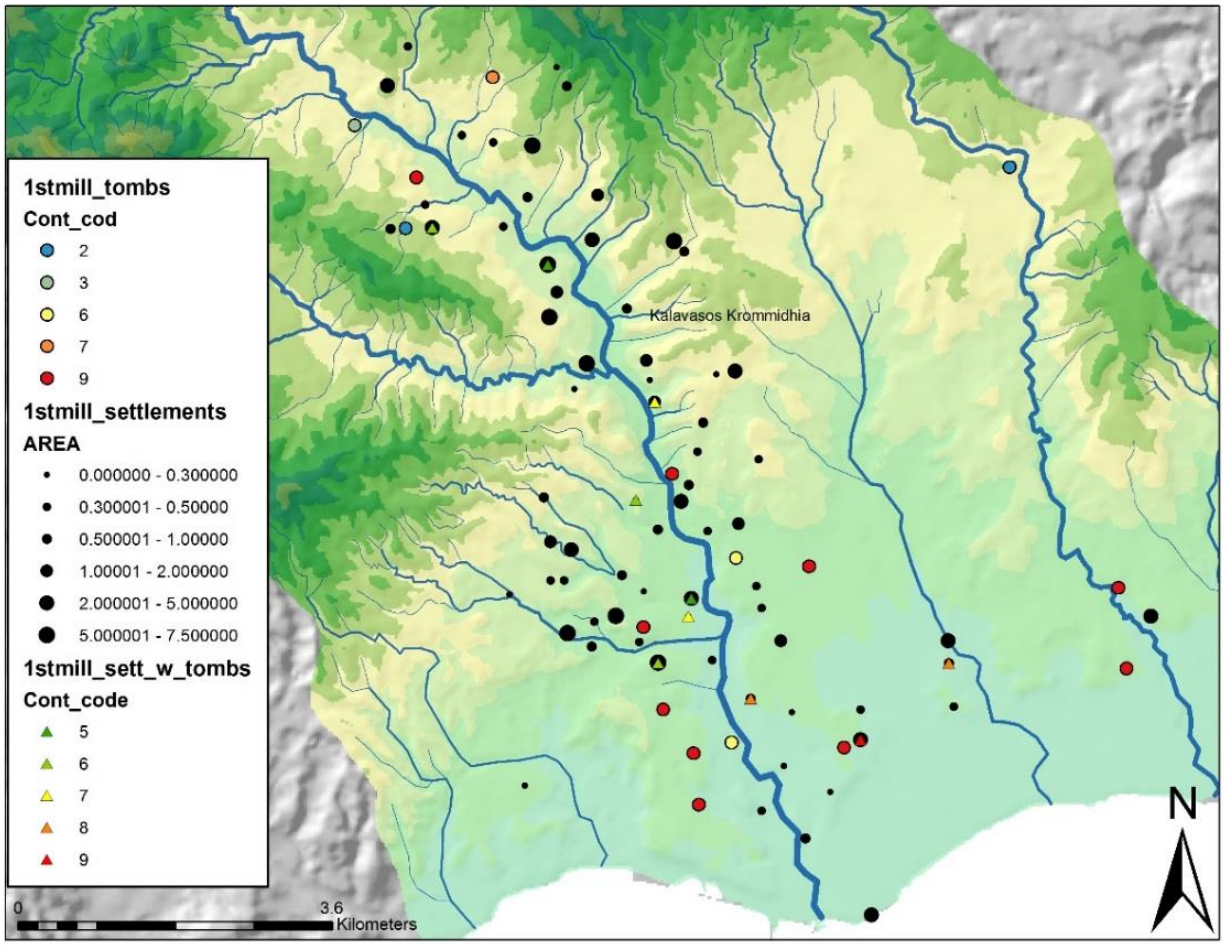


Fig. 5.22. Survey region with CG/CA settlements, ranked by size (black circles), with tombs, coded by continuity.

Most of the tombs and cemeteries in the region show signs of looting, while single tombs have been excavated in the villages of Mari (Hadjicosti 1997b) and Maroni (Karageorghis 1972).

From these data, the mortuary landscape of the region shows a marked separation of burial places from sites of earlier occupation and practice (Fig. 22). Although there is evidence at Kalavasos *Ayios Dhimitrios* and Maroni *Vournes* for the insertion of later CA burials (South 1997), for example, perhaps an indication of ancestral veneration as at some other early 1st millennium BCE sites (Janes 2013: 158; Hatzaki and Keswani 2012: 318-19), there is a large percentage (roughly 2/3) of 9th-8th c. BCE tombs and multi-tomb cemeteries in places with no connection to earlier periods. These newly established burial places tend to cluster in the lower part of the valley between 50-90 m asl, especially in the area around the modern village of Mari, and likely served the new settlements nearby.

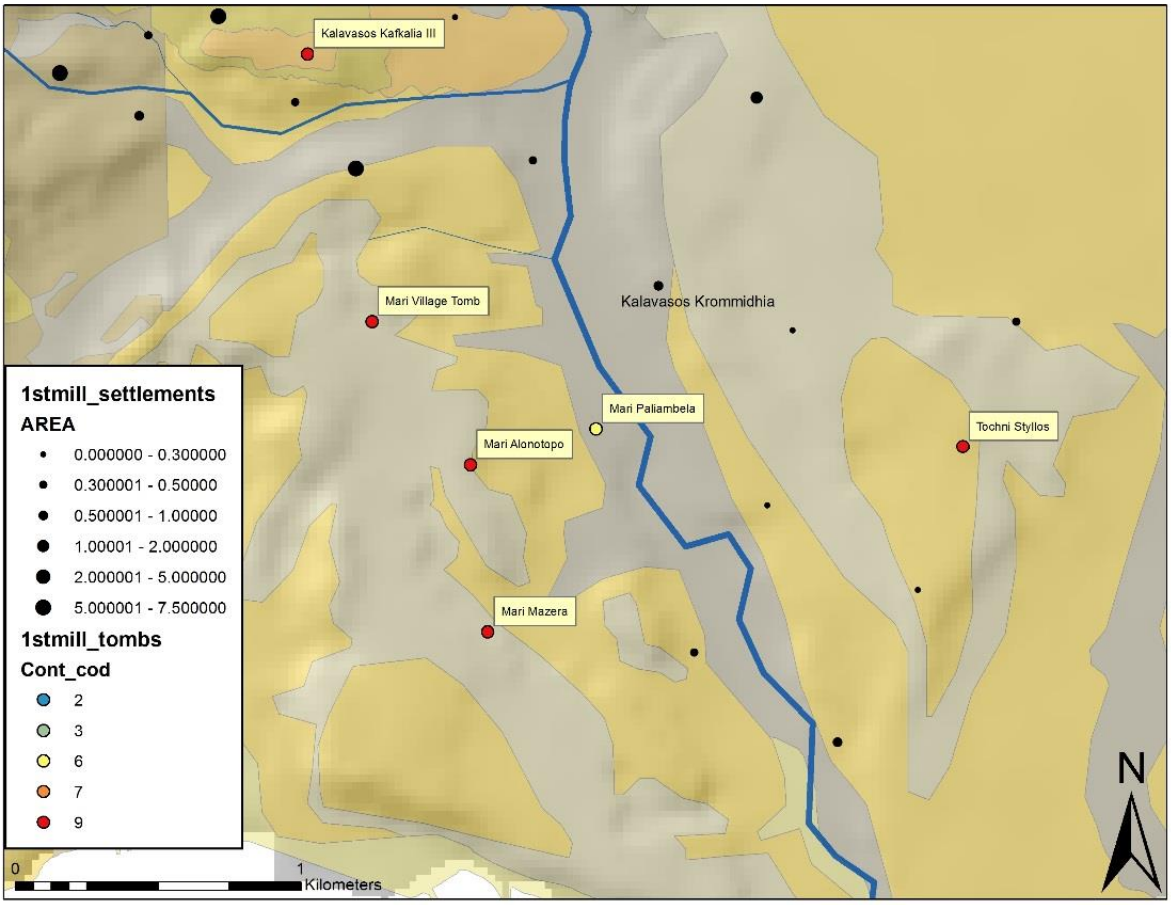


Fig. 5.23. Cemeteries near Mari, coded by continuity (see Table 5).

One cluster of tombs in this area suggests a new mortuary place-making enterprise. The sites of Mari *Mazera*, *Alonotopo*, *Paliambela*, Mari village (Hadjicosti 1997b) and Tochni *Styllos* all occupy slightly higher relief on either side of the Vasilikos valley (Fig. 23). Are they encircling some site, and were they meant to be seen from the hinterland? No large (>2 ha) site sits in the midst of this ring, although several are positioned to the north, in the corridor between the Mari plateau and the narrow Vasilikos valley channel near the village of Kalavasos. Interestingly, simple cumulative viewshed analyses from the settlements around this cluster of tombs and cemeteries in the lower part of the valley suggest that the site of Kalavasos *Krommidhia* has the most commanding view of them (Fig. 24).

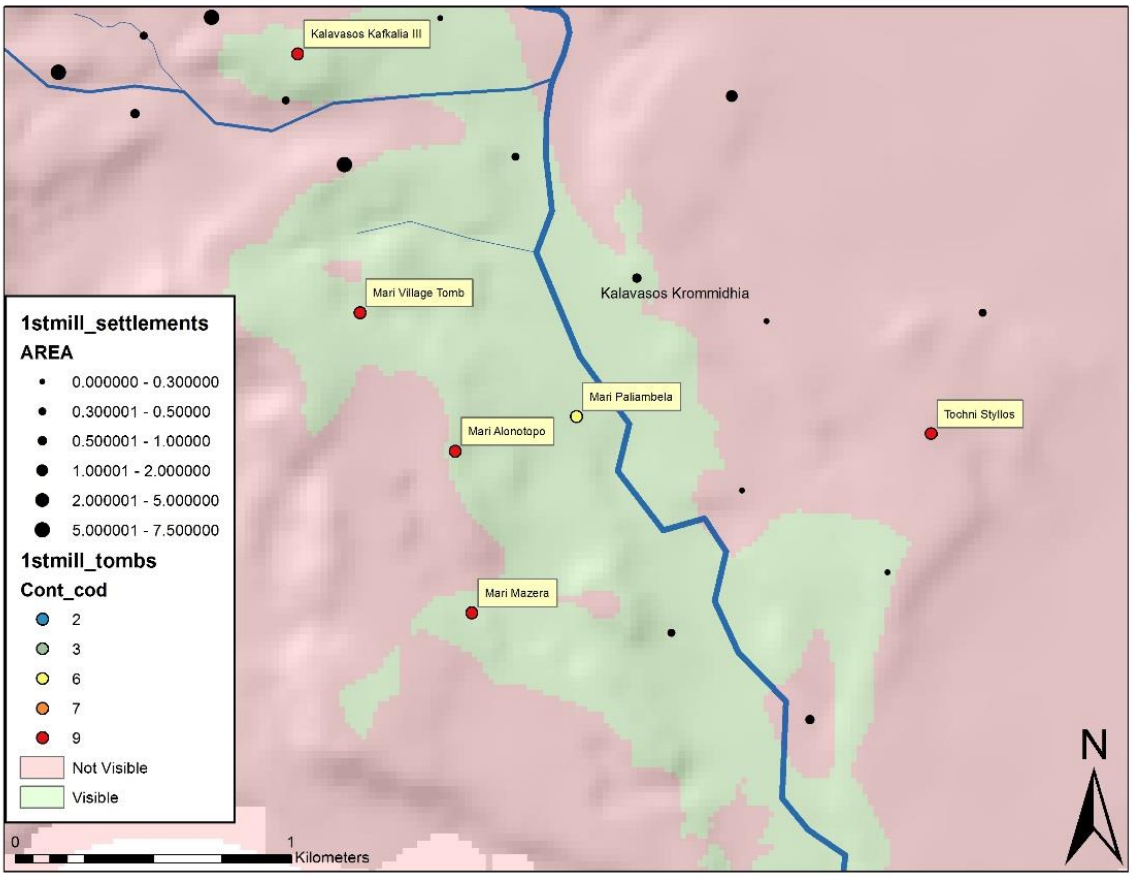


Fig. 5.24. Kalavasos *Krommidhia* viewshed analysis, showing location of cemeteries, created in ArcGIS 10.0.

Other larger sites to the north, such as Kalavasos *Laos/Pamboules*, are not intervisible with these tombs. At *Krommidhia*, the VVP discovered the remains of a small building, with plaster floors, before it was bulldozed to create terracing on the hillslope. While the remains of 7 looted tombs were also on the same hillslope, the site of *Krommidhia* potentially indicates a settlement with clear views of the nearby, prominent ridges of CG and CA cemeteries, a smaller-scale version of the rings of monumental tombs around the sites of Amathus and Kouklia (Janes 2013). Similar patterns of multiple burial areas ringing a site can be identified with the settlement area of Maroni *Vouni*, on the edge of the marine terrace, with views of the cemetery at *Viklari* and a burial site near the modern village of Maroni (Karageorghis 1972) known so far, and the tombs at Asgata *Kambos* and Kalavasos *Petra* I around the settlement of Kalavasos *Spilios* close to the mines.

One area that does not seem to follow this pattern is the above mentioned cluster of sites southeast of the modern village of Kalavasos. The larger assemblages at Kalavasos *Khorapheri/Vounaritashi, Pidieri, Latomari/Argakia* and accompanying smaller <1 ha sites at Kalavasos *Kafkalia, Argakia E, Zoulofdidhes* and *Yeroskhinia* show no direct evidence of tombs, creating an area of roughly 250 ha without a prominent nearby cemetery. While the VVP survey did not extend further west than this site cluster, the absence of cemeteries may indicate that this area, located close to significant gypsum outcrops and the modern limestone quarry, was more of a productive region focused on cultivation in the many strips of alluvium from seasonal drainages, pastoralism, and gypsum-quarrying than an area of inhabited settlement. Rock-cuttings at Kalavasos *Khorapheri/Vounaritashi* may, for example, indicate the potential extraction of the stone (*VVP* 9: 134). The surface finds in this area are all in places with earlier occupations stretching into early prehistory (Neolithic to LC), revealing an interest in the natural

resources rather than in dwelling and interment. A similar pattern emerges close to the mines, in which ca. 85% of the settlement evidence within 2 km of Kalavasos *Petra* corresponds to places with earlier activity, and very few "new" occupations, highlighting the diachronic history of metal production in the region.

The Vasilikos and Maroni region also points to an interesting diversity in early 1st millennium BCE places that show evidence of ritual practice. Using the distribution of figurines found at survey sites in the region as a crude metric of ritual practice indicates that most belong to sites identified as settlements, of less than 2 ha (Fig. 25). Many also derive from multi-period and diachronic scatters with prehistoric occupation, which might be assumed given the very broad and unsecure dating for many of the objects.[221] While this distribution from surface finds is inadequate for articulating any sort of pattern in the materials of 1st millennium ritual practice, it does, minimally, highlight the prevalence of these objects throughout the valley, in places that may or may not have been recognized as "sacred" but in whose contexts some kind of ritual, devotional, or even identification-forming practices occurred.[222]

[221] Both *VVP* 9 and 12 list sites with figurines found; also included in this distribution are Maroni *Vournes*, and an unknown location estimated near the toponyms *Alones/Anaphani/Kloufkiaes* southeast of Maroni village and found by the MVASP survey (Manning and Conwell 1992: 278). The later CC-CH site of Maroni *Yialos* with a reported Bes figurine is not included because it did not show evidence for the 8th-7th c. BCE.

[222] The association between ceramic or stone figurines and ritual (and especially votive) practice has a long tradition in Cypriot archaeology (see e.g. Papantoniou 2012; Ulbrich 2001; Webb 1999), although interesting work on prehistoric human figurines has explored connections to identification processes linked to gender and individual bodies (e.g. Knapp and Meskell 1998).

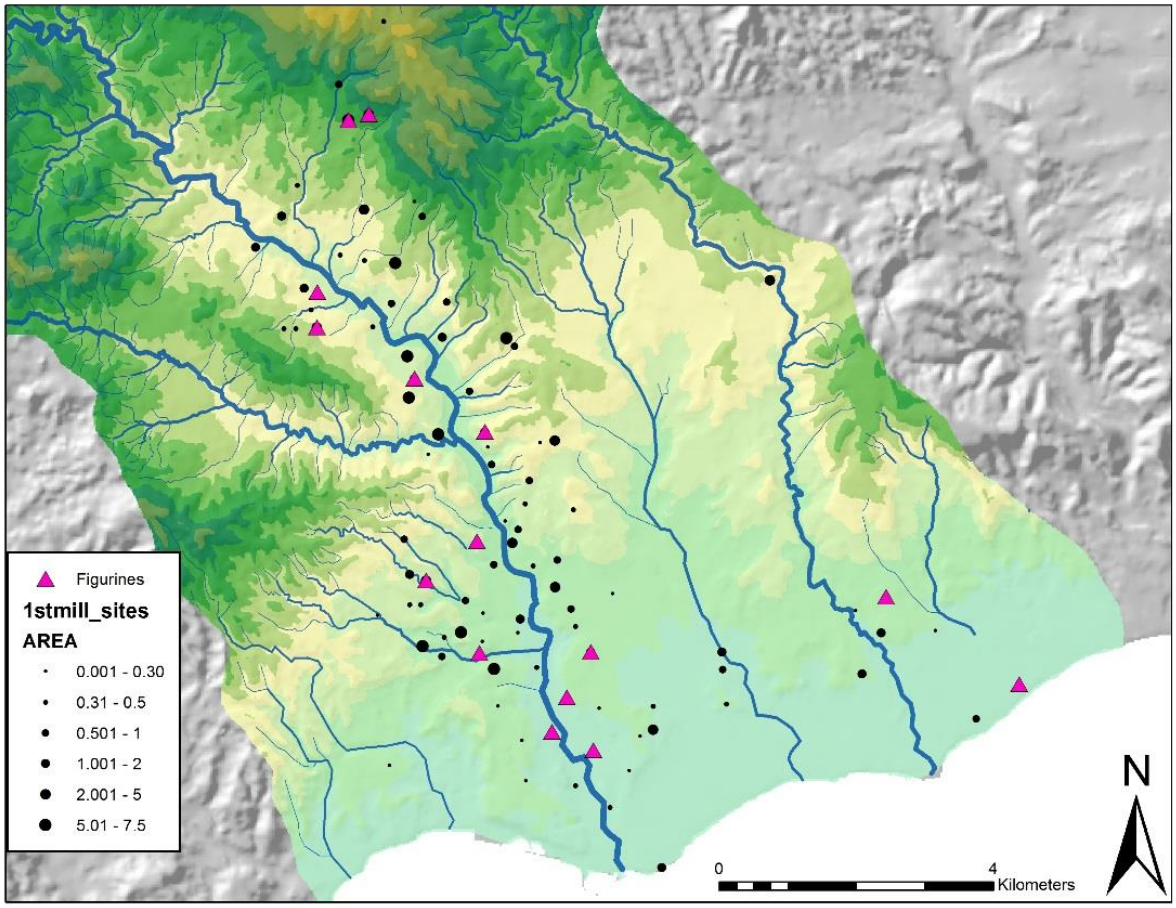


Fig. 5.25. Distribution of figurine finds (pink triangles) in survey region, showing CG and CA settlements and tombs.

The mid-1st millennium BCE shrine within the ashlar walls of the impressive LC building at Maroni *Vournes* (Ulbrich 2011, 2012) speaks to the complicated re-investment of this monumental space, and the possible attraction of the ruins of this built form for the ideational habits of a much later generation (Manning 1998). Based on a study of the deposits, the shrine appears to have been used between the mid-8th and 3rd c. BCE, oriented to deities associated with fertility and pastoralism (Ulbrich 2012: 185), and was therefore presumably a center for the agropastoral community that utilized the nearby remains of an earlier building for its public rituals. Given its placement near the important coastal route however, and its visibility from the sea on a slightly raised contour, the small shrine likely had importance beyond the local southern

Maroni valley, and its development inside the LC ashlar building may have been a more intentional visual reclamation of impressive remains to garner more roadway attention. Unlike at Maroni *Vournes*, the mid-1st millennium BCE sanctuary found outside of the VVP survey area in the Troodos foothills at Vavla *Kapsalaes* (Morden and Todd 1994) and the small CC building associated with figurines and identified as a shrine at Kalavasos *Skourka* (Flourentzos 2008) show little evidence of earlier occupation or a link to prehistoric patterns of ritual in the immediate area, although without excavation it is impossible to discern whether these places held prior significance. The arguments for a connection between metallurgy and ritual in prehistoric Cyprus (Knapp 1986; Webb 1999), for example, suggest that the area of the Kalavasos mines may have been an important part of the LC cultural landscape. Nevertheless, the current evidence for ritual landscapes of the 1st millennium BCE reveals a tension between the return to monumental spaces, such as at *Vournes*, and the creation of new locales for potential gatherings.

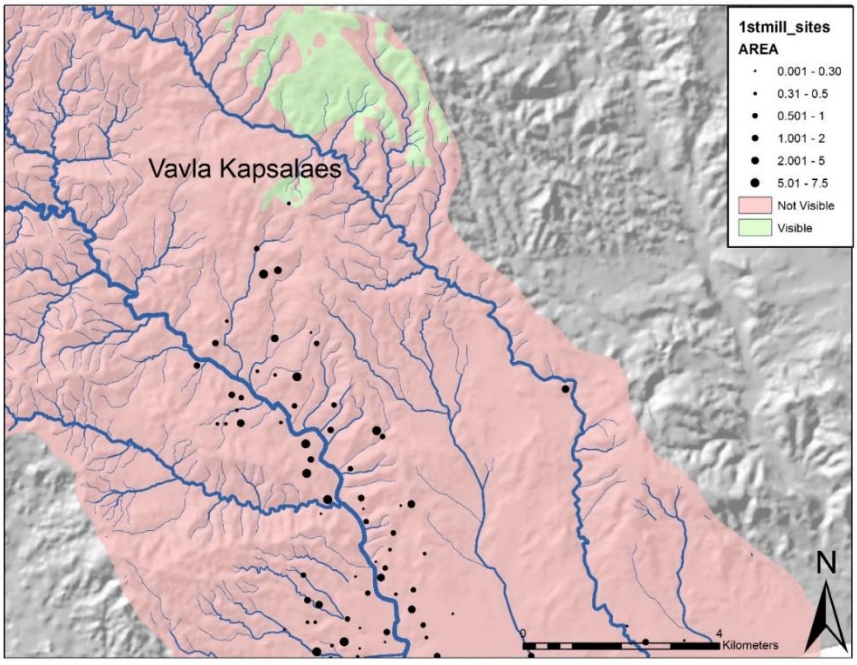


Fig. 5.26. Vavla *Kapsalaes* viewshed, showing survey sites ranked by size.

The case of Vavla *Kapsalaes* (Morden and Todd 1994) is significant due to its position on a high mountain ridge between the Vasilikos and Maroni catchments (and particularly in the upper Ayiou Mina valley), taken by some as evidence that the site acted as an extraurban sanctuary on the borders between the polities of Amathus and Kition (Papantoniou 2013). Simple cumulative viewsheds offer little help, as visibility is shallow and extends mostly to the northeast, not to the south (Fig. 26). If the site was an important gathering place for communities spread along the south-central coastline, its visibility does not seem to have been an identifying factor; rather, the site's position seems oriented towards potential settlements nearby in the Troodos foothills, away from the coast. On the other hand, the site's placement on the edge of a watershed, in an area of high relief, might indicate that its more inaccessible foundation in the CA period and perspective overlooking a large rich agricultural area far up the Ayiou Mina river was its attraction, requiring a pilgrimage up an ancient procession way that presumably took the same form as the modern winding road leading from the village of Khirokitia up into the mountains.

Conclusion

"Only by comparison and contrast, and only by constructing houses of numerical cards to sharpen our perception of differences, can we distinguish between local peculiarities and widespread trends, between the impact of social preferences and the pressures of supply and demand, between the politics of an Ermandyberis and the politics of a Diocletian." (Osborne 2004: 374)

The trends in settlement location and continuity observed in this discussion reveal a more complex process of decision-making and landscape creation than has previously been thought for the early 1st millennium BCE in this region, especially given the previous hypotheses of more precipitation and better growing conditions. Where before the Vasilikos and Maroni valleys were considered a "backwater" to the more important political institutions at urban centers to the east and west (Todd *VVP* 12: 100), several decades of survey evidence and re-analysis suggest

emerging sedentism and the local engineering of the landscape by the 8th c. BCE, marked by groups that both reoccupied spaces of prehistoric settlement as well as carved out new ones. While the VVP and the MVASP surveys are by no means comparable in terms of raw data, their findings – integrated with new re-survey of selected sites – indicate similar acts of place-making writ large after the abandonment of LC centers. The grouping of multiple cemeteries on elevated ground without any direct evidence of prehistoric occupation, for example, indicates an initiative on the part of populations in the lower part of the Vasilikos valley to create a new mortuary landscape untied to past practice. Conversely, the re-occupation of areas around the copper mines and stone quarries, and the clustering of material near natural communication and access routes, suggests that certain resources held diachronic interest to communities building up a new countryside after a period of less permanent practice.

The emerging landscapes of the 9th/8th c. BCE period took shape in additional ways. The distribution of assemblages that indicate larger multi-family settlements throughout the region indicate a re-investment in fields with good water drainage, with off-site areas suggestive of a productive rural economy that re-utilized slopes and managed water run-off. The potential for multiple clusters of settlements with their own controlled surroundings – one around the mines, two mid-way up the Vasilikos valley and one along the coastal plain – may further suggest the appearance of new communities in this region, distinguished from one another in terms of their practices of continuity, local resources, and accessibility. The push up the valley to areas previously inhabited in the early prehistoric period suggests the desire to extend cultivation and pastoralism, under conditions that made these areas viable once again, in addition to a revitalized exploitation of the copper mines. The appearance of sites of various sizes along minor drainages and in command of small-scale watersheds may further point to strategies that saw cultivation

move beyond the immediate river valley into more marginal fields. In addition, the creation of at least one local *temenos* on the coastal plain at Maroni *Vournes* highlights the desire by the 8th c. BCE for a gathering place for cult practice, connected to fertility and pastoralism – highlighting a potentially new salience of agriculture – and situated to be visible to people passing through the area.

The vagaries of the semiarid Cypriot environment over the last few thousand years have certainly obscured the remains of many of the sites in the region, particularly along the alluvial channel of the two rivers, the intensively cultivated and developed coastal plain, and the heavily eroded upper slopes of the valleys. Nevertheless, the recovered survey data, joined with models of settlement placement and population, point to a growing permanence of the 1st millennium BCE landscape *habitus*. This chapter has necessarily viewed these emerging practices at a broad scale, mapping patterns of archaeological material throughout the two valleys and constructing hypotheses about their interrelationship with their surroundings, with each other, and with the vestiges of earlier periods. How these survey data compare to contemporaneous contexts on the island, and the distinctions between local and wider practices as outlined in Osborne's quote above, are part of the more multiscalar observations and synthesis in the chapter that follows. This next discussion takes these findings and integrates them with the paleoenvironmental data of **chapter 4** to analyze the place-making practices of the region at the scales of settlement, community, region, and island, and focuses in more depth on the making of new political landscapes.

Chapter 6

Landscape investment: the site, the region, and the island in the broader eastern Mediterranean

Fig. 6.1. Small shrine placed within the walls of an earlier abandoned house, Maroni (photo by author 3/2013).

On the outskirts of the modern village of Maroni are abandoned buildings, many missing their roofs. Perhaps vestiges of the conflict of 1974 and the sudden evacuation of their inhabitants, or simply the remains of houses or sheds no longer needed by a new generation, these structures often go unnoticed or unattended until they eventually collapse or are forcefully razed. In the remains of one such stone building, however, sits a painted blue-and-white miniature shrine, a common fixture of small-scale public ritual on the island, and indeed ubiquitous across the Mediterranean in the guise of wayside shrines (Fig. 1). Typically found near roads or paths, these small cultic vessels call out to passersby and evoke a sense of itinerant

devotion, or at least retrospection. Set within the ruins of an earlier building, this Maroni shrine – as with the 8th c. BCE example mentioned in **chapter 5** – reveals a local repurposing of the built environment for new social and cultural needs.

Fig. 6.2. Stone flag on hill near Agios Theodoros (photo by author 3/2013).

Further east, outside the village of Agios Theodoros, is a landscape feature of a different sort. Laid out on the highway-facing slope of a small hill is a large, visible depiction of the Greek flag, made out of painted stones placed in rows of blue and white (Fig. 2). While the more infamous Turkish stone flag depicted on the southern slopes of the Kyrenia mountain range is well-known for its bold claims to the island's landscape, on the part of displaced Turkish-Cypriots (Fig. 3),[223] the smaller Agios Theodoros flag's intent is no less grandiose: the

[223] What makes the Turkish stone flag a particularly aggressive form of nationalism is its position directly facing the capital of Nicosia, and its relative invisibility from most Turkish-Cypriot villages in the north. The flag is thus not intended as a rallying cry, but as an affront to Cypriots still living south of the demilitarized zone, who can see it relatively easily from every direction.

appropriation of the land, in material form, for the causes of nationalism and of Greek/Greek-Cypriot identity.

Fig. 6.3. Monumental Turkish stone flag on southern Kyrenia range (photo by author 11/2012).

In the remodeling of the Cypriot landscape for these disparate and complex practices - of ritual, of power, or of self-preservation - there emerge important questions about the ways in which the investment or disinvestment in places helps situate and shape the growth of new social and political formations. In **chapter 5**, I explored at a meso-level the landscape indices that might illustrate these types of trends for the 1st millennium BCE in one region of the island. I now turn, in this chapter, to exploring those patterns at different scales, in order to examine how communities were interacting with and investing/re-investing in more permanent places during the making of new 1st millennium BCE political landscapes. I want to argue that the settlements of the Vasilikos and Maroni valleys, while participating in broader island-wide transformations during the 9th-8th c. BCE, emerged out of a particular concatenation of landscape practices and

experiences contingent to that region. In other words, they provide a sense of unruly landscapes that resist their categorization as belonging to "homogeneous institutions."

I explore the themes of persistence, permanence, and investment through a study of existing survey evidence, to discern what Adam T. Smith (2003: 73) calls spatial experience: "the flow of bodies and things through physical space…distribution, transport, communication, property rules, land use, resource exploitation, and administrative, economic, and cultural divisions in physical space." While the organization of space is poorly documented for rural landscapes of the Iron Age due to the lack of excavated sites, this chapter aims to re-constitute the landscape experiences of the 9th and 8th c. using studies of sites and their surroundings, the region, and the island as a whole. Instead of assuming *a priori* a homogenous social landscape lying underneath a system of segmented historical polities (e.g. Iacovou 2007a), this chapter takes a first step toward illuminating the dynamism of the Iron Age Cypriot countryside and the diverse patterns of landscape investment, as a process operating at different spatial and temporal scales (Bevan and Conolly 2013).

In the first section, I take a closer look at three areas in the Vasilikos and Maroni region, each offering different perspectives on emerging human-environment relationships and landscape experience.[224] The first, in a locality known as Asgata *Neron tou Phani*, suggests how communities were expanding into higher elevations of the Vasilikos Valley to take advantage of arable land in tandem with a re-investment in mining. The second, Kalavasos *Khorapheri/Vounaritashi*, provides a window into the clustering of sites in an important fertile side drainage with clear evidence of Middle and Late Bronze Age activity. And the third, near

[224] These sites and their surroundings were chosen out of practical measures, because they had the most ploughed fields to survey in the spring of 2013 and they provided the most data, as opposed to some of the other targeted sites in my re-survey, such as Tochni *Kapsala*, which had been turned into a garbage dumping and burning site sometime in the last few decades.

the locality Tochni *Petreli*, suggests how Iron Age populations were moving into spaces without significant prehistoric occupation and establishing alternate connections to the landscape, particularly through the placement of cemeteries that afforded spaces for mortuary practice.

In the next section, I widen out to situate the trends of site placement, continuity, and interaction identified in the Vasilikos and Maroni region against the survey record from around the island. While many different projects have conducted surveys since the mid-1950s, their methodologies are wide-ranging and diverse; indeed, some earlier projects recorded very little information about the methodology itself or the recorded data (see selections in Iacovou 2004a). Nevertheless, as explored in **chapter 5**, this patchwork survey record provides an opportunity to discern coarse patterns in the data with which to compare possible variations in 9th-7th c. BCE settlement patterns and land use practices. Viewed at the scale of regional or interregional signatures, this exercise leaves space for future investigations of local trends, in the anticipation of more data; now, it offers an opportunity to examine possible practices of territory-making and the landscapes of distinct regimes associated with the emergence of new polities.

An epilogue at the end of this chapter expands out from the Cypriot *basileus* to the wider eastern Mediterranean by briefly looking through an even more macroscalar perspective: the transformations occurring on the island of Cyrus as compared to concurrent changes beyond, via the cases of east Crete and the southern Levant.[225] Such a cross-cultural project requires more space than can be granted in this dissertation, and here I only examine gross comparanda with the intent to pursue these investigations in future work. This concluding consideration of geopolitical landscapes also serves as a lead-in to the discussions of spatial imaginations in the

[225] At this stage a comparison of Cyprus with the Greek mainland and its city-states would require considerably more room, especially given the overtones of similarities and dissimilarities argued by a generation of earlier scholars that would demand attention (e.g. Snodgrass 1988). While this is a serious omission, it is hoped that this comparison follows shortly in future work.

next **chapter** (**7**), which brings together Greek, Near Eastern, and Roman perspectives on Cyprus.

The small-scale: site-level dynamics outside the city

Our information on CG and CA rural settlements, and their spatial organization, is sparse. Outside of the major excavations at Idalion, Paphos/Kouklia, Kourion, Marion, Tamassos, Amathus, and Kition, no residential or domestic site of the 11th-6th c. BCE has been excavated and published, although survey projects have identified numerous examples of what probably were farmsteads and village sites, as discussed below. At Panagia *Ematousa* outside of Kition in the southeast part of the island, on a terrace of the Arkhangelos River, the Danish Archaeological Project excavated a small settlement dating from the CA to Hellenistic periods (Sørenson and Winther-Jacobsen 2006). While CA ceramics were found, however, none of the excavated architectural spaces date conclusively to before the 5th c. BCE. Pithos holes with discarded material, and numerous figurine fragments, may nevertheless suggest domestic ritual activity for the earliest horizons at the site (Sørensen and Winther-Jacobsen 2006: 52). The presence of numerous examples of locally-made CA horizontal-handled transport amphorae (Winther-Jacobsen 2002) may also suggest a local production of olive oil, which made its way to coastal ports for export to the Levant.[226] The on-going excavations at Athienou *Malloura*, in the eastern Mesaoria, point to a possible rural sanctuary with associated agricultural activities, especially for the Roman period (Toumazou *et al.* 2011; Yerkes 2000). Similarly, at the sanctuary site of Ayia Irini, excavated by the SCE in the 1930s, evidence for agriculture likely indicates a connection of

[226] Based on INAA findings, Winther-Jacobsen (2002) notes that this type of transport amphora, dating from the 8th to the 4th c. BCE, was locally produced in the southeast part of the island and had a wide distribution around the eastern Mediterranean as well as the island, and probably developed out of smaller-bodied amphorae in the CG period.

the sanctuary to land use practices (Gjerstad *et al.* 1935: 667-668, 820-1). The cases that follow aim to provide a starting point for understanding how these non-urban sites emerged in the 9th-8th c. horizon. While their analyses remain coarse based as they are largely on survey ceramics, they contextualize emerging practices (Foxhall 2004) until detailed excavations can further elucidate (and date more precisely) their spatial and material dynamics.

Asgata *Neron tou Phani*

The Vasilikos Valley Project first recorded sites right at the seam between the igneous and sedimentary sequences in the lower Vasilikos Valley, in the middle years of the project after the Kalavasos Dam was constructed (1981-1983; Fig. 4). From the original notes and publications, the area of limestone slopes and eroded spurs facing east towards the river hosted several concentrations of material, clustering in the early prehistoric Neolithic, the CA, and the Roman period. Given the large amounts of CA ceramics scattered across this area, Todd (*VVP* 9: 32) suggested a cluster of settlements and activity zones related to copper mining and production, that includes the sites of Asgata *Neron tou Phani*, Kalavasos *Spilios*, Kalavasos *Petra* II, and tombs at Asgata *Kambos* and *Spilios*.[227] Due to the presence of a Cypriot military base in this area to the west of the existing dam, however, the full extent of this possible cluster to the north was not investigated.

[227] "The whole of this region should be thoroughly examined for further evidence of settlement and metallurgy; numerous small habitation sites and associated scatters of slag might be found. Such a survey would be extremely time-consuming, given the broken nature of the terrain, and it would also require that the prohibited area be opened for survey" (Todd *VVP* 9: 32). And: "the sites of *Petra* I and II, *Spilios*, Asgata *Neron tou Phani* and Asgata *Kambos* must all be considered together in any study of the post-prehistoric utilization of this area" (*VVP* 9: 93).

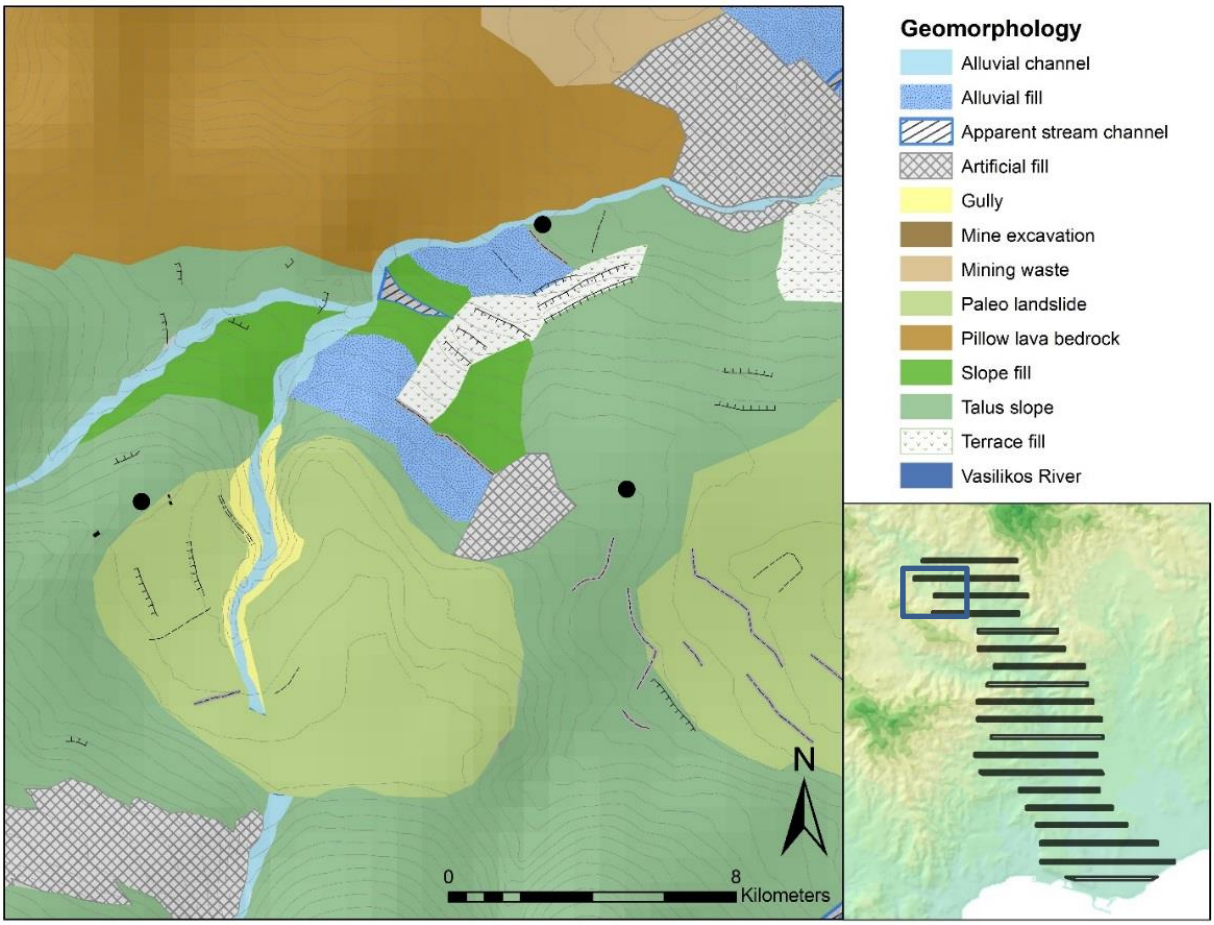


Fig. 6.4. Geomorphological map of the area of Asgata Neron tou Phani, Vasilikos Valley. All maps in this chapter created in ArcGIS 10.0 using data provided by the Geological Survey Department.

Asgata *Neron tou Phani*, roughly translated as "water/spring of the spirit," may point to a local history of water management, and I deemed it worthy of further re-survey due to its commanding position on the edge of a small watershed above the river valley, and its diverse range of features and materials. Todd identified this survey site (# 109) as a settlement on the eastern end of a low spur that slopes down to a seasonal drainage (*VVP* 9: 32), where re-survey recorded a number of possible check dam walls cutting across the gully. As noted in **chapter 5**, this area has stable fields created from several paleolandslides, which brought soil down from the upper talus slopes and established deep, concave saddles (Z. Zomeni pers. comm.). Sitting at

roughly 240 m asl, the site "has a commanding view northwards to the Petra mine area…and across the Vasilikos valley" (*VVP* 9: 32; see also Todd 1989: 44; Fig. 5). Most of the site was covered in the 1980s, as today, with dense, thick maquis overgrowth of spiny burnet and other small bushes, and with noticeable erosion on either side of the eastward facing spur. Aerial photographs from the 1960s, however, show that this spur was then under considerably more cultivation, revealing the changing rural land use practices in this area of relatively fertile slopes, and the possibility of dramatically changed surfaces (Fig. 6). From aerial photos of this upper western part of the Vasilikos Valley, one can also sense that these stable slopes provide a large percentage of the agricultural land in the area.

Fig. 6.5. Asgata *Neron tou Phani*, from the site looking roughly south-southeast towards the coast, across the paleolandslide to Asgata Kambos (photo by author 6/2013).

In terms of ceramic finds, Todd noted only a small number of Chalcolithic Red Burnished ware fragments, one possible Middle Bronze Age Red Polished fragment, and then a high frequency of CA material, especially pithos sherds and the common White Painted body

fragments, with only a few later Roman pieces of African Red Slip. The majority of non-diagnostic wares were recorded as "post-prehistoric red wares" (*VVP* 9: 32). Of the CA materials kept and stored in the VVP storehouse, most of the pieces from the site are nondescript body sherds or the common White Painted style body and handle fragments. While re-survey in these fields found a number of decorated Black on Red and Bichrome fragments of the CA period, the assemblage consistently took the shape of body fragments of coarse wares and some handles, rims, and bases (Fig. 7). In addition, the VVP found chert flakes throughout the spur and significant numbers of small pieces of slag, and "appeared to be eroding out of adjacent deposits and not just the remains of road metalling" (*VVP* 9: 32). Finally, the presence of numerous stones, many in linear features indicating possible retaining walls, suggested to Todd the possible indications of a building, although he was unclear of their dating (Fig. 8).

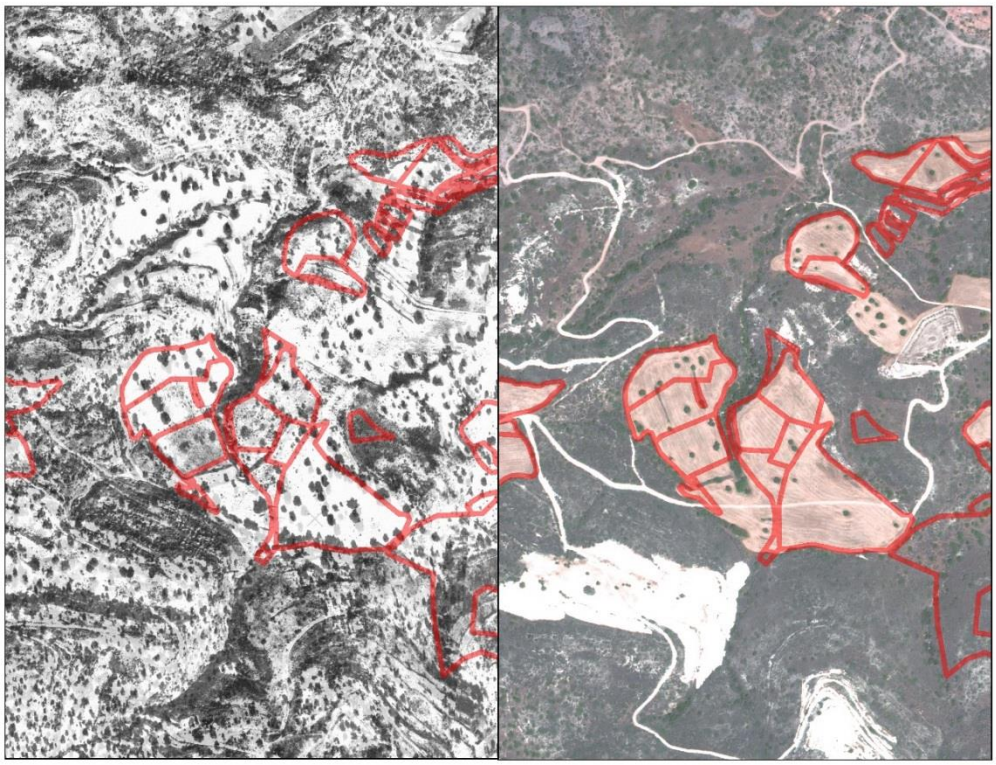


Fig. 6.6. Comparison of 1963 aerial photography (left) with 2011 satellite imagery (right) of Asgata *Neron tou Phani* area.

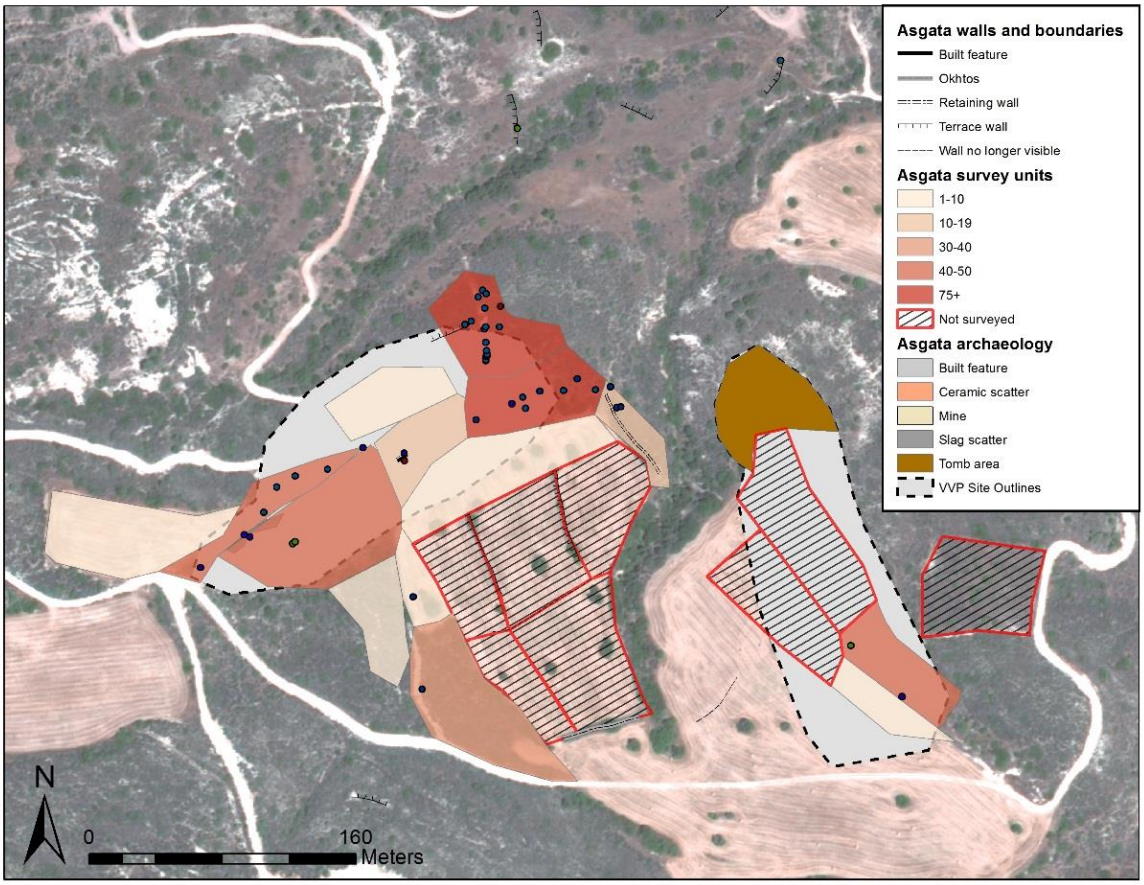


Fig. 6.7. Survey grids and ceramic distributions at *Asgata Neron tou Phani*.

Fig. 6.8. Walls eroding out of Asgata *Neron tou Phani* (photos by author 12/2012).

There are several slag heaps in this area, given the proximity to the mines at Kalavasos *Skourka*, which has some of the largest concentrations of slag on the island outside of Skouriotissa in the northern Troodos foothills (Kassianidou 2013: 66). It is at Kalavasos *Skourka*, buried beneath the copper slag, that the remains of a 5th c. BCE ritual structure were discovered with numerous female figurines (Flourentzos 2008: 102; Fig. 9).

Fig. 6.9. Kalavasos *Skourka*, with remains of 5th c. BCE building emerging from slag (photo by author 12/2012).

An additional large heap sits on the lower edge of the settlement site of Kalavasos *Spilios*, to the southeast of Asgata *Neron tou Phani*, indicating the working of copper at a separate site instead of near the mines (cf. Fasnacht 1999). There are also scatters of slag on the surface on the slopes of Asgata *Neron tou Phani* and Kalavasos *Petra* II. A few radiocarbon dates from prominent slag heaps in this mining area, at Kalavasos *Petra* and Kalavasos *Platies*, support the exploitation of these mines by the CA period, and at *Platies* an ancient adit and over 15 slag heaps remain well-preserved (Kassianidou 2013: 75; Table 2). The shifting climatic context in this period may have

supported the growth of pine trees and the expansion of pine forests down into the valley from the foothills, and may have provided reliable charcoal and timber resources for communities re-engineering metallurgical activity.

Chart 6.1. Published radiocarbon dates from charcoal in slag heaps in the Kalavasos area (from Kassianidou 2013: 75, Appendix I).

Site Name	**Context**	**Published date (Zwicker 1986)**	**14C date before present**	**Calibrated date (68.2%)**	**Calibrated date (95.4%)**	**Period**
Kalavasos	"biggest" slag heap	430 +/- 85 BC	2376 +/- 83 BP	552-382 BC	770-354 BC	Cypro-Archaic
Kalavasos *Platies*	Slag heap?	410 +/- 70 BC	2357 +/- 68 BP	541-375 BC	670-352 BC	Cypro-Archaic
Kalavasos *Platies*	Slag heap?	450 +/- 40 BC	2399 +/- 30 BP	510-434 BC	544-396 BC	Cypro-Classical

While the finds from Kalavasos *Skourka* suggest a Classical-period sanctuary, it seems probable that when communities started re-investing in the mines in the 8th c. BCE, they may have begun associating part of the area with ritual practice. Todd (Todd and Warren 2012: 52) has recently suggested that the early 1st millennium BCE exploitation of the mines was likely "larger and more organized" than other cases of metallurgy on the island, for example in the Polis region (Raber 1984). It is tempting to consider the placement of a ritual site near the mines as a gradual development that arose when large numbers of people working the mines wanted gathering places nearby. As I explore in the next section, there are similar patterns seen at other 1st millennium-BCE ritual spaces on the island, perhaps alluding to an interregional practice of community-building embedded with renewed mining and metallurgy practices. Yet on the other hand, there does not seem to be enough evidence, beyond the size of the slag heaps, to warrant any conclusions about the scale of mining operations; it is also possible that in the 8th c. BCE groups began mining near Kalavasos and producing copper for local use and possibly small-scale trade, with access to other markets at the coastal site of Tochni *Lakkia*. The small scatters of slag

mixed in with ceramic assemblages in this area may attest to a more localized, ad hoc mining in the CA period.

In the immediate area of Asgata *Neron tou Phani*, as noted by Todd, are several sites showing a range of settlement and mortuary evidence, and arguably represent the clustering of groups in an area with access to mineral, water, and soil resources. Across a gully from *Neron tou Phani,* and also likely separated from that settlement by a now hidden water channel draining down towards the river, the VVP recorded a collection of ca. 20 rock-cut tombs at Asgata *Kambos*, in an area of roughly .4 ha, although the full extent was not clear at the time of publication (*VVP* 9: 30-31; Fig. 4). The visible tombs were looted, while the dense maquis overgrowth limits the survey of remaining ones. Although a few Chalcolithic ceramic fragments were found in the vicinity of the tombs, most of the material is CA and to a lesser extent Hellenistic (including a Rhodian amphora fragment). As Todd notes, the placement of the tombs on a steep spur facing the Vasilikos River and the area of the copper mines, seems to fit with contemporary positioning of cemeteries in the CA period on high ridges. The tomb chambers also seem to align with the period's trends in tomb shape, with *dromoi* (entrance channels) cut into the limestone, although not for every tomb.

One of the largest multiperiod assemblages identified during the VVP survey is that of Kalavasos *Spilios*, which occupies a hilly region on the western side of the Vasilikos valley, roughly 700 m from the Kalavasos mines area, with both eroded gullies and flatter slopes (*VVP* 9: 101-104). While Todd initially envisioned the site as ca. 40 ha, the clusters of post-Bronze Age material are considerably smaller, and he estimated one particular CA settlement roughly 30 m in diameter (although Iron Age material was scattered across the proposed diachronic site). This area, on a gently sloping hillside, is adjacent to the large slag heap associated with CA and

later Hellenistic ceramics. The ceramic assemblages in this area included both utilitarian and fine wares, suggesting to Todd a domestic settlement (*VVP* 9: 103). In addition, several looted tombs were found, with subterranean chambers whose roofs had collapsed. Slightly downslope from Asgata *Neron tou Phani*, and bordering the igneous geology on a relic alluvial terrace, the VVP identified a site called Kalavasos *Petra* II, with a continuous scatter of sherds up to the site of Kalavasos *Spilios* (*VVP* 9: 93). This terraced slope, currently ploughed for wheat cultivation, had almost no evidence of occupation before the CA period, with material then stretching continuously to the Late Roman period. Fragments of chert, a hammerstone, and slag allude to the probable multifunctional elements of this site, which Todd theorized as a "northward continuation of the general spread of post-prehistoric ceramics in the *Spilios* area" (*VVP* 9: 93).

We can therefore start to see the outlines of a group of settlements, occupying various parts of the limestone slopes, each with different historicities but likely linked through collective burials at Asgata *Kambos* and *Spilios*. The connection between emergent settlements, access to mines and metallurgical resources, and arable land finds a parallel in the Late Bronze Age site of Aredhiou *Vouppes*, which is located in the northeastern Troodos foothills at the interface of sedimentary and igneous zones (Steel 2009). The Sydney Cyprus Survey Project originally identified *Vouppes* through numerous amounts of pithos fragments. An excavation team set out to investigate the site as a potential LC rural community that may have helped to support the local mining industry (Knapp 2008: 140-141). The research concluded that the site had a number of activity zones, many of which included evidence for large storage containers and utilitarian wares, suggesting involvement in agricultural production and storage. Louise Steel (2009) interprets the site as a secondary center, in a tripartite model of site hierarchy (e.g. Keswani 1993: 79), and one that was integrated with intra-island patterns of trade with access to imported

commodities. Without excavated evidence it is difficult to align the Asgata cluster of settlements with this sort of model. Yet there are certainly similarities that warrant future investigation, particularly in the placement of sites near arable lands as well as access routes down river.

The question of access in the area of Asgata *Neron tou Phani* is interesting, given its placement above the Vasilikos river channel. As argued in **chapter 5**, it is possible that the river was not the only source of movement down to the important coastal access routes and to the potential harbor site of Tochni *Lakkia*. From the much later Peutinger Tablet, for example, we know of a route that extended from Amathus to the inland city of Tamassos, using the Parekklisha valley to the west of the Vasilikos, and cutting very close through the Troodos mountains to the area of Asgata (Bekker-Nielsen 2004).[228] It seems likely that routes existed in this area that linked mines, metallurgical processing areas and perhaps charcoal production sites in expanding pine forests, and that this upland mountainous route system would have connected to other roads leading to the prominent cities of Amathus or Tamassos. As Erin Gibson (2007) has explored, these mountain paths, created through continuous use and linked to practices, can often lack the sort of markers associated with more formal route systems.

Kalavasos *Khorapheri/Vounaritashi*

The investment in the Vasilikos and Maroni region in the 9th-8th c. BCE takes additional shape in areas that likely used local resources for technologies such as stone quarrying. The site that Todd named Kalavasos *Khorapheri/Vounaritashi* provides an example of such an occupation (*VVP* 9: 58-61; Johnson and Hordynsky 1982: 65; Todd 1989: 47). It sits on the western side of the valley near a modern limestone quarry and gypsum factory, occupying a flat

[228] According to Roman evidence this section of the island's road system would have been 29 miles (Mitford 1980: 1332-1337).

hilltop and its eroded slopes overlooking a major tributary, which feeds into the river west of the important Neolithic site of Kalavasos *Tenta* (Fig. 10).

Fig. 6.10. A. Kalavasos *Khorapheri/Vounaritashi*, looking roughly north, at large gympsum tors and eroded hillslopes overlooking alluvial channel, with site in upper right (photo by author 5/2013).

Fig. 6.10. B. *Khorapheri/Vounaritashi* looking roughly southeast towards the coast, down the flat hilltop and the stone scatters in the ploughzone (photo by author 6/2014).

Peculiar to this area are several large gypsum outcrops, or tors, exposed on different portions of the eroded hillslope, which must have considerably changed shape due to the highly unstable water-saturation point of gypsum. Todd initially broke this large, diachronic site into several smaller settlements based on chronological concentrations of material, and identified one CA settlement (Area D) on the southern slopes of the hilltop with views over the side drainage to the south, where several abandoned terraces still lie. This area has a somewhat unchecked view down the side valley towards the coast. Both the VVP and my re-survey found numerous quantities of CA ceramics, including finer painted wares as well as larger pithos and storage vessel fragments (Fig. 11).

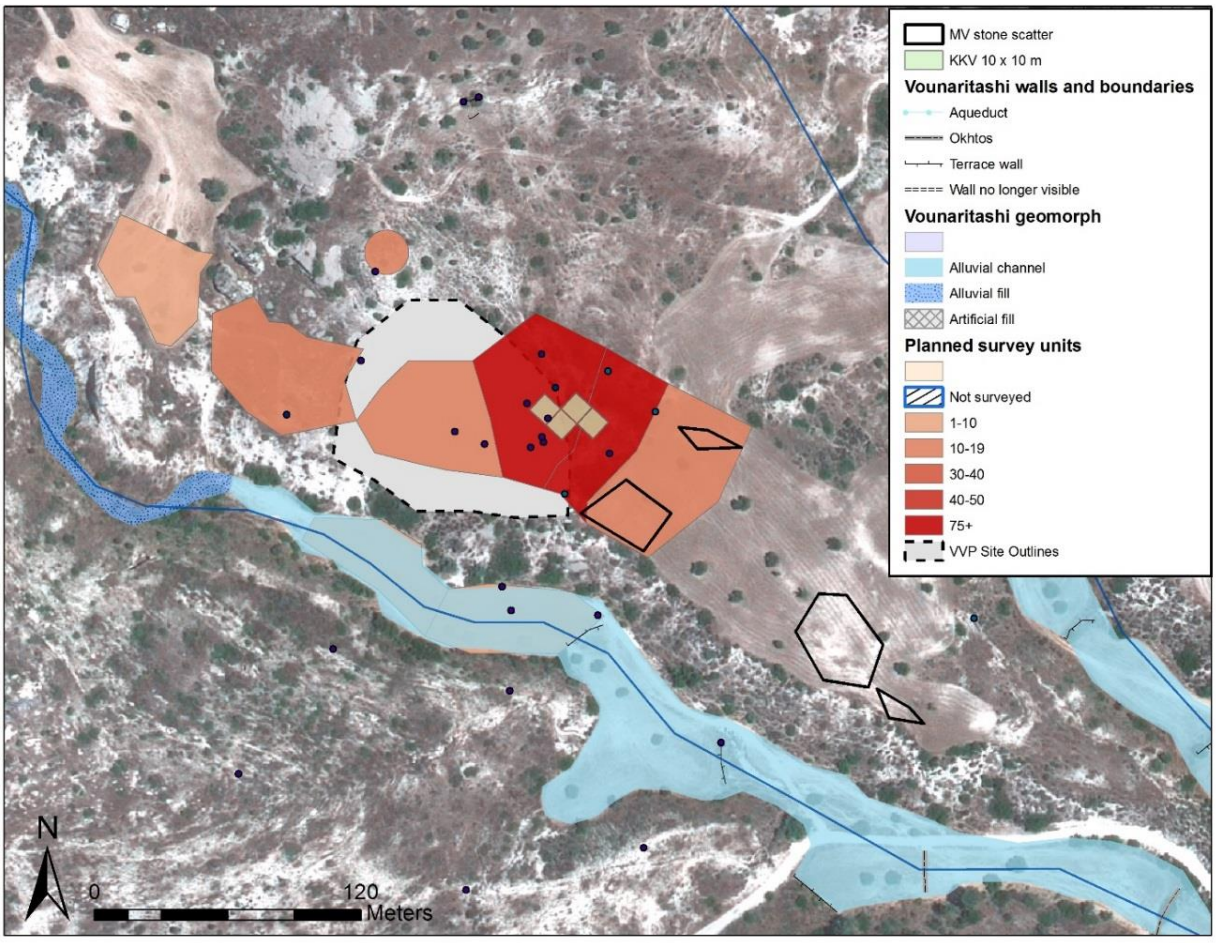


Fig. 6.11. *Khorapheri/Vounaritashi* survey grids, showing amounts of recovered material and stone scatters.

Also in this area are several cuttings in the gypsum bedrock, which are impossible to date without further investigation, but which are surrounded by CA surface material (Fig. 12). The site seems to occupy the un-ploughed area near the major gypsum outcrops and extends into the flat, gently sloping cultivated hilltop to the southwest, where a considerable quantity of field stones suggests the possibility of structures (Fig. 13). The VVP also recorded one ceramic animal figurine, missing its legs, in the area of the CA settlement.

Fig. 6.12. *Khorapheri/Vounaritashi* gympsum cuttings (photo by author 12/2012).

Important to the reconstruction of this site is the nature of its multiple re-occupations, which Todd divided into separate areas, but which rather indicate a continuous overlapping of occupations and re-occupations since the Middle Bronze Age. One of the largest concentrations of materials is an area with both Middle Bronze Age and Late Bronze Age evidence, including chert flakes and stone tools, which occupies a small hill marked by associated stone walls. By the

8th c. BCE, occupation had shifted slightly to the flatter hilltop extending to the south, near gypsum outcrops and extending along the narrow ridge of the hilltop to the point where two tributaries converge on their way to the Vasilikos River. This area has a particularly clear view not only of this western part of the valley, but also across the valley and down towards the coast. Unlike in the area near Asgata *Neron tou Phani* with very little 2nd millennium BCE evidence for occupation, *Khorapheri/Vounaritashi* seems to have held enduring interest to people living in the valley, presumably for its position on an important side drainage and its resources in gypsum and limestone. It is connected by alluvial channel to the important Late Bronze Age site of Kalavasos *Ayios Dhimitrios* as well as close to the major access routes moving east and west across the coastal plain.

Fig. 6.13. *Khorapheri/Vounaritashi* stone scatters in field (photo by author 6/2014).

The long-term settlements at *Khorapheri/Vounaritashi* are thus not isolated, but surrounded by concentrations of prehistoric and historic materials utilizing the side drainages and

gently sloping hills above the coastal plain. Occupying the alluvial channels in this area are the sites of Kalavasos *Latomari/Argakia, Argakia* East, *Yeroskhinia,* and *Kafkalia,* identified by the VVP, which all possessed clear evidence of re-occupations from the Bronze Age into the 1st millennium BCE. The local pattern thus seems to indicate a consistent re-occupation of this part of the western valley and the dense network of tributaries and relatively flat hilltops with good views towards the coast. Certainly the connections of drainages with deeper alluvial soils, and the numerous hilltops providing higher ground on the edges of watersheds, created favorable conditions for occupations as well as areas aimed at exploiting the nearby resources of limestone and gypsum. The situation of *Khorapheri/Vounaritashi* just north of the major east-west access route through the region might also support a view of this area as an important spot that may have overseen access up the river valley. While there is less evidence for continuous occupation through the CG period at *Khorapheri/Vounaritashi,* one of the confirmed sites with later CG III ceramics is a cemetery occupying a prominent ridge terrace at Mari *Moutsounin/Mandra tou Rirou*, just on the southern side of the drainage (Todd *VVP* 9: 121-122; Fig. 14). As with other sites with CG material in the Vasilikos and Maroni region, this site distinguishes itself on the highest peak in the surrounding area, with clear views across and down the valley. Numerous CA tombs were recorded by the VVP on this ridge.[229] The high position of this ridge would have provided a provocative placement for the cemetery of new groups establishing (and perhaps overseeing or controlling) mortuary landscapes in the valleys. While there is some evidence of the re-use of Late Bronze Age tombs in the CA period at Kalavasos *Ayios Dhimitrios* (South 2002), the abandoned urban center further down the drainage, the establishment of necropoleis with such commanding positions as *Moutsounin/Mandra tou Rirou* perhaps reinforces the

[229] It is possible that Max Ohnefalsch-Richter excavated several of the tombs in 1881, although the exact area of his digging is unknown; see Todd *VVP* 9: 119-120.

intentional creation of spaces of collective burial and funerary practice dissociated, or disinvested, from an assumed past.

Fig. 6.14. Mari *Moutsounin/Mandra tou Rirou* looking roughly northwest across access route towards area of Kalavasos *Khorapheri/Vounaritashi* (photo by author 12/2012).

As part of the VVP, J. Malcolm Wagstaff (1992) did a study of several terrace wall systems in this part of the valley in order to understand when people first started to control erosion in the valley. Based on form, Wagstaff identified wall systems in side valleys with rhomboid shapes, roughly parallel to the axis of the valley floor, or transverse, similar to check dams. One particularly self-contained system appeared in the side drainage at *Khorapheri/Vounaritashi*, becoming more prominent further as it reaches the river at Kalavasos *Tenta* (Fig. 15). Wagstaff (1992: 157) hypothesized, based on preliminary mapping of these

walls, that their creators wanted flat land for cultivation and therefore halted erosion to induce alluviation in the valley bottom. Importantly, given the non-perennial nature of the local streams, the seasonal flow was important given the possible scarcity of water. Although the walls in this system seem coordinated, moreover, their small scale suggests that they were created by local individuals, perhaps property-owners, rather than by a state or central ruling authority. It is difficult to ascertain, without further investigation, how this placement of the walls in the valley channels was linked to the several possible settlements on surrounding hilltops.

As terrace walls are notoriously difficult to date, Wagstaff (1992: 159-160) was unable to align the system near *Tenta* with any occupation due to the lack of recognizable ceramics (or radiocarbon dates), and one single piece of Middle Bronze Age ceramics cannot be extrapolated to date an entire system, especially because it was likely added to over generations. Equally problematic to reconstructing chronologies are the vagaries of erosional processes, which may deposit much earlier materials in the fill behind terrace walls. My own-resurvey, without any excavation, was also unable to find any ceramics associated with the visible check dam terraces near *Khorapheri/Vounaritashi* aside from the surface appearance of some brown, non-diagnostic body sherds. Given the commanding view of the site overlooking this side drainage, across from *Yeroskhinia*, the terrace walls may indicate management of erosion in this side valley in the CA period, although that conclusion is only circumstantial. It is possible to have a 2nd millennium date for this system, however, if we also take Wagstaff's (1992: 160) suggestion that another sequence of cross-channel walls nearby at the site of Kalavasos *Mitsingites* also had Middle Bronze Age material. The earlier dates may alternatively indicate that groups in the 8th/7th c.

BCE were re-occupying hilltops with existing terrace wall systems in valleys which, with more reliable seasonal flow following the 8th c. BCE, were becoming cultivable once again.

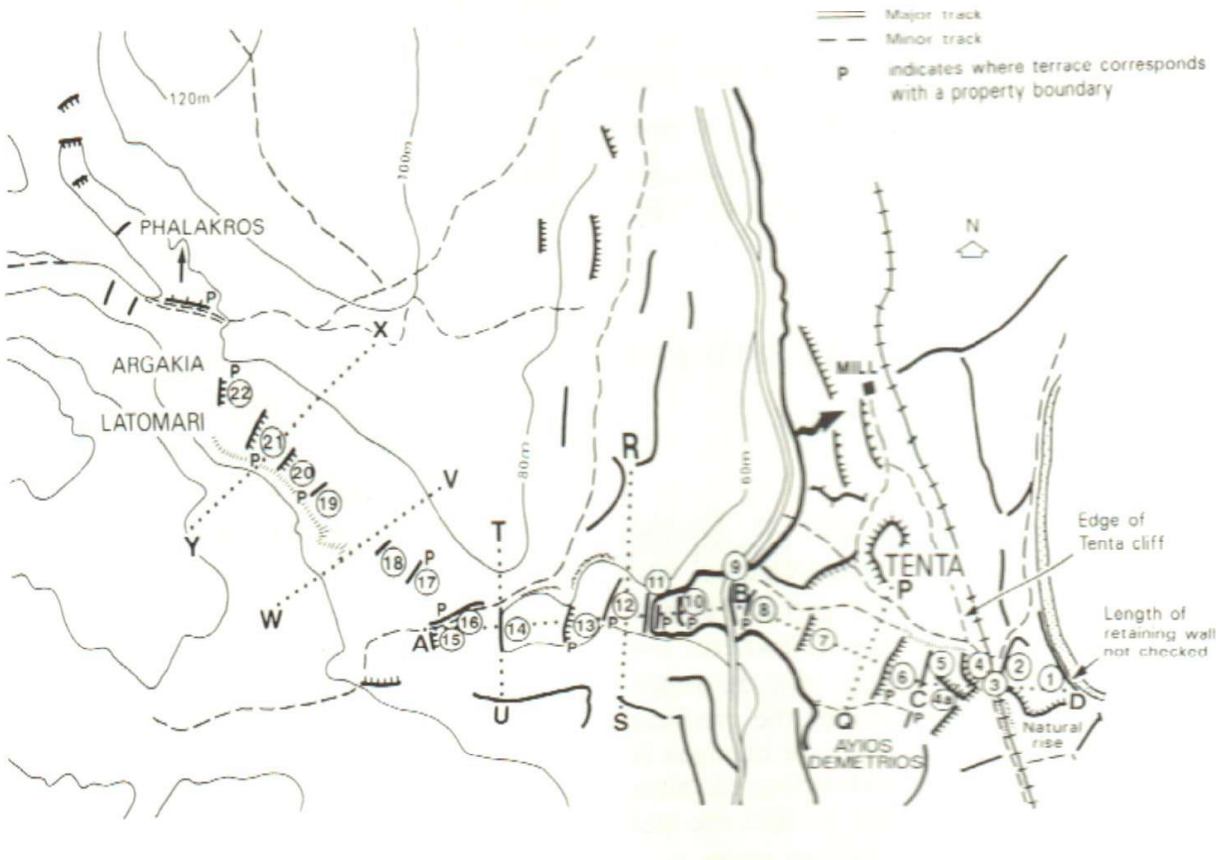


Fig. 6.15. A. Mapping of terrace systems in area of Kalavasos Tenta, down the drainage from *Khorapheri/Vounaritashi* (Wagstaff 1992)

Fig. 6.15. B. Walls in alluvial channel to the north of the *Khorapheri/Vounaritashi* hilltop (photo by author 6/2014).

Tochni *Petreli*

While the settlement evidence in the western part of the Vasilikos valley attests to the re-occupation of important parts of the region with access to sought-after resources, like stable slopes and water, an area in the far eastern part of the valley, on the coastal plain, indicates a possible expansion during the 8th/7th centuries into landscapes that may also have proven more viable in the early 1st millennium BCE. Neither the VVP nor the MVASP explored this area in depth, as it sits between both survey grids in the Tochni district, so that the settlement patterns in this area are not well understood for any period (Fig. 16).

Fig. 6.16. Area of sites in the lower Tochni district overlaid on topographic and cadastral maps.

It is thus difficult to tell whether there is really a move into new parts of the valley in the CA period, after a clear gap in occupation in the Bronze Age, or whether the appearance of sites is a function of less intensive survey work. Nevertheless, the mapping of the sites in the vicinity of Tochni *Petreli*, identified by Todd as a settlement and cemetery (*VVP* 9: 139-141), and the generally flat slopes and access to wider drainage networks on the coastal plain, suggest a definite exploitation of alluvial channels and arable land by the CA period. Tochni *Petreli* sits roughly 2 km from the coast on a relic marine terrace overlooking an alluvial channel that has since been converted into fields bounded by terrace walls and boundary walls (*ochtoi*; Fig. 17).

Fig. 6.17. The site of Tochni *Petreli* looking north during the early wet season, with the drainage to the right beyond the shrubs (photo by author 12/2012).

The area is almost entirely cultivated with wheat, carob and olive trees, as well as some dairy and shepherding structures. The site of *Petreli* first attracted the attention of Todd for a small, damaged CA cemetery on an exposed limestone outcrop, with rectilinear, subterranean features filled with vegetation. At least three tomb shapes were recorded in 1989, although they were probably looted in the past. Most of the ceramics associated with the tombs have been dated to the CA, with a couple fragments of Middle Bronze Age Red Polished wares, and then a smaller amount of Roman wares.

Further down the slope toward the relic alluvial channel, at a site that Todd called Tochni *Petreli* North (#102; *VVP* 9: 140-141), the VVP found additional concentrations of CA ceramics, including finer painted wares, pithos and coarse wares, and several Roman fragments, which

they posited belonged to a settlement attached to the visible cemetery higher up on the eroded terrace. Like the area of the cemetery, this apparent settlement had only a few Middle Bronze Age ceramics but an overwhelming CA ceramic presence. A fragment of a rectangular stone basin was noted on the edge of the site, as well as the remains of a linear stone feature in an area of dense concentrations of field stones. Todd suggested that the stones and associated artifacts "may indicate the presence of domestic structures with storage facilities; alternatively a more agricultural or industrial function may be posited" (*VVP* 9: 141). The survey site thus seems to represent one large settlement, placed along the edge of a seasonal alluvial stream, and a possible associated necropolis removed from the settlement on a ridge overlooking the drainage and the coastal plain.

While the original survey conceived of this settlement in a type of L-shape formation on the terrace overlooking the shallow alluvial drainage, re-survey showed considerable quantities of materials expanding to the north and west from the edge of this terrace (Fig. 18). Certainly some of the spread of the material results from mechanized cultivation, as the fields are heavily ploughed. Since the area is relatively flat, materials could be dragged and deposited across the several fields associated with the main cluster of evidence. On the other hand, the availability of fields and the quite dense concentrations of materials away from the alluvial channel suggest that the site was perhaps larger than Todd originally estimated, and took advantage of the stable slopes on the edge of the stream draining down to the coast, most likely for agriculture.

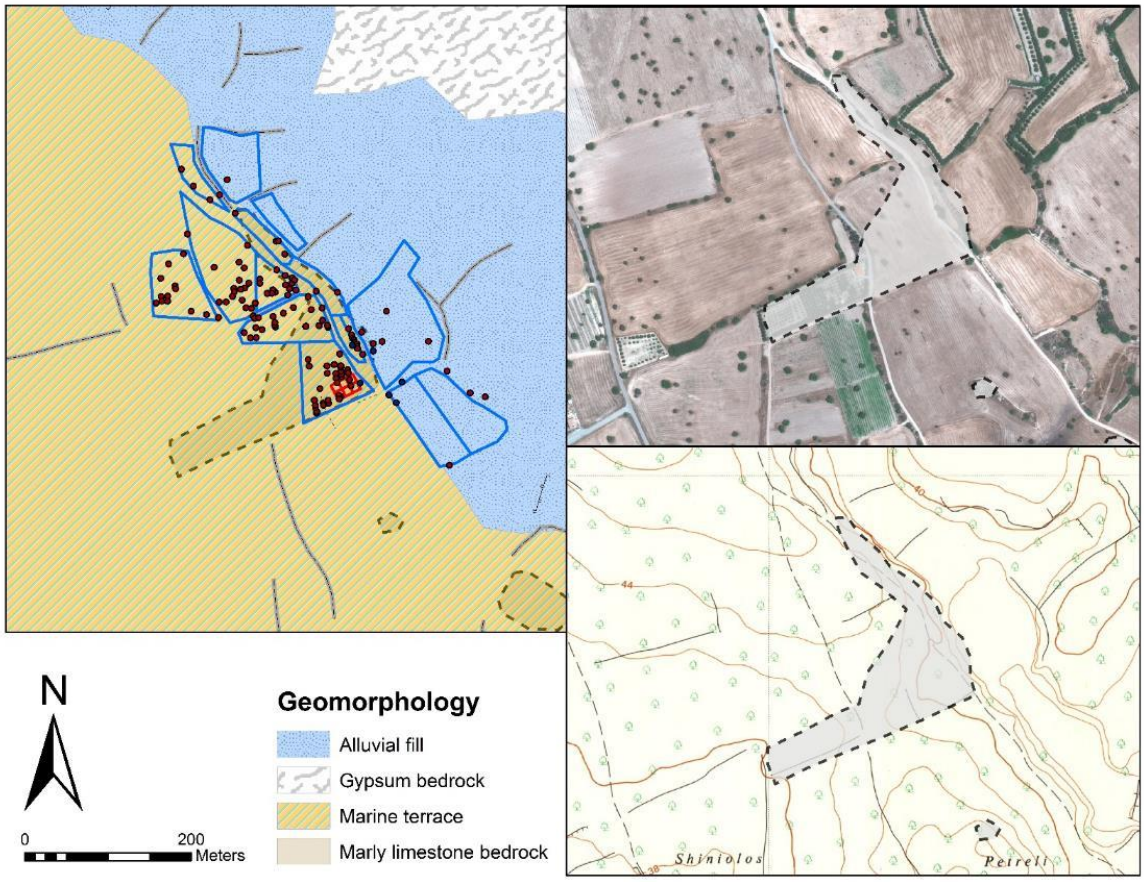


Fig. 6.18. Assemblages and geomorphology at Tochni *Petreli*, showing outline of previously hypothesized extent of site by Todd.

My own re-survey work, in both transects and 10 x 10 m squares in this area, also revealed large quantities of coarse wares and pithos fragments and nondiagnostic and undecorated body fragments, reiterating the probable domestic and utilitarian aspect of practices at the site. Roughly one kilometer to the southeast from *Petreli*, the VVP found remains of a similarly sized settlement at Tochni *Mouthkia*, with evidence of olive oil processing, in the form of stone weights (Todd *VVP* 9: 136-137). The numerous quantities of CA ceramics situate the site within the 8th-5th c. BCE, and suggest one aspect of the local agropastoral economy within this flat coastal plain. The scale of the equipment at *Mouthkia* perhaps alludes to a community

investment in oil production, consumed locally as well as potentially traded outside of the fertile lower valleys (e.g. Hadjisavvas 1996).

How might the Tochni *Petreli* tombs have been integrated with the settlement, and with mortuary practices across the region? While we can look from a macroscale at shifting designs in mortuary landscapes, we are less aware of the materialities and practices active in the production of new cemeteries. As mentioned in **chapter 5**, there has been little excavated work done on the Iron Age in the Vasilikos and Maroni region, save for a handful of salvage operations on CGIII/CA tombs, at Mari (Hadjicosti 1997b), Maroni (Karageorghis 1972: 1017-1019), and Khirokitia (Flourentzos 1985). These three singular examples consist of mostly small-scale burials, of a few individuals, with some evidence of re-burial at later phases in the early 5th c. BCE (a general trend, Hamilakis and Sherratt 2012: 200). At the Mari tomb, for example, the Department of Antiquities of Cyprus excavated a rock-cut chamber with the remains of three human skeletons, two adults (male and female) and one child (Fig. 19), while the second phase of the Khirokitia *Anaphanties* tomb had two individuals, including a (possibly) young adult woman (Flourentzos 1985: n 4).

The materials associated in these tombs include amphorae, bowls, and jugs of mostly local production or local imitation of Phoenician imports, or Greek imports, and are stylistically related to materials from the nearby site of Amathus that date from the second half of the 8th century BCE to the mid-7th c. BCE (Hadjicosti 1997b; Flourentzos 1985: 229). While the large amphorae from the Mari tomb belong to the most common categories found across the island, less common objects include bronze rings, weights, bowls, and a rare iron sword. In the Khirokitia tomb, a large amount of silver jewelry was found, including very uncommon beaded necklaces with rosettes and rings, as well as more common boat-shaped earrings similarly found

in contemporary tombs around Amathus (Flourentzos 1985: 230). In the slightly earlier but poorly preserved Maroni village tomb, less common CGIII vessels were paired with a unique iron adze and knife, still in its sheath (Karageorghis 1972: 1118).

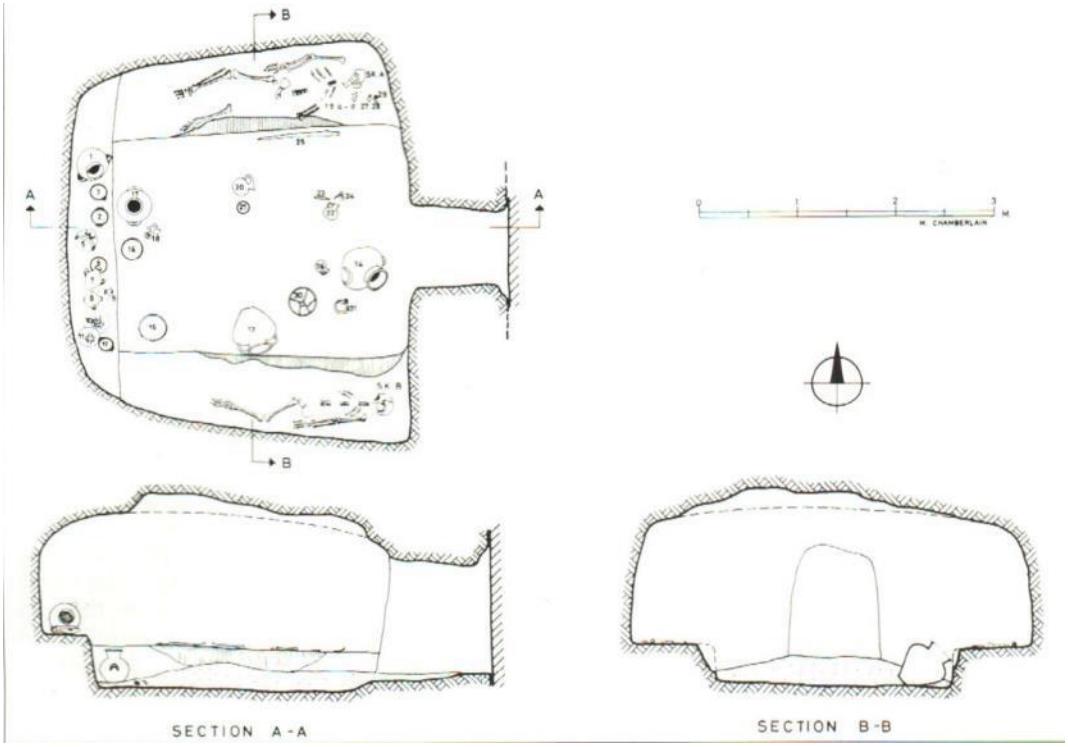


Fig. 6.19. Plan section of Mari tomb, dating to the CA I period, excavated by the Department of Antiquities (Hadjicosti 1997b).

The excavators concluded that the Mari and Khirokitia tombs were not rich in pottery, compared with others of the same period, but that they indicated the flourishing community in each area given the unique metal objects and the assortment of both common and less common ceramic ones (Hadjicosti 1997b). The presence of rare swords may hint at a warrior elite aesthetic appearing on the island during the early 1st millennium BCE in iconography and funerary votives (Hamilakis and Sherratt 2012: 195). While these tombs contained inhumations, their position and composition may align with a contemporary shift to including cremations in many of the period's new burials, suggesting an ideology of funerary rites as public spectacle

during the Iron Age – with the smells, sounds, and performances of cremation – as opposed to Late Bronze Age (Hatzaki and Keswani 2012: 321-322). The distancing of tombs from settlements may have required a procession, which would have been visually strengthened if moving to ridge-top cemeteries such as the ones at Mari *Moutsounin/Mandra tou Rirou*, mentioned above. Singular tombs from separate places create a very small sample for interpreting local mortuary practices, let alone extrapolating these for the region writ large. But the inclusion of such unique metal objects, jewelry, and uncommon ceramic shapes in tombs far outside the gaze of the Iron Age city on Cyprus perhaps expresses the appearance of social boundaries by the 7th c. linked both to increasingly accessible interregional trading networks, most apparently via Amathus, as well to local patterns of distinction in the mortuary landscape.

The meso-scale: the Vasilikos and Maroni region at large

Current published survey material, and the unfortunate loss of records for the north of the island post-1974, limit a complete analysis of the island (Fig. 20). Nevertheless, the existing records, and recent attempts to perform second generation survey (Diacopoulos 2004), afford an opportunity to measure the landscape changes identified in the Vasilikos and Maroni region against interregional patterns. Several scholars have conducted brief reviews of the available archaeological survey evidence for the Iron Age of Cyprus in order to compare regional trends across the island, including Rupp (1987: 150-151) and Todd (*VVP* 9).[230] What follows are brief accounts of several surveys, their methodologies (if available), and their interpretations on settlement and land use practices for the LCIII, CG and CA periods. Where possible, with adequate information, I investigate interregional changes in site location, site continuity, and site

[230] For an additional review of the history of survey on Cyprus see Şevketoğlu 2000.

interaction.[231] It is nevertheless important to preface this discussion with the caveat that each project had disparate aims, methods, and levels of intensity (*sensu* Alcock 1993), so that the patterns that emerge must remain at the level of suggestive alignments or anomalies, rather than more conclusive arguments about chronologies or materials.

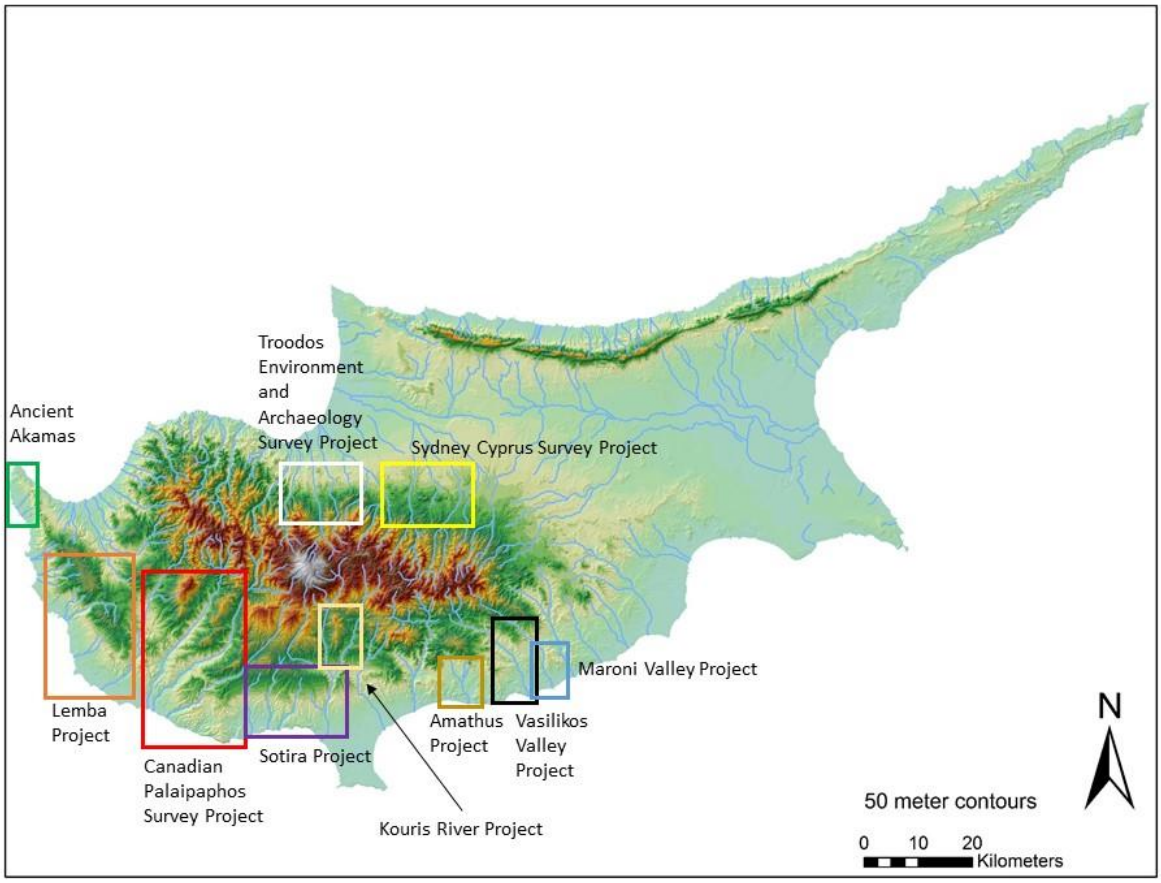


Fig. 6.20. Outlines of surveys in southern Cyprus providing information for comparative survey of Iron Age sites.

[231] Due to the current restriction of the northern part of the island, and the inaccessibility of many of the earlier projects that surveyed that area, I have chosen to limit this comparative synthesis to the surveys undertaken in the Republic of Cyprus, from the Akamas Peninsula to Larnaca Bay.

The most relevant survey performed in proximity to the Vasilikos and Maroni valleys was the French Survey Project which explored the surroundings of the urban center of Amathus in the late 1980s and 1990s (Petit *et al.* 1989; Petit 1996: 173-182; Aupert 2000: 98-103). Several field reports illustrate their finds although no conclusive publication exists on the survey data or methodology. According to the first publications of the survey project, its methods and aims focused on the economic resources and settlement patterns of the Ayios Tychonas, Armenochori, Parekklisha and Pyrgos districts outside of the acropolis of Amathus with its several surrounding cemeteries (Petit *et al.* 1989: 889; Kiely 2005: 190; Janes 2013). From these expeditions, the project was able to interpret rough patterns of discontinuity and continuity in the Amathusian landscape: a dense occupation during the Neolithic period, an almost complete gap in occupation in the Chalcolithic and Bronze Age periods, and then a rise in rural sites dating to the CGIII and CA periods (beginning ca. 9^{th}-8^{th} c. BCE) that appear to have been consistently occupied until the 4^{th} c. BCE (Aupert 2000: 99). Thomas Kiely (2005: 193) has argued that the 11^{th} c. material found at Kommissariato near the modern city of Limassol, including tombs and a rural shrine, may serve as the progenitor for the population that eventually occupied the Amathusian area.

The plotting of these sites in relation to local geomorphology is coarse, although it is possible to see that on the whole, settlements in this area seem to align with available water sources, particularly tributaries and their side drainages. In addition, the Amathus survey found a number of features in the area north of Ayios Tychonas that suggest a close management of water in the post-Bronze Age periods, including cisterns, traces of rock-cut irrigation channels forming an aqueduct, and terracotta tubing fragments from the Roman period (Petit 1996: 182, fig. 71). The discovery of rock-cut treading floors, in combination with catchment vats in

territory, provides valuable evidence for rural agricultural practices (Hadjisavvas and Chaniotis 2012: 161). A further intention of the survey was to establish connections between Amathus and the mineral resources of the hinterland, especially copper and stone quarries, to examine industrial activities (Petit *et al*. 1989).[232] While no slag heaps were found of the size at Kalavasos, 15 km to the NE, the survey did find evidence for possible copper exploitation at *Mazokambos* and stone quarries that would have contributed to the construction of the monuments at Amathus and its port (Petit 1996: 179-180).

In the western part of the island, several survey projects have examined the settlement histories of the region around the ancient site of Paphos (Palaipaphos, and the modern village of Kouklia). Since the days of antiquarian excavations, the area surrounding the sanctuary of Aphrodite at Paphos is known to have had several large necropoleis dating to the transition from the Late Bronze Age to the CG and CA periods, including most famously Palaipaphos *Skales* and 'Spilaion tis Regainas' at *Arkalou*, and later mid-1st millennium BCE structures at the localities *Hadjiabdulla*, *Marcello*, *Laona*, and *Mantissa* (Iacovou 2008c). One of the projects that explicitly aimed to understand this Iron Age landscape activity beyond the coastal plain was the Canadian Survey Cyprus Project directed by David W. Rupp, which undertook extensive and intensive survey between 1979 and 1991 (2004, 1987; Sørensen and Rupp 1993; beginning in 1992 as the Western Cyprus Project). The survey explored four separate river valleys in this area – the Ezousas, Xero, Dhiarizos, and Khapotami rivers – with the initial intention to understand the territory of secondary and tertiary sites dependent on the kingdom at Paphos. Over several field and study seasons, the project confirmed that the Palaipaphos region had continuity in occupation and activity from the LBA to the CG and CA periods, including material from the

[232] Petit (1996: 179) notes the passage from Ovid *Met*. 10.220, 531, in which the poet mentions the metal wealth of Amathus (*fecunda gravida metallis*), discussed further in **chapter 7**.

often invisible LCIIIA and LCIIIB periods (Maier 2004: 20; Iacovou 2005a: 21). Nevertheless, the CSCP found little material dating before the CGIII-CAI transition (Rupp 1987: 149; Sørensen 1992: 358): of 63 sites with CG and CA material, only 2 possessed ceramics from the CGI and CGII periods, while there were 34 sites with CGIII presence and 60 with CA.

From this data, Rupp proposed a three-tier settlement model for the Paphos catchment, centering on the first tier at Palaipaphos itself, with a fortified urban center. Palaipaphos sits in the eastern end of the coastal plain, at the mouth of the Dhiarizos River, and this specific valley had the second-most number of recorded survey sites, after the Ezousas (Rupp 2004: table 5.3). Rupp then suggested a tier of "fair-sized town-like" settlements outside of the urban center on the first plateau above the coastal plain, although only one survey site appropriately fills this category (1987: 150). The majority of survey sites identified are small settlements, either clustered along the slopes of the rivers or surrounding larger settlements (1987: 151). Based on her study of the local ceramics, Lone Wriedt Sørenson (1992: 359ff; 1987) found no distinct regional signature for the presence of different types of painted decoration (such as the very common White Painted and Black on Red types as opposed to less common Black Slip), arguing for the predominance of mixed assemblages and communities who likely used the same clay for vessel production (see Gjerstad 1948: 48ff). In relation to the important early CG tombs at Palaipaphos *Skales* outside of the center at Paphos, the region's survey ceramics also indicate that certain vessels – such as Black Slip and small juglets – were reserved for tomb contexts as they do not appear in any of the surface finds. Similarly to the VVP, the CSCP found terracotta figurines most likely associated with the Iron Age at possible sanctuary sites in the Dhiarizos valley, near the coastal plain, suggesting areas for ritual gathering.

In the Akamas peninsula, on the western coast of the island, early antiquarians like Cesnola (1877) and Hogarth (188) recorded ancient structures and ceramics, but most of these were dated by subsequent travellers to either the early prehistoric period, or the much later Hellenistic, Roman, and Late Roman-early Byzantine periods (Fejfer 1995: 56-57). Noticeably absent were materials from the Bronze and Early Iron Ages in this area, despite the significant CA center of Marion further east along the Polis Bay. In 1969, Lorenzo Quilici (1971: 171) recorded a scatter of LBA and CG ceramics in the area of Ayios Epiphanios on the northeastern side of the peninsula, while survey in the lower eastern part of the peninsula near Drousha found no CG/CA ceramics, and very little Bronze Age material (Baird 1984: 64-65). The Danish Akamas Project conducted an intensive survey of the western Akamas in the 1990s, and likewise found little material dating to the Bronze Age or the later CG and CA periods (Fejfer 1995: 21, 141).

The fragments that were found consist mostly of CA I transport amphorae and Levantine imports, and while none appear in the major Roman settlement of Ayios Kononas in the area, they do accumulate in a natural anchorage called Kioni on the western coast, suggesting the use of a possible harbor. A seasonal stream leads down from the peaks of the Akamas towards Kioni, with evidence of agricultural terracing, so that while multiple Akamas surveys found no Iron Age settlements, it seems possible that local communities, perhaps based around the Polis Bay and taking advantage of a harbor for trade, may also have been using the steep slopes of the peninsula for cultivation. A survey conducted in the area of Peyia further south along the western coast, however, identified areas of CA material along a stream at Peyia *Sarakkos*, suggesting possible communities to the south who used the flatter coastal plains for cultivation (Baird 1985: 345-346). Numerous fragments of terracotta statues, votive figurines, and objects

like loom weights also point to the presence of an 8th-5th c. BCE sanctuary or ritual space in a natural bedrock outcrop at Peyia *Tremithas,* although the site was damaged by bulldozing (Baird 1985: 345).

The area surrounding the important Late Bronze Age sites of Hala Sultan Tekke and Kition on the eastern coast at Larnaca Bay has typically been surveyed in order to understand its protohistoric, 2nd millennium BCE development, and the possible structure that linked these coastal towns with the inland mountains during the age of Alashiya (e.g. Leonard Jr. 2000). The Pyla *Koutsoupetria* Project working in the Larnaca Bay, on the other hand, has found little CG-CA evidence in the area surrounding Pyla *Kokkinokremos* and instead has documented a dramatic Roman to Late Roman landscape (Caraher *et al.* 2014: 146; 273-276).[233] More recently, Anna Satraki (n.d.) has attempted to map the development of the territory of Idalion in the center of the island, and the nearby Tremithos River valley, to the east of Kition, using survey sites which were noted by Hector Catling and the original Cyprus Survey in the mid-20th c. CE. She has identified a break in occupation after the Late Bronze Age, with some presence at Idalion continuing to manage copper mining and metallurgy near the area of Mathiatis-Shia-Pyrga. By establishing a port somewhere near the mouth of the Tremithos River, the city of Idalion could control the movement of copper for export. The nature of the survey evidence for the sites linking this presumed port and the inland copper region is however not well published.[234]

[233] Some finds dating to the Iron Age are known from a nearby site called Ormidhia, excavated by Cesnola (Caraher *et al*. 2014: 275), as well as a probable CA sanctuary site at Pyla *Stavros* (Caraher *et al*. 2014: 277).

[234] There is a recent but unpublished master's thesis on the settlement of the Tremithos River, by F. Markou (2013) *Θέσεις και χρήσεις της υδρολογικής λεκάνης των ποταμων Τρέμιθου και Πούζη από την Πρώιμη Κυπριακή Χαλκοκρατία ως τη Ρωμαϊκή περίοδο. Επιφανειακή και αρχειακή έρευνα,* University of Cyprus.

In the center of the island, and particularly along the important Kouris River valley which leads from the Troodos to the area in the Limassol district of Episkopi on the southern coast, survey projects have also recovered evidence of early 1st millennium BCE material. The Italian-led Kouris Valley Project explored the upper part of this valley and specifically its prehistoric and protohistoric development in 2007 (Jasink *et al.* 2008a; Jasink *et al.* 2008b). The project identified ten sites in roughly 2 sq km of survey area, including three probably intervisible sites on high ridges that the team suggests had control over the local road-network that used the valley to connect the mountains to the coast (Jasink *et al.* 2008a: 165). In terms of diachronic settlement, the KVP found mostly Bronze and Iron Age ceramics, suggesting possible continuity, although most of the ceramics date to the CA period and not the CG period.[235] Specifically, the project recorded an area with several rock-cut tombs associated with considerable CG and CA material (Jasink *et al.* 2008b), as well as a rock-cut chamber or "cave" that was perhaps used for rural cult practice, with two niches, and painted CG and CA pottery.

For the southern coast and the lower Kouris and Paramali valleys, with important prehistoric sites near Erimi, Sotira, and Episkopi, Thomas Kiely (2005: 177-199) examined the long-term trends around the kingdoms of Kourion and Amathus. Episkopi *Kaloriziki*, the supposed successor to the Late Bronze Age site of Episkopi *Bamboula* abandoned at the end of the 12th c. BCE, consists of a large burial ground of the CG-CC period, with new tomb shapes and rich 11th c. grave goods (Kiely 2005: 178-182). At *Bamboula*, evidence for the re-occupation and re-use of the site as well as the creation of cemeteries at *Yerokarka* and *At Meydan* and the sanctuary of Apollo Hylates indicates a "small-scale but significant expansion of

[235] The preliminary reports for these finds do not give detail for the separate types found at each survey site, however, and only mention "Geometric" or "Archaic" ceramic divisions.

settlement around the older center" (Kiely 2005: 185).[236] The Sotira Archaeological Project undertook a survey to examine the development of the associated regional countryside (Swiny and Mavromatis 2000). Given the attraction of the later sanctuary of Apollo *Hylates* at Kourion, and the harbor there with its important Late Roman urban center,[237] the survey – with limited available information on specific surveying methods other than block grid strategy (see Swiny 2004) - found that the greatest occupation in the countryside was during the Roman-Late Roman and then the early medieval periods in the form of numerous small farmsteads. Finds dating to the CA period were restricted to the area of the Kouris valley and in particular two looted tombs on the edge of a steep gully overlooking a dense side drainage network of the Kouris. The small amount of CA material, in the form of isolated tombs (but perhaps connected to tomb clusters), seems to follow the trend seen in the upper Kouris valley of placing tombs on the upper slopes of the river channel. The lack of 2nd millennium BCE material in the area, however, seems to contrast the apparent continuity found by the KVP, and might suggest a different mortuary pattern connected to potential unrecorded settlements placed along the lower river system near the coast.

The Sydney Cyprus Survey Project (Given and Knapp 2003), undertaken in the late 1990s and early 2000s along the northeastern edge of the Troodos, had an explicit aim of understanding the social and symbolic landscapes of the island throughout its long (pre)history. Its methodology thus sought to confront the challenges of archaeological survey work by focusing on "places of special interest" and identifying "chronotypes," or scalar characterizations of surface material that work down from function, period, and type to potential decorative or

[236] "The acropolis of Kourion has produced virtually nothing of archaeological significance before the Classical period" (Kiely 2005: 186).
[237] Currently under investigation by the Kourion Urban Space Project, directed by T. W. Davis.

production-related traits, narrowing in on more and more robust types.[238] The earliest 1st millennium BCE material found within the SCSP survey area dates to the CGIII period, and is relatively uncommon, while the team found abundant CA material throughout all of its survey areas. In one concentration of Iron Age sherds at Kalokhorio *Zithkionas*, the SCSP survey identified a sanctuary site, while several areas of mining-related activity dating to the Iron Age were found at Agrokipia *Kriadhis* (9th, 8th, 5th c. BCE), Politiko *Kokkinorotsos* (8th-5th c. BCE) and Mitsero *Kokkinokoyia*. The site of Politiko *Ayios Mnason* may have been related to pottery manufacture as well. Signs of settlement, however, are less prominent, and the SCSP team hypothesized that the landscape would probably have consisted of dispersed farmsteads in addition to the sites related to mining.

The Troodos Archaeological and Environmental Survey Project (Given *et al.* 2013a, 2013b), which worked in the northern foothills of the Troodos massif, also found limited surface assemblages that could be confidently dated to the early 1st millennium BCE, and extremely little that belongs to the CG period. Owing to the poor understanding of Iron Age ceramics from surface collections (Janes and Winther-Jacobsen 2013b), TAESP recorded only seven places with CG and CA material, including two presumed rural sanctuaries at Katydhata *Pano Limna* and Evrykhou *Khalospitia*. Their findings seem to indicate that entire areas of the foothills lacked any visible Iron Age material (such as Asinou and Koutraphas), while the well-watered Karkotis Valley had a broad scatter (Given *et al.* 2013b: 148). The sanctuary at *Pano Limna* is situated close to the mines at Skouriotissa, and the survey team – working similarly to the methodology of SCSP mentioned above – found a range of ceramics, including heavy utility

[238] In other words, a very broad chronotype might simply be "coarseware historic", ascribing to the piece the rough function and period, while a more detailed chronotype would also include specific sub-period, style, and fragment type. Others have noted that the intricacy of this method (although replicated by some, e.g. Caraher *et al.* 2014) makes it difficult to use in comparative surveys (Alcock and Cherry 2004).

wares, finely decorated table wares, and transport amphorae. A brief resistivity survey undertaken at the site revealed possible circular anomalies along terrace walls, which may relate to similar features at the CGIII sanctuary of Anat-Aphrodite in Idalion (Gjerstad *et al.* 1934: 821). In addition, large numbers of terracotta figurines covered the surfaces of Pano Limna, and belong to a type of votive object concerned with vegetation, similar to 6th c. BCE figurines found at the sanctuary of Apollo *Hylates* outside of Kourion. Beyond the indications for small-scale rural ritual landscapes, however, TAESP found the CG and CA material the most elusive of the survey area, and did not record a definite settlement for this period. One substantial cemetery appeared near the sanctuary at Khalospitia, and previous visits to the area by the Cyprus Survey had recorded other Iron Age tombs, but the region offers no conclusive picture on mortuary behavior.

Discussion

This comparative look at several diachronic surveys on Cyprus – some with more intensive, and better published methodologies than others – reveals some coarse trends in early 1st millennium BCE settlement and land use and some potential regional ones as well, related to location, continuity, and interaction. In terms of broad chronological scale, as others have noted, it seems apparent that visible occupations or activity areas do not appear until the end of the 9th c. BCE and the CGIII period, a pattern which is replicated across the island (Rupp 1987). While there are isolated earlier CGI-II tombs at the important necropoleis around Paphos, Episkopi/Kourion, and Kition, the broader landscape does not show signs of intensive settlement until the CGIII phase, and that is overshadowed by the documented rise in sites of the CA I period beginning in the mid-8th c. BCE. Similarly, most of the survey assemblages associated

with this settlement shift are located along river drainages, as seen in the Vasilikos and Maroni region, although this is certainly a function of major projects choosing river valleys for survey grids (e.g. Rupp 2004; Jasink *et al.* 2008a; Todd *VVP* 9). While not every survey had specific interest in Iron Age site placement, and their positions on maps are often difficult to discern, these sites do seem to cluster on slopes of river or drainage networks, indicating a strong preference for proximity to seasonal water and arable fields (e.g. Rupp 1987). It is certainly clear that the coastal plains of the island, which have seen the most destruction for residential or industrial building, have the least amount of recovered sites due to this disruption and that many 1st millennium BCE settlements either have been destroyed (e.g. Mari *Mazera*, Todd *VVP* 9: 119), or covered over by building, ploughing, or coastal erosion (e.g. Tochni *Lakkia*). Similarly, the lack of surveys in the interior of the island, except for the SCSP and TAESP, skew the data away from settlements that may have been occupying higher, upland slopes.

There are also suggestive regional patterns related to continuity and disruptions and significant oscillations in permanent settlement. In places like the Paphos catchment and the Vasilikos and Maroni area, many sites with 9th/8th c. BCE evidence tend to also be associated with significant Late Bronze Age presence, or even Middle Bronze Age presence, suggesting a return every few centuries to prominent parts of the landscape, especially along river valleys or areas of dense stream drainages. The upper Kouris valley shows a similar pattern, with CG and CA tombs proximate to 2nd millennium sites and occupying the same high alluvial terraces. In the Akamas region, however, and along the southern coast in the hinterland of Amathus (e.g. Iacovou 1994: 156), these 9th/8th c. developments in more permanent practices and mortuary landscapes seem to represent the first occupations since the earlier prehistoric periods, in the Neolithic and Early Bronze Age, suggesting a much more dramatic abandonment and re-

settlement pattern. The lack of evidence for settlement around the short-term site of Pyla *Kokkinokremos*, until ca. the classical period, may point to the general avoidance of the area until much later (Caraher *et al*. 2014: 274). The two areas of Kourion and Amathus, on either side of the Akrotiri peninsula, have different 2nd millennium histories: there is considerable evidence for Late Bronze Age activity at Episkopi *Bamboula*, out of which Kourion likely developed (e.g. Kiely 2005), and little evidence for Late Bronze Age occupations at Amathus. Both Kourion and Amathus have significant early CG necropoleis, such as Episkopi *Kaloriziki*, suggesting some aggregation of settlement nearby in the 11th and 10th c. BCE. Further investigations may indicate the areas from where populations were moving during the 8th c. BCE.

We can see these disparate trajectories in landscape investment by briefly putting the Vasilikos and Maroni region side by side with the available survey evidence from around Amathus (e.g. Petit 1996). Figure 21 shows patterns of diachronic settlement using the same continuity code from **chapter 5**. While the VVP and MVASP data show diverse patterns of Bronze Age and Iron Age settlements sharing the same hilltops and slopes, and the considerable re-use of Bronze Age remains, as at Maroni *Vournes*, the area of Amathus seems to lack any later prehistoric material. Instead, as at some sites in the Vasilikos valley, the 9th-8th c. BCE sites that emerge in the Amathus watershed either stake claim to areas for new practices, or re-occupy areas with much earlier prehistoric presence. Given the similarities between the Amathus survey methods and those of the VVP, with small teams, walking in mostly non-intensive tracks to prominent parts of the landscape, the divergent patterns in continuity are perhaps more striking. The prominence of Kalavasos *Ayios Dhimitrios* and Maroni *Vournes* and their urbanism in the later 2nd millennium would certainly have attracted people from the rural Amathusian area to the Vasilikos and Maroni valleys. The earlier re-occupation of the Amathus ridge in the 11th-10th c.

BCE, as exemplified in its rich burials (Janes 2010, 2013), seems to suggest instead a disinvestment with the lower Vasilikos and Maroni region, and a return to more permanent settlements only by the 9th-8th c. BCE, perhaps when the conditions made it suitable to cultivate more land. On the other hand, as Kiely (2005: 193-194) has posited, there might have been a closer relationship between the area of modern Limassol and Amathus than with the Vasilikos and Maroni region, which may further highlight the forced nature of current discussions linking the formation of Amathus with the abandoned centers of Kalavasos *Ayios Dhimitrios* and Maroni *Vournes*.

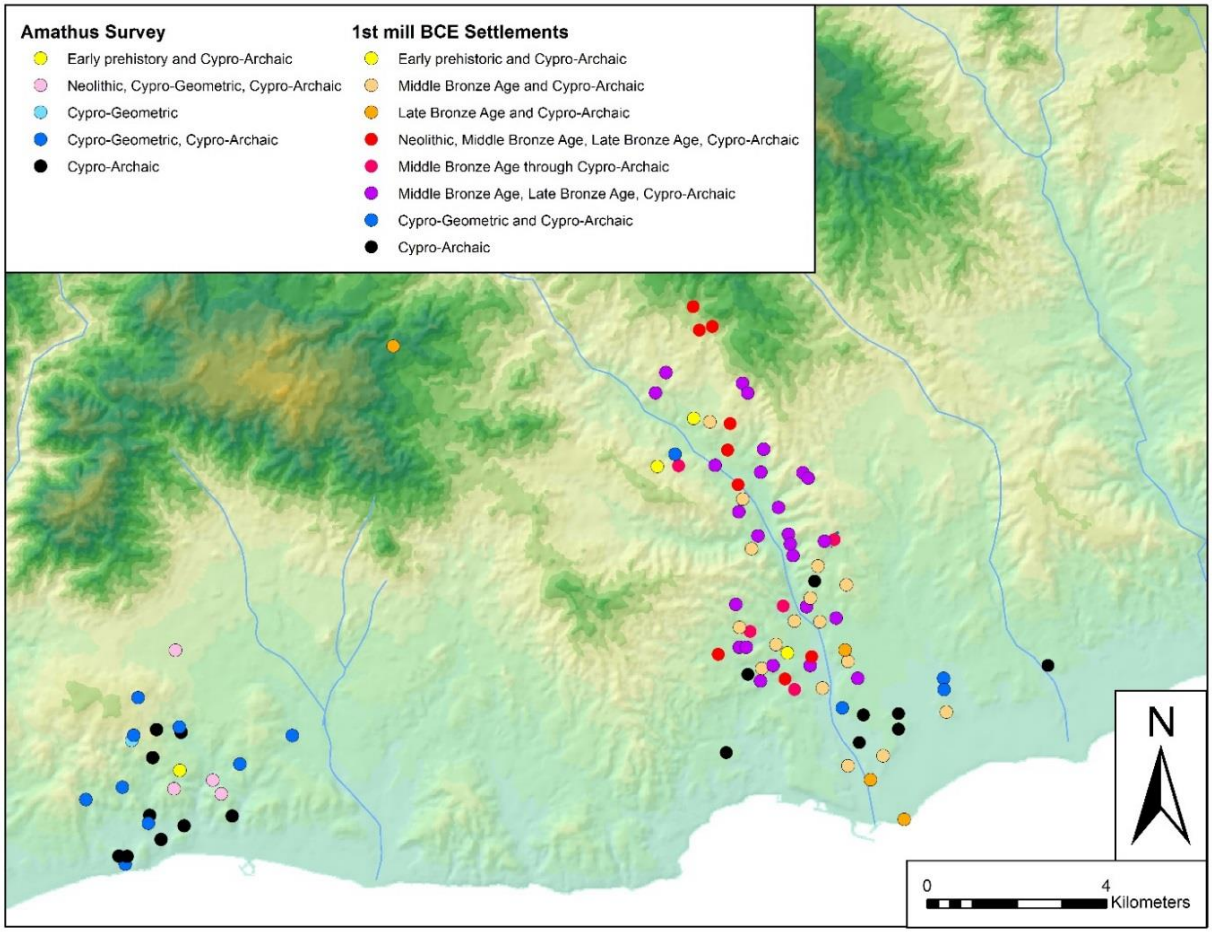


Fig. 6.21. Comparison of the Amathus and VVP/MVASP survey data, coded by continuity (see Table 5.5).

The mortuary place-making practices identified in the Vasilikos and Maroni region in **chapter 5** share similar trends seen in survey evidence across the island. CG and CA tombs on high ridges along watersheds appear in the Kouris valley, the Amathus hinterland, and the Paphos area, especially in the Dhiarizos and Ezousas valleys. Certainly, the number of looted Iron Age tombs found during survey is related to their visibility and can be a function of methodology, as they make up the most consistent survey assemblages for the period; that is to say, the Iron Age material that projects tend to find are the painted wares associated with looted tombs. There is thus a danger of circularity in identifying a pattern of tombs discovered through survey that typically only notices tomb materials (compounded by our lack of understanding of Iron Age utilitarian and coarse wares). Nonetheless, their positioning on visible and even intervisible features of the landscape points to a more general cultural trend in burial practices that extended beyond the urban fabric of the coastal centers.

Less attention has gone to understanding mortuary landscapes in the countryside and the relationships between tomb and cemetery (see Janes 2008). It is possible that the separation of cemeteries or clusters of tombs from areas of settlement or production was a more common fixture in these areas, where small villages removed their funerary spaces from those of daily practice. The excavated LC site of Aredhiou *Vouppes* can serve as one example, mentioned in **chapter 5** as a rural settlement between the copper mining areas and the LC coastal centers. During a survey of this small site, excavators found possible tombs cut into the edge of a nearby cliff, suggesting an alternate spatial pattern for burials than in LC towns, where tombs tend to be located within the built environment, sometimes beneath houses (Steel and Janes 2005: 235-236). Priscilla Keswani (2004) has likewise posited that LC rural communities maintained more traditional separations of tomb and domestic space than urban counterparts. While speculative, it

seems possible that a similar retention of these trends may have endured into the 1st millennium BCE. In the Vasilikos and Maroni region, we can see this sort of distancing at Asgata *Neron tou Phani*, Tochni *Petreli*, and the cemeteries in the Mari region, which occupy higher or prominent slopes overlooking the valley.

No subterranean cave-like features associated with ritual have been found within the Vasilikos and Maroni region by survey, which might compare to the Iron Age examples found within the vicinity of Soli (Loulloupis 1989) and the Kouris Valley (Jasink *et al.* 2008a), and the mid-1st millennium BCE rock-cut chamber with figurines found at the copper metallurgy site of Ayia Varvara *Almyras* in the central Mesaoria plain (Kassianidou 1998). These cases suggest a possible island-wide pattern of rural ritual practice using quasi-natural features for votive deposits (such as the outcrop at Peyia *Tremithas*, Baird 1985: 345), although the nature of those practices is questionable given the paucity of associated finds. The other pattern centers on the creation of accessible *temenoi*, whether re-using monumental remains as at Maroni *Vournes*, or building gathering spaces with circular or semicircular boundaries, as identified by the TAESP (Given *et al.* 2013b). The setting for these rural sanctuaries on terraces near agricultural land, without direct evidence of settlement, may hint at their agro-pastoral context, especially with the frequency of votives related to agriculture or pastoralism (e.g. Ulbrich 2012; Todd and Warren 2012: 51; Toumazou *et al.* 2011). Given the placement of the Maroni *Vournes* shrine near the important coastal route, and its visibility from the sea on a slightly raised contour, it is likely that this sort of ritual fixture held importance beyond the southern Maroni valley, and its development inside the LC ashlar building may have been an intentional visual reclamation of earlier remains to garner more roadway attention. The findings of a CA sanctuary with almost life-sized statues at Peyia *Tremithas* near the western coast, on a gentle slope overlooking the

coastal plain (Baird 1985), may also fit within this category of small-scale local ritual places aimed at attracting travellers moving up and down the coast.

It would be difficult not to notice the further correlation between some new 9th/8th c. BCE ritual gathering spaces, as identified by the CSCP near Paphos and the SCSP and TAESP projects in the northern Troodos foothills for example, and copper-bearing ore deposits surrounding the mountains. The later 5th c. BCE structure at Kalavasos *Skourka* in the Vasilikos Valley, eventually covered in slag and possessing numerous figurines (Flourentzos 2008), hints at the continuation of this relationship between metal-working and the cult practices of local communities. There indeed exists a long-term debate about the links between copper metallurgy and ritual in the Late Bronze Age, as embodied in figurines carrying copper ingots found at Enkomi (Webb 1999: 299-300) and reiterated in the proximity of metal workshops to identified *temenoi* (Knapp 1986, 2013: 381).[239] In addition to a continuity of copper-related cult, and based on the above-mentioned survey evidence, it also seems reasonable to suggest a potentially gradual growth of ritual practices around settlements linked to the re-investment in copper mining seen across the island. As communities established more permanent mining and processing installations, whether serving small-scale consumption or larger-scale export at the major centers (Kassianidou 1998, 2013), these spaces emerged – some cut into limestone ridges to create subterranean chambers, others built with temenos walls – for social gatherings.[240]

[239] The association of ritual objects and mines is also not localized to Cyprus; the silver mines of Laurion in mainland Greece, for example, show distinct connections between mining and divination. I thank Richard Neer for pointing this out to me.

[240] As discussed in the next **chapter** (7), there is also a representational dimension in ancient Greek and Roman texts linking Cyprus to mythic, ritual figures associated with deities of iron metallurgy.

An epilogue at the macro-scale: emergent landscapes in the eastern Mediterranean

As a way to conclude this chapter's comparative approach to landscape experience, I probe a more broadly-scoped investigation by looking at alternate developments on the other major island of Crete, and in the southern Levant, as compared to Cyprus. These two regional studies do not aim to represent a comprehensive or exhaustive picture of the available evidence, but instead suggest some of the disparate ways in which communities in the 9th/8th c. BCE were responding to environmental as well as political, economic, and cultural shifts in the context of settlement structure and land use. Both east Crete and the southern Levant present semiarid conditions similar to Cyprus, yet widely different histories of Iron Age development: Crete, the land of "100 *poleis*," is linked (although tangentially, see Prent 2014) to the transformations of the Aegean and to the emergence of the Greek city-state, while the areas of southern Jordan and Israel belong to the complicated trajectories associated with the end of Late Bronze Age Egyptian (New Kingdom) control and the rise of Levantine regional monarchies, such as the kingdoms of Moab, Edom, and Israel.[241] They also offer some of the newest research on early 1st millennium BCE landscape change, especially in relation to environmental settings and diachronic place-making practices.

East Crete

As Mieke Prent (2014) has recently noted, the post-Minoan landscapes of Crete have only recently gained attention, and as similarly envisioned for Cyprus, they now stand as idiosyncratic (and often omitted) cases compared to the more informed reconstructions of Greek

[241] As Killebrew (2014: 597) says, the northern Levant is currently much less explored than the southern parts.

city-state and territory formation during the Iron Age (e.g. Whitley 1993: 225; Osborne 2009).[242] Also like Cyprus, the insularity of Crete and the continuity of certain practices, particularly those related to ritual activity at Bronze Age peak sanctuaries, have suggested that the crisis of the 12th-11th c. across the Mediterranean was not as severe on Crete as in the Greek mainland. In addition to the endurance of some ritual activity and the early integration of Near Eastern (via Cyprus) objects and styles, scholars cite the apparent longevity of rural occupation after the 12th c. BCE (Foxhall 2014: 425).

One of the first noticeable trends following the end of the Late Minoan period, around 1200 BCE, is the abandonment of coastal centers for inland and upland mountainous settlements, which were usually defensible and nucleated (Prent 2014: 651; Nowicki 2000; Wallace 2010; "refuge sites," Todd and Warren 2012: 54-55). Along with clear indications of population increase (e.g. Watrous 2004; as opposed to mainland Greece, see Haggis 1993: 143), and "thriving village communities" (Todd and Warren 2012: 55), these 12th-11th c. settlements range in size but share a preference for visible yet relatively inaccessible placements, such as Azoria and Karphi on high cliffs. In this horizon, in the Kavousi region around Mirabello Bay for example, site clusters suggest continuity between the 12th and 10th c. BCE, which likely shared communication routes and which were marked by indications of mixed agropastoral economies (Haggis 1993: 149).

By the 10th c., many of these defensible settlements were left in favor of positions closer to major access routes, at the same time that traces of ritual practice begin to appear in the ruins of monumental Late Bronze Age structures at sites like Knossos and Phaistos (Prent 2014: 654; 7th c. BCE in Kavousi region, see Haggis 1993: 160). At Phaistos, for example, excavations

[242] Interest in Cyprus-Crete similarities has a long tradition; for a recent perspective, see multiple papers in Cadogan *et al.* 2012. I explore the similarities between the two islands in extant texts in **chapter 7**.

found a 9th-7th c. BCE deposit of votives at the foot of two large walls, suggesting a clear re-appropriation of the impressive Bronze Age remains after a considerable gap in occupation (Prent 2014: 657), which closely follows the pattern seen in the CA ritual deposits at Maroni *Vournes* (Ulbrich 2012). At other sites, such as Kavousi *Vronda*, the Late Minoan settlement was re-used in the 8th c. BCE as a cemetery (Foxhall 2014: 431). On the other hand, Saro Wallace (2010: 138-139) has argued for the creation of several new shared cult places, often in open-air sanctuaries likely controlled by single communities and attached to nearby settlements, as early as the 12th c. BCE. Instead of tying themselves to earlier sanctuaries, these groups used cult spaces to claim ownership and/or power.

There is certainly more excavated evidence for Early Iron Age settlements and sanctuaries on east Crete, allowing for more sustained investigations of daily practice and social organization (e.g. Moody 2012). Based on excavations at the sites of Chrysakomino and Chalinomouri, for example, Lyn Foxhall (2014: 432) has suggested that house sizes became smaller in the Early Iron Age, indicating more autonomous household units than Late Minoan predecessors. While post-Bronze Age sites were in defensible positions, they were near productive agricultural land, and Foxhall (2014: 432-433) argues that this agrarian society, without clear evidence for a centralized authority, managed the landscape at the level of aggregated households linked through intermarriage (see also Cherry 1988: 29). Evidence from surveys done in the western Mesara plain also show a population increase into the 7th c. with dispersed clusters of settlements (Watrous 2004: 313-314). The surveys in the Kavousi region have shown a shift toward areas of permanent water and arable land at upper elevations in the beginning of the 12th c., and lasting until the 7th c., suggesting a long-term and relatively persistent settlement pattern (Haggis 1993: 157-158). In an almost mirror arrangement to the

Vasilikos and Maroni region, with visible rural occupation only by the 9th/8th c., the Kavousi settlement patterns are abruptly broken at the transition to the 7th c., when the area is depopulated in favor of re-nucleation in coastal centers.

When comparing this Cretan record of the transition to the 1st millennium with the Cypriot one, the chronology of post-collapse settlement surfaces as one of the most dramatic contrasts. While there is limited evidence of *some* continuity at sites like Kition, Hala Sultan Tekke, and Paphos, there is a very clear pattern of dislocation, abandonment of settlements, and impermanence on Cyprus in the 12th-10th c. BCE. Conversely, the 12th-10th c. on Crete see the creation of fortified, inaccessible retreats or refuge sites, high in the mountains, as well as the continuation of some rural sites. This pattern is not necessarily indicative of radically separate settlement organization in each region, given the patchy archaeological records for both islands, and it is almost certainly the case that small-scale rural sites spanning the transition to the 1st millennium BCE on Cyprus exist, but have not been excavated. On the other hand, the almost immediate shift to inaccessible mountain sites on Crete speaks to clear concerns for nucleation and defense. There may be a case for examining the differences in "isolation" between the two islands in relation to contemporary disturbances and maritime trade.

The second obvious deviation relates to largely inaccessible and defensible site location, which is relatively absent on Cyprus (for most periods). What makes the case of Crete interesting is not just the presence of early walled settlements, but the high-altitude positioning of these sites with strategic, wide panoramas, suggesting new definitions of community identification as opposed to the lowland sites in the previous period (Wallace 2010: 140), and these intervisible sites find little parallel on Cyprus, yet.[243] Two important excavated sites on

[243] There is an obvious bias in the archaeological record to coastal, lowland surveys and excavations, leaving mountains relatively unexplored (Todd and Warren 2012: 48).

Cyprus stand as exceptions, with large ashlar walls, evidence of very short-term occupation as well of storage, grinding and olive-pressing (Keswani 1996: 234), and a commanding positions on ridges: Pyla *Kokkinokremos* in the eastern part of the island (Karageorghis and Demas 1984), and Maa *Palaikastro* near the western coast (Karageorghis and Demas 1988).[244] The brief occupations at these two sites, established roughly at the end of the 13th c. BCE and beginning of the 12th, respectively, and their location on defensible plateaus, has embroiled them within the debates about Sea Peoples attacking the island at the end of the Late Bronze Age, and the need for fortified and nucleated settlements (e.g. Muhly 1984; Georgiou 2012), or their role in protecting resources moving to the coast (Iacovou 2014a: 665).

Despite the lack of a pattern of fortified settlements, as seen in the Vasilikos and Maroni region, there was a significant movement to production zones on higher slopes in the 9th/8th c. BCE, such as Asgata *Neron tou Phani* mentioned above, which does correspond to the Early Iron Age shift to agricultural resources on Crete (Wallace 2010). Jennifer Moody (2012: 242) has recently suggested, based on a study of available Cretan faunal analyses, that the move to these productive areas coincided with an increased importance of sheet/goat subsistence as well as the killing of older cows, indicating the probable importance of traction for cereal cultivation. Faunal data for this period on Cyprus will be invaluable for comparing trends in animal husbandry, subsistence, and possible secondary-products use.

The other apparent distinction in broadly diachronic settlement trends is that Cretan sites do not seem to have been intentionally located for practices related to mineral resource-

[244] Large walls appear during this period of instability at Enkomi, shortly before its destruction, as well as a heavily walled 'fort' at Sinda, in the northeast of the island (Iacovou 2014a: 665-666). A Department of Antiquities mission to the Lara promontory on the western coast, by A.H.S. Megaw, made trial trenches around a large boulder feature presumed to be a fortification wall, with similarities to Maa *Palaikastro* only kilometers away, although the excavations were unfinished (Fejfer 1995: 55).

extraction, as the many sites near copper deposits on Cyprus indicate (Todd and Warren 2012: 55). While the geology and hydrology of these islands are certainly different, the mining and production of copper clearly influenced the establishment of some sites on Cyprus, like Asgata *Neron tou Phani*. Yet as we saw with this cluster of settlements, "mining" or "industrial" sites were not uniformly functional toward copper-mining, but often positioned in order to take advantage of productive land, water resources, and possible configurations of tomb and site. The presence of specialized "mining" sites is also not a constant (Driessen and Frankel 2012: 69); after the LC period, there is a considerable gap in evidence of sites near mines until the 9th/8th c. BCE, suggesting an alternate pattern of permanent settlements conditioned as much by the desire to manufacture copper as by reasons related to population increase and social and political change. Jennifer Moody (2012: 263, fig. 14.3) has convincingly shown that the most intensively used areas of Crete were inland slopes, 50-400 m asl. and 400-800 m asl, which corresponds well to the patterns also seen on Cyprus.

Another comparison can be made in terms of established spaces for ritual and mortuary practice. On both Cyprus and in east Crete, there are simultaneous patterns of re-using earlier, Late Bronze Age built structures as well as making new places in the non-urban landscape that potentially augmented the cohesion of nearby communities (D'Agata and Hermary 2012). Yet there is also a distinction between the persistent attraction of caves, peaks and springs for ritual practice on Crete (Todd and Warren 2012: 56), and a more diversified 1st millennium BCE ritual landscape on Cyprus. Similarly with burials, both east Crete and Cyprus show evidence for redefinition of social order as burials become smaller, funerary practices become more visible and costly, and cemeteries become places for the enactment of heroic identification (see Hatzaki and Keswani 2012: 323).

Southern Levant

As also seen on Cyprus, there is scholarly consensus that significant instability and fluidity marked the southern Levant during the late 13th-11th c. BCE (Iron I) after the collapse of larger interregional polities, like New Kingdom Egypt and Ugarit (Killebrew 2014). By the 11th c. BCE the well-known fragmented polities of Phoenicia, Philistia, Israel, Aram, Moab, and Edom (among others) begin to emerge, showing trends in both continuity from Late Bronze Age practices as well as local and regional change in settlement structure and economy (new 'statelets', Joffe 2002). In addition, the history of these incipient Levantine societies in the early 1st millennium BCE is tightly bound up in the study of biblical texts, creating certain long-standing (and controversial) debates about chronology, culture, and political identity tied to later classical and Hellenistic histories (Killebrew 2014; Bienkowski 2014; Bunimovitz and Lederman 2014). Yet despite the very close relationship between these regional polities and Cyprus, as seen in the wide distribution of Cypriot imports at places like Tyre or Ashkelon, and the similarities in semiarid environment, current settlement evidence drawn from surveys indicates that these two regions developed distinct early 1st millennium BCE landscapes.

Like the evidence for post-Bronze Age dynamics on Crete, settlement shifts appear as early as the late 13th c. BCE (Iron I) in the coastal plains and highland plateaus in the southern Levant, where a long tradition of survey and excavation has provided a coarse sketch of strong regional patterns in settlement organization. Major coastal centers, for example, such as Ashdod, Ashkelon, Ekron, and Gath (biblical Philistia) possess numerous quantities of Aegean-style and Cypriot material culture, suggesting a mostly continuous occupation at important harbor towns integrated with the changing Mediterranean trade networks (Killebrew 2014: 598). Outside of these large settlements, on the other hand, are a wide variety of contemporary rural sites that

align closely with the drainage systems of the Jordan River valley and its associated highlands. In the region of the ancient kingdom of Moab, to the west of the Dead Sea, for example, there are fortified sites in the highlands east of the Jordan valley as well as smaller, unwalled villages to the west (Steiner 2014: 772). Despite the above-mentioned problems in identifying settlements on Cyprus for the LCIIIA-CG transition, the evidence seems to show both a similar continuity at major coastal centers on the island but a distinct lack of evidence for non-coastal, inland or upland settlements connected to agriculture.

Recent studies at one of these short-lived, Iron I fortified sites in southern Jordan's Karak plateau are revealing a complex system of rain-fed agro-pastoralism during the 11th c. BCE (late Iron I), and the extensification of marginal environmental zones (Porter *et al.* 2014; Lev-Tov *et al.* 2011). At Khirbat al-Mudayna al-'Aliya, archaeobotanical and faunal analyses are convincingly pointing to a low-intensive, non-specialized agricultural economy centered on the edge of the Karak plateau overlooking a rich riparian zone, where nucleated communities took advantage of local resources such as crabs and fish (Porter *et al.* 2014: 141). Within the fortification wall of the site there is a large courtyard and ca. 40 buildings and cisterns as well as grain storage facilities, a built environment which follows similar patterns seen along the same drainage system. It seems that during the Iron I period, most if not all of the population was living inside these walled settlements, as there is no evidence for intervening farmsteads (Porter *et al*. 2014: 138).

Yet by the later Iron Age (10th-6th c. BCE), after sites like Mudayna al-'Aliya were abandoned, dispersed farmsteads and smaller villages become much more numerous in the Transjordan area. Surveys have found several villages dating to the Iron II period as well as towers and small enclosures. The towers were presumably used for food cultivation, preparation,

and storage (Routledge 2004: 95), as they tend to appear in close proximity to agricultural installations such as wine presses and terraces. These exciting new investigations are showing a complicated dynamic between marginal environments and agricultural sustainability, as well as clear shifts between demarcated, nucleated settlements and more dispersed farmsteads with collective cultivation practices around the 8th c. BCE.

The Faynan area of southern Jordan, the territory of the biblical kingdom of Edom to the southwest of the Dead Sea, presents another interesting corollary to early 1st millennium BCE Cyprus, because it is also marked by copper deposits which survey data suggest communities began re-working by the 11th c. BCE, after a hiatus during the Late Bronze Age (Bienkowski 2014). Excavations at the site of Khirbat en-Nahas, a lowland area at the margin of the Araba valley, show copper metallurgy occurring on a massive scale in the 10th-9th c. BCE (Levy *et al.* 2004).[245] In a roughly 10 ha area, the excavators estimate ca. 50-60 thousand tons of copper slag. As it stands, these dates suggest a slightly earlier re-investment in copper production after the early Bronze Age than on Cyprus, where the earliest 1st millennium BCE dates are more in the 9th-8th c. BCE range in the northern Troodos (Kassianidou 2013). It remains to be seen if the evidence for copper production in the CG period on Cyprus can equate to the industrial scale at Khirbat en-Nahas, as well, given the indications of smaller-scale re-investment until the Hellenistic and Roman periods at places like Skouriotissa. Yet outside of the copper mining area in the Faynan district, Piotr Bienkowski (2014) has recently noted how settlements on the eastern Jordan valley plateaus that become visible in the record in the 8th c. BCE followed no consistent pattern in relation to size or hierarchy. This sort of variation – embedded within a regional polity

[245] Bienkowski (2014) notes the controversy over the dating of these Transjordan sites, based on mostly survey evidence and problematic ceramic chronologies linked to distant coastal seriations (Herr 2014: 649), as well as the radiocarbon dates from copper slag charcoal that push the Iron II sites earlier (Levy *et al.* 2004).

without clear-cut evidence of central control – aligns well with the Vasilikos and Maroni data for Cyprus in a similar (but slightly later) period.

Conclusions

I began this chapter by considering two brief examples from modern Cyprus of landscape investment – a roadway shrine and a representational flag – which I argue demonstrate how communities construct their surroundings through practices operating along diverse spatial and temporal scales. The subsequent discussion, drawn from survey evidence from within and beyond the island, highlighted cases of diverse and unruly landscape experience and investment from the emerging 1st millennium BCE world. There are examples of the continuous re-use and re-investment of landscape features, such as mines, streams, and hillslopes, which progressively structured the local landscape over generations (Bevan and Conolly 2013: 158). The terrace walls in the streams near Kalavasos *Khorapheri/Vounaritashi* constitute one example of this sort of accumulated experience, in which 9th-8th c. BCE communities re-invested in the persistent landscapes of technology, such as quarrying and run-off cultivation, that had attracted earlier populations during the Bronze Age. There are also evident cases of disinvestment and creation, when groups seem to have intentionally dissociated their practices from earlier periods to establish ones adherent to a new social order. The patterns of prominent cemeteries distanced from settlements, or of rock-cut ritual spaces, attests to these place-making enterprises and to their regional variation, suggesting not a uniform "city-kingdom" model, but contingent responses to place and surroundings conditioned by emerging social and political relationships.

The complexities of the landscape investment behind the transformations of the 9th-8th c. BCE are therefore tied to both local, regional experiences as well as to broader, interregional

shifts in the period's environments and networks. While there is mounting paleoclimatic evidence for a shift to wetter conditions in the east Mediterranean, as explored in chapter 4, survey evidence from both east Crete and the southern Levant suggest variation in the construction of 11th-7th c. BCE landscapes. These variations reinforce the relational aspects of political landscapes: rather than arguing for the quasi-global effects of a climatic change in the formation of Iron Age societies, these examples stress that environmental contexts are only affective if they inhere to the salient structures and mechanics of a given social and political order. In other words, a tradition of exploiting copper in Cypriot modes of production led groups in the 9th c. BCE, when water, timber resources, and arable lands were more accessible, to position sites near the seam between pillow lavas and calcareous soils, which is not the case for Crete. Equally striking, in the disparate entanglements of communities with the past and with changing environments, is the clear role that the rural landscape plays in the formation of settlements and of social practices.

In asking these questions of landscape experience, we are poised to consider, in the next chapter, an additional dimension of new 1st millennium BCE landscapes: the imaginations of Cyprus in the ancient Mediterranean.

Chapter 7

Imagining Cyprus in the ancient Mediterranean

Many people in the 21st c. may know of Cyprus as "Aphrodite's island," the place where the ancient Greek goddess of love, sexuality, and fertility (amongst her multiple guises) emerged from the sea, according to Greek mythology (Smith and Pickup 2010; Pirenne-Delforge 2010). The Cypriot home of Aphrodite has deep roots in antiquity.[246] The tradition extends back to Homeric and Hesiodic verse, which first narrated her sea-birth and her subsequent journey to the shores of Paphos on Cyprus, where one of her most important sanctuaries existed (Hes. *Theog*. 102-103; *Il*. 5.330). Greek dramatists, sophists, and writers of the 5th-4th c. BCE usually referenced Cyprus when describing Aphrodite (e.g. Eur. *Bacc*. 402-405, Hdt. 1.105.2-3), often naming her *Kypria*, and this connection carried through into the Roman period (e.g. Pausanias 8.5.2; Ovid *Met*. 10.220ff). Like Zeus' mythic origins in a mountain cave of Crete, or Demeter's attachment to the city of Eleusis, the island home of Aphrodite and her cult belonged to a rich symbolic geography in the ancient world, one which situated Cyprus far out in the eastern stretches of the Mediterranean. Pinning the well-known goddess to her cult site in Paphos through mythic narrative drew this distant island into focus, on the one hand, as well as staked claim to a structure of Greek (and other) cultural ideas for those living on the island. This chapter centers on ancient depictions of Cyprus, examining the ways in which societies of the Mediterranean imagined the landscapes and places of the island in the making of new Iron Age identities.[247]

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[246] For the connections between Aphrodite and Ishtar/Astarte, an important Near Eastern goddess known in Syria/Assyria/Babylon, see West 1997: 56, 292; Sugimoto 2014; Zeman 2008.

[247] See Harris 2005a: 15-16.

Aphrodite has lasted as one of the conspicuous markers of Cyprus into the modern era, and the goddess' recognizable attributes have continued to locate the island within contemporary geopolitics (see e.g. Papadakis 2006; Given 2002a). Aphrodite's entanglement with Cyprus' heritage has been invoked, for example, to spotlight the island's current economic woes against its own deep history. As a result of the recent banking crisis that shattered Cyprus in March 2013 (when it nearly lost its position in the European Union and forced its citizens to bail-in its hemorrhaging banks), the *Economist* dramatized Cyprus as "Aphrodite's troubled island" (December 10 2009), "Aphrodite's indebted island" (January 26 2013), and "Aphrodite's injured island" (March 8 2014). The goddess' geographic identification with Cyprus has become so prevalent as to lend her name to the prized natural gas field discovered in the Mediterranean stretch between the island and Israel, to which the country now turns its hopes of economic recovery.[248] As a result of her enduring cultural visibility, Aphrodite is a central figure whom local institutions use to attract outside gaze upon the island. Take for example the Cyprus Tourism Organization's efforts to map an "Aphrodite Cultural Route," encouraging visitors to travel to her cultic seats at Paphos, past "Aphrodite's Rock" (Petra tou Romiou) off the coast, toward Amathus, and then into the mountains (Fig. 1).[249]

[248] Although as of Dec. 2014, plans to build a liquid natural gas refining plant on Cyprus have stalled, as officials have realized the Aphrodite gas field is not as large as they had hoped.

[249] Interestingly, the modern place-name *Petra tou Romiou* ("rock of the Greek"; *Romiou* "Roman" here referring to Greek people living under the empire in the mid-1st millennium CE) does not refer to Aphrodite but rather to a different historical event, when a rebellious Byzantine hero protected Cyprus' shores from invading infidels (the Saracens) by hurling large rocks from the mountains. Nevertheless, tourists are invited to swim around this sea stack, in rough waters ca. 60 m from the shoreline, for the promise of fertility; the attraction is a short distance from the popular resort "Aphrodite's Hills".

Fig. 7.1. Aphrodite's Cultural Route, created by the Cyprus Tourism Organization.

These modern appropriations of an ancient religious symbol to embody the island's political and economic identity echo, in many ways, the representations of Cyprus in antiquity, which overwhelmingly derive from others' attempts to make the island more familiar (as well as unfamiliar). These descriptions from antiquity are inherently etic – colored by the perspectives of others throughout time, accumulating secondary and tertiary levels of meaning dictated by the cultural preoccupations and processes of identification of non-Cypriots. What the 1st-millennium BCE Cypriots thought of the sea that surrounded them, for example, we do not know. There is neither an insider's look nor an ancient "thick description" of Cyprus (Geertz 1973), but instead an assortment of reflections, passing references, or tantalizing hints at how the world viewed Cyprus, and in turn viewed itself. These include, as mentioned above, Neo-Assyrian proclamations of power, Greek and Roman portrayals of the east, and Phoenician annals of trade

encounters with Kittim (from Kition), out in the sea (Cannavò 2010).[250] In this corpus of texts, inscriptions, and later receptions there is significant interest in the island as a distinctive geographic identity. Indeed, Cyprus' insularity and semiarid terrain were important lenses through which groups viewed this corner of the eastern Mediterranean, such as the persistent placement of Cyprus on the blurry edge of the world, as we saw in Sargon II's stele in **chapter 1**.

My investigation of ancient imaginations of Cypriot landscapes aligns with this dissertation's broader interest in the ways societies produce and perceive space. The philosopher Henri Lefebvre (1991) theorized a tripartite understanding of social space, which brought together spatial practice (experiences of the physical environment), conceived space (mental space, and the source of power over space), and representational spaces ("lived space" as it is perceived and conceived in the everyday), and this last category is the focus of this chapter (1991: 33). Lefebvre's lived space bridges ideal spatial conceptions and material experiences, and consists of human sense-making, imagination, and feeling (see e.g. Feld and Basso 1996). Repeated encounters with Cypriot harbors in the late 2nd millennium-early 1st millennium BCE, for example, led Greek merchants and migrant settlers to imagine the island as a place of commerce and as a safe shore in stormy seas. Although Lefebvre's lived space cannot be separated from its tripartite relationship with practice or conception, I want to use it as a lens to explore what Smith (2003: 74) has called spatial imagination, which "emerges most forcefully in the analytic domain of representations." In Dell Upton's (1993) terms, spatial imagination "envisions relationships among people as a synthesis of physical and nonphysical qualities…the spatial imagination addresses the 'ought-tos' rather than the 'can-bes' of social and spatial life." The representations of space considered in this chapter articulate depictions of Cyprus from

[250] As Cannavó explores, Kittim also figures within the Old Testament as a metonym for the island.

shifting perspectives (Lefebvre 1991: 40), contingent to the time and place in which they were constructed. Recent work has explored the ways in which imagined space in ancient literature was under constant negotiation (Skempis and Ziogas 2014b), and how narrative media such as epic poetry, history, and geography created worlds with their own spatial identifications. Along these lines, I examine Cyprus with the methodology suggested by Katerina Kopaka (2008: 183; see also Thomsen 1995: 31-32) for tracing insular *topoi* of the ancient world through the literature (itself a complicated lens), place names, and epithets that people used and re-used while living on and interacting with the island through trade, ritual, or diplomacy.

This chapter examines four spheres of imagined landscapes. The first concerns the position of Cyprus in the geography of the early 1st millennium BCE, somewhere at the "epigraphic horizon" of the eastern Mediterranean (Morris 1992: 102), but not completely exotic, like the realms of the Lotus-Eaters or Cyclops, who inhabit areas beyond the boundary of civility/wilderness (see Haubold 2014: 22). This world-view arguably derives from the entanglement of different groups, such as Levantine merchants, who informed those in the Aegean and broader Mediterranean of Cyprus' otherness during the transformations of trade and settlement in the early 1st millennium BCE. Greek epic and lyric poetry provide the principal evidence for situating Cyprus in the early relational geographies of the Mediterranean. The second section inspects the portrayal of Cyprus as a locus of commerce and industry, particularly metallurgy, and the ways in which other states identified it as a hinterland of resources and merchants. Connotations of Cyprus as a "taskscape" (Ingold 1993) appear most prominently in the mythic figure of Kinyras in early Greek poetry and in later Greco-Roman evaluations of the island's "blessed" productivity (Christodoulou 1959: 41). A third section analyzes the later Greek and Roman imaginations of Cypriot politics and authority, and especially the island's

royal spatiality. A selection of sources, such as Herodotus and Isocrates, hint at an ancient focus on the city-building pursuits of Cypriot kings. The last section looks inward to a selection of objects found on Cyprus that suggest how local populations might have imagined their own political landscapes. I explore architectural models, engravings of maritime seascapes, and inscriptions as participants within emic constructions of polity and landscape on Cyprus. It is in this last section that we come closer to the spatial imaginations of the polity from the perspective of those actually living it.

Due to the nature of the evidence, any attempt to explore the imaginations of Cyprus from textual sources contemporary to the early 1st millennium BCE must look to later writing, which introduces considerable disconnect between our period of focus and the dating of most of the material. Throughout this discussion, I place each source within its own cultural and temporal context so as not to conflate the motives or aims of different periods, nor to assume that each text can be read in the same way. Likewise, the texts under scrutiny do not serve as entirely factual indices of ancient reality, but as windows into how authors and possibly broader communities imagined the island and its unique landscapes. With this caveat, the goal of this chapter is to trace changing attitudes to the placing and places of Cyprus in ancient thought, in order to understand how the dramatic developments of the 8th-7th c. BCE embedded Cypriot polities within the wider world. This synthesis also reveals how these ancient constructions of Cyprus produced a social and political space that positioned the island as an "other," as well as an assemblage of representations which have significantly directed current scholarly focus to the island's Iron Age cities and kings.

"Storm-surged Cyprus" – distance and isolation

A recurring *topos* in the earliest extant Greek poetry places Cyprus far off from the Greek world, in a section of the Mediterranean to and through which only select travelers venture. In the *Homeric Hymn to Dionysos* (7.28-29), for example, the hubristic pirates who bound the god aboard their ship assume that their captive was traveling far out to sea, toward "Egypt or Cyprus or to the Hyperboreans, or further still" (ἢ Αἴγυπτον ἀφίξεται ἢ ὅ γε Κύπρον/ ἢ ἐς Ὑπερβορέους ἢ ἑκαστέρω). As Donald Lateiner (2014: 89-90) has recently shown, the Mediterranean was a dangerous and infinite expanse in early Greek epic, and the unruly peripheral areas far from shore, the *eschatiai* (e.g. *Od*. 18.358, *Il*. 11.86-8, 12.278-83, 23.114-20), were evocative of unruly, exotic spaces in the Greek imagination. The farther away, the stronger the cultural differences (Haubold 2014: 22). Unlike the central ethnographic distinctions between humans and gods at play in the *Iliad*, it is the "intrinsic geographical edge" of the *Odyssey* that allowed the Homeric poets to imagine the landscapes that would have hosted the weird and mythic beings testing Odysseus' wit and courage (Skempis and Ziogas 2014b: 5; Haubold 2014: 22). One of the more famous of these far-off boundary areas was the island of Scheria, where Odysseus washes up in Book 6 of the *Odyssey* and relays his adventures to the Phaeacian king, Alcinoos.[251]

Scheria and Cyprus, two places in the middle of the great sea, share a similar vocabulary in early Greek poetry that positions them in a quasi-mythic maritime realm. In the *Odyssey*, Nausicaa, the daughter of king Alcinous, describes her home of Scheria as "storm-surged" and isolated (6.204-205; see also 19.277)[252]:

> οἰκέομεν δ᾽ ἀπάνευθε **πολυκλύστῳ** ἐνὶ πόντῳ,
> **ἔσχατοι**, οὐδέ τις ἄμμι βροτῶν ἐπιμίσγεται ἄλλος.

[251] Although there is debate about whether Scheria is an island, as the poet is never explicit; see the commentary of Heubeck *et al.* (1988: 306).
[252] All translations are my own unless otherwise noted.

> We live far off in the storm-surged sea,
> The furthest out, and no other mortal men have dealings with us.

Nausicaa highlights this spatial separation to encourage her maids not to be afraid of Odysseus, a strange (and unclothed) man who has just washed ashore. In the *Theogony*, Hesiod describes Aphrodite's connection to Cyprus with similar epithets (199; see also *Hom. Hymn* 6.1-21):

> Κυπρογενέα δ', ὅτι γέντο **πολυκλύστῳ** ἐνὶ Κύπρῳ
>
> (They call Aphrodite) Cyprogenes, because she was born on storm-surged Cyprus.

Polyklysto, "storm-surged," was reserved in ancient Greek thought for the rougher terrain of the sea: the Homeric poet also uses it to characterize the choppy waters around the island of Pharos near Egypt (*Od*. 4.354).[253] Poets and writers gave other islands in the Aegean more neutral insular epithets, such as sea-girt Crete (περιρρυτος, *Od*. 19.173) or wave-bounded Lesbos (περικυμων, Archest. *Fr*. 59.4;[254] Kopaka 2008: 183). Cyprus therefore belongs to the stormiest fringes that separated the 9th-7th c. BCE Greeks from their neighbors: in the sixth *Homeric Hymn* to Aphrodite, the island is in the "loud-roaring sea" (πολυφλοίσβοιο θαλάσσης, 6.4). Similarly, Scheria is nearly inaccessible, a place where the inhabitants live out of reach from other populations, yet also home to a prosperous king with an elaborate palace (*Od*. 7.78-132). The Homeric poet indeed frames Scheria via a tension between wilderness and society, in order to enhance the confusion Odysseus feels as he gains access to civilization after his arduous and fantastic journey: the hero first finds shelter, after crawling to shore, between two olive trees growing from the same root, "one wild, the other domestic" (ὁ μὲν φυλίης, ὁ δ' ἐλαίης, *Od*. 5.477). As both a known stopping point on trading routes and an imagined other, Cyprus also

[253] Other examples of polyklysto: Plutarch *de Exilio* 599a-607f.
[254] Archestratus wrote gnomic poetry about dining and luxury in the mid-4th c. BCE.

like Scheria seems not to have fit within familiar categories of Greek geography in the period of Homeric epic, as refracted through the lens of closer neighbors such as the Phoenicians (Cannavò 2010): the island was not a completely mythic place, dominated wholly by monstrous or uncivilized beings, against whom the Greeks constructed important values like hospitality, wisdom, and civility (see e.g. *Od*. 9.108-115).

The imaginations of a distant island operate on another level in early literature that views Cyprus as a stopping point for the itinerant travels of both mythic and historical figures wandering around the Mediterranean. The impulse to connect Cyprus with movement probably related to Greek experiences with its important harbors, especially in the increasingly connected 8th-7th c. BCE world. By extension, poets sang of Aphrodite's own immediate cross-Mediterranean travels after her emergence at Paphos, as recounted in the *Theogony* (188-206; Pirenne-Delforge 2010). As an island, and as a stop on an ancient "Grand Tour," Cyprus offered security for transgressive or lost figures. The hero Menelaus, for example, recounts to Telemachus in the *Odyssey* how he wandered through Cyprus, Phoenicia and Egypt before making his way back to his home of Sparta (4.83-85). Similarly in Neo-Assyrian lore, the Phoenician king Luli of Tyre and Sidon, having angered the king Sennacherib, purportedly escaped to the Cypriot city of Kition ca. 703-702 BCE. According to Sennacherib's inscriptions (ca. 694 BCE) Cyprus was a remote place, for we read that "the fear of my awesome radiance overwhelmed [Luli] and he fled from Tyre to the land of Cyprus in the midst of the sea and perished."[255] By the later Roman period (ca. 3rd c. CE), when Justin (18.5.1-5) describes the ill-

[255] D.D. Luckenbill (1924) *The Annals of Sennacherib* New York: AMS Press, pp. 68-69. Bull 4 Ins. 18-20. See also Cannavò 2010b: 174.

fated journey of the tragic Punic heroine Dido to Carthage, she is said to have stopped at Cyprus en route from Tyre, picking up a shipment of brides (Morris 1992: 128).[256]

By the 5th c. BCE, Cyprus was not just distinctly insular, lying out in the sea (Hdt. 5.49), but also a *meganisos*, "large island." In a famous scene in his *Histories* of the Greek and Persian wars, Herodotus describes how the tyrant Aristagoras of Miletus approached the Persian authority of Sardis, Artaphernes, on the eve of the Ionian revolt in 499 BCE, in order to persuade Artaphernes to attack the island of Naxos in the Cyclades.[257] Aristagoras argues that the Persians would win money as well as control of several prosperous islands should they be successful (5.31.3): "from there," Aristagoras adds, "you would be in a good position to attack Euboea, a large and prosperous island as big as Cyprus, which (meaning Euboea) is a total pushover to take."[258] As Christopher Pelling (2007: 180) has argued, Herodotus possesses a "creative use of geography and a relaxed approach to distance" in this scene, having Aristagoras deliberately fudge a spatial representation of the Aegean sea (Euboea, while not much smaller than Cyprus, is adjacent to central Greece and would have been familiar, having played an important role in earlier Greek history)[259] so as to convince Artaphernes more readily of a quick success, should he help the Milesians attack Naxos. Cyprus acts here as a familiar geographical entity to the Persians, whose knowledge of the Aegean was presumably not strong but who would have recognized the name Cyprus as the far edge of a satrapy that included the southern coast of Turkey (Hdt. 3.91.1). The description of Cyprus may also have clued the Greek audience of the

[256] Cf. Servius schol. on *Aeneid* 1.443. See C. Baurain (1988) "Le rôle de Chypre dans la fondation de Carthage" *Studia Phoenicia* 6: 15-27.
[257] Considered the first major conflict of the Greco-Persian wars of the early 5th c. BCE, the Ionian revolt involved attacks on Sardis by several *poleis* in Asia Minor, who had been fed up with Persian rule, followed by counterattacks from the Persians along the coast of Asia Minor. By 492 the Persians led their first invasion of the Greek mainland, under Artaphernes, which resulted in the Battle of Marathon in 490 BCE.
[258] Trans. Pelling (2007).
[259] In 5.31.1, Aristagoras had also described Naxos as near Ionia, whereas it is in the center of the Aegean Sea. By Strabo's time, Cyprus is known as the third largest of the Mediterranean islands (14.2.10).

Histories into Aristagoras' uncanny rhetoric (Pelling 2007: 180), foreshadowing a break between the Milesian's promises to the Persians and the important events of the Ionian revolt to follow.

Herodotus almost immediately confirms this unease in Aristagoras' intentional misrepresentation of geography as the tyrant approaches the Spartan king Cleomenes to persuade him to attack the Persians out in the Asian arena (5.49-51). In a fantastic use of material witness, Aristagoras brings a large bronze map of the entire world to Cleomenes with which to illustrate the expanses and riches of the Near East, where the Spartans could conquer the Persians and claim their fabulous territories.[260] As Aristagoras describes each foreign land on the map and its treasures, one seemingly more prosperous than the next, he presses Cleomenes to go eastward all the way to Susa, where the great King's wealth is stored. In his account, Aristagoras lists Cyprus out in the sea, past the Cilician shores (5.49.6). All of his illustrative persuasion focuses on relative spatial relationships, however, and not those accounting for distance (Branscombe 2010: 30; Hdt. 5.50.1-2):

> εἴρετο ὁ Κλεομένης τὸν Ἀρισταγόρην ὁκοσέων ἡμερέων ἀπὸ θαλάσσης τῆς Ἰώνων ὁδὸς εἴη παρὰ βασιλέα. ὁ δὲ Ἀρισταγόρης τἆλλα ἐὼν σοφὸς καὶ διαβάλλων ἐκεῖνον εὖ ἐν τούτῳ ἐσφάλη: χρὲον γάρ μιν μὴ λέγειν τὸ ἐόν, βουλόμενόν γε Σπαρτιήτας ἐξαγαγεῖν ἐς τὴν Ἀσίην, λέγει δ᾽ ὧν τριῶν μηνῶν φὰς εἶναι τὴν ἄνοδον.
>
> Kleomenes asked Aristagoras how many days the journey would take to go from the sea of the Ionians to the King. Aristagoras, though he had cleverly misled Kleomenes in everything else, stumbled at this point. For he ought not to have told him the real distance if he wanted to bring the Spartans into Asia, but instead, he told them it was a journey of three months inland.

In the Herodotean perspective, the Spartans would never travel far from their territory, where much of their survival rested on direct control over the subservient helot population, who would have rebelled were their overlords to leave for three months of war travel. It is important to note, however, how Herodotus uses the bronze map of Aristagoras to both imagine the Mediterranean

[260] On evidence for contemporary maps from the 6th-5th c. BCE see Branscombe 2010: 6-7. See

and Near East from the perspective of a Spartan, refracted through the motives of a Milesian tyrant, but also to mirror his own authorial capacity as a geographer and ethnographer. As David Branscombe (2010) has recently argued, Herodotus highlights this cartographic deception to set up Aristagoras as an inquirer of the world's weird and varied peoples and places, but one who tricks rather than tells the truth, reinforcing Herodotus' superior methodology and credibility (7.139.1). Even more so, the scene is especially provocative for its juxtaposition of miniature space, in the form of the map, and the imagined geography at work in the politics of waging wars in 5th c. BCE Greece.

It is curious that Cyprus, despite its inclusion in Aristagoras' map, is granted little other description in this geography of wealth and resources, given its renown for precious metals, as discussed in the next section. It seems possible, following Branscombe's (2010) position, that Herodotus intentionally left things out of Aristagoras' geography so that he could show off his own knowledge in other sections in the *Histories*. But a thick description of Cyprus never arrives in the *Histories*, perhaps on account of its continued identity as a distant place, but not exotic enough to warrant further attention. In other words, Cyprus does not belong to the fringes of the Greek world in Herodotean geography, which deserve special interest, like the Scythians or Babylonians (Karttunen 2002). In Herodotus' description of the Persian forces, for example, the Cypriot men fighting for Xerxes are described as wearing eastern headdresses (μίτρῃσι) but appear "in all else like the Greeks" (τὰ δὲ ἄλλα κατά περ Ἕλληνες, 7.90.1). In later 5th c. BCE works, Cyprus remains an eastern fringe yet is lumped together with other easterners, without its own distinctive style, as when King Pelasgus of Argos says that the Danaid women from Egypt look like "Libyans, Egyptians, Cypriots, Indians, and Amazons" (Aes. *Supp*. 277-292). As Anastasia Serghidou (2007, 1995) has shown, there is clear ambivalence in 5th c. BCE

Mediterranean spatial imaginations of Cyprus: somewhere between east and west, yet not strange enough to require its own ethnography (Hartog 1988).

In the Roman period, the exoticism of Cyprus as a distant island of the Near East with coastal cities takes a different form that blends Greek and Phoenician myths with the island's connections to Venus/Aphrodite (e.g. Virgil *Aen*. 415-17). According to earlier Greek myth, the town of Amathus on Cyprus was inhabited by foul women known as the Propoetides, who were the first to sell their own bodies for sex. Herodotus had connected Cyprus to unsavory sexual habits before, as an eastern island that he employed to supplement his description of the oriental Babylonians and their depraved practice of ritual prostitution (1.199.5). In his powerful epic poems the *Metamorphoses*, concerned with acts of transmutation, the Roman poet Ovid tells the story of the Propoetides and the anger of Venus, who bristled at the women's refusal to recognize the divinity of her cult at Amathus. As he begins the story, Ovid personifies the city of Amathus as equally ashamed of its women (10.220-223):

> At si forte roges fecundam Amathunta metallis,
> an genuisse velit Propoetidas, abnuat aeque
> atque illos, gemino quondam quibus aspera cornu
> frons erat: unde etiam nomen traxere Cerastae.
>
> But if by chance you should ask Amathus, rich in copper wealth,
> Whether she would wish to have given birth to the Propoetides, she would deny it, and
> Also those men, who at one time had a forehead rugged with double horn,
> From whence they also derived the name Cerastae.[261]

Amathus itself, otherwise prosperous and fertile (*fecundam*), is instead disgusted by its offspring. Moreover, Ovid frames Aphrodite's outrage at the Propoetides and their sacrilege as a question

[261] One of the ancient names for the island was "horned" (cerastis), possibly because of several promontories around the coast (Pliny *HN* 5.31).

of ritual landscape (10.230-231): "how have my beloved places, my cities, sinned?" In Ovid's story, Venus first forces the women into prostitution, and after losing their shame, the Propoetides are transformed into harsh flinty stones that remain, becoming fixtures of the sanctuary itself.[262]

It is this group of decadent, prostituting Cypriot women who so greatly offend the mythic figure Pygmalion in the next part of Book 10 of Ovid's *Metamorphoses*. [263] After declaring himself celibate due to his disgust over the local women, Pygmalion decides to create a real virgin (*virginis verae*, 10.250) out of ivory, with whom he eventually falls in love (*Met*. 10.243-297). At the annual festival of Venus on Cyprus, the goddess transforms the lifeless statue into a living woman, thus mirroring the entrapment of the Propoetides that began the Cypriot story. According to the work of Shawn O'Bryhim (1999), it is possible that Ovid was influenced by stories of Phoenician or Levantine religion circulating in the Roman period, crafting an "Amathusian" mythic cycle that included the transformations of the Propoetides and of Pygmalion's statue. In staging these weird stories of cult and sex on Cyprus, Ovid reinforced a Roman-era view that tied the island to oriental Phoenician culture. Ovid's characterization of Amathus as "rich in metals" picks up, in addition, an alternate source of ancient spatial imaginations of the island: its wealth in copper, and its role in commerce.

[262] See Papantoniou (2012: 274) for a discussion of the probability that this later Roman variant of the myth sought to explain the presence of stelae or baetyls, free-standing ritual stones, at the sanctuary of Amathus.

[263] The name Pygmalion derived from the Phoenician Pumayyon (Salzman-Mitchell 2008: 293). Papantoniou (2012: 275) refers to Pygmalion as a *basileus*, following Greek mythology which holds Pygmalion as an ancient king of Cyprus (Apollodorus *Lib*. 3.14.3). The offspring of the union between Pygmalion and his statue-bride is named Paphos in Ovid's retelling, and her child is Kinyras, a famous mythic figure and purportedly the founder of the Paphian dynasty. Clement of Alexandria (*Protrepticus* 4.57.2), writing in the 2nd-3rd c. CE, writes that Pygmalion actually fell in love with an ivory statue of Aphrodite herself. On the mimesis in this famous Ovidian scene see Elsner 1991.

Provincial wealth: copper and trees

As conceived by the geographer Strabo, Cyprus had quite productive lands as compared to other Mediterranean islands (14.6.5):

> κατ᾽ ἀρετὴν δ᾽ οὐδεμιᾶς τῶν νήσων λείπεται: καὶ γὰρ εὔοινός ἐστι καὶ εὐέλαιος σίτῳ τε αὐτάρκει χρῆται. μέταλλά τε χαλκοῦ ἐστιν ἄφθονα τὰ ἐν Ταμασσῷ, ἐν οἷς τὸ χαλκανθὲς γίνεται καὶ ὁ ἰὸς τοῦ χαλκοῦ, πρὸς τὰς ἰατρικὰς δυνάμεις χρήσιμα. φησὶ δ᾽ Ἐρατοσθένης τὸ παλαιὸν ὑλομανούντων τῶν πεδίων ὥστε κατέχεσθαι δρυμοῖς καὶ μὴ γεωργεῖσθαι, μικρὰ μὲν ἐπωφελεῖν πρὸς τοῦτο τὰ μέταλλα δενδροτομούντων πρὸς τὴν καῦσιν τοῦ χαλκοῦ καὶ τοῦ ἀργύρου, προσγενέσθαι δὲ καὶ τὴν ναυπηγίαν τῶν στόλων ἤδη πλεομένης ἀδεῶς τῆς θαλάττης καὶ μετὰ δυνάμεων: ὡς δ᾽ οὐκ ἐξενίκων, ἐπιτρέψαι τοῖς βουλομένοις καὶ δυναμένοις ἐκκόπτειν καὶ ἔχειν ἰδιόκτητον καὶ ἀτελῆ τὴν διακαθαρθεῖσαν γῆν.
>
> In fertility, [Cyprus] is **inferior to none of the islands, for it is rich in wine and in oil and has enough grain for its needs**. At Tamassos there are abundant mines of copper in which chalcanthite (copper sulfide) is produced, and also the rust of copper, which is useful for its medicinal properties. Eratosthenes says that in antiquity the plains were thickly overgrown with woody vegetation, so that they were covered with woods and not cultivated; that the mines helped a little against this, since the people would cut down trees to burn the copper and the silver, and that the building of the fleets further helped, since the sea was now being navigated safely, with naval forces, but that because they could not thus prevail [over the growth of forests], they permitted anyone who wished or was able to cut down the timber and to keep the cleared land as his own property and exempt from taxation.

Strabo states, prosaically, that Cyprus is not inferior to other islands in respect to its *arête,* its productiveness, instead of drawing attention to some outstanding feature that made the island noteworthy (Thomsen 1995: 32, n. 107). Strabo goes on to say, however, that before his time, in antiquity (τὸ παλαιὸν), the island's plains had been covered in forests, according to the Greek geographer and astronomer Eratosthenes (writing in the late 3rd c. BCE; 14.6.5), whom Strabo usually critiques (Thomsen 1995: 31). Eratosthenes had written that there were so many trees that the locals could not cultivate the fields, and despite the demand for timber for ship-building (τὴν ναυπηγίαν), the "authorities" – vaguely expressed (Thomsen 1995: n. 100) – incentivized deforestation by offering to let people keep the cleared land as private (ἰδιόκτητον) and exempt of taxes (ἀτελῆ). The tree-clearing of the plains was not problematic, according to Strabo, but

rather beneficial to the island's economy,[264] perhaps echoing the Roman poet Lucretius' contemporary praise of deforestation in his explanation of the development of humanity (*De Re Natura* 5.1370).

There are indeed several layers of morally-laden ideas of landscape at work in Strabo's economic vision of Cyprus:[265] a past of timber for ships and mines, and a present of fertile soil for the Mediterranean trinity of olives, grapes, and grain. In Strabo's period, at the transition to Roman *imperium* in the wider Mediterranean, agriculture held a distinct ideological superiority over trade and mercantilism (Veyne 1990: 52-53). Thus emerges a distinction between an economy driven by the export of copper and timber in an earlier period, and the vague focus on self-sufficient (αὐτάρκει) agriculture of the infamous Mediterranean triad of grapes, grain, and olives in the later period.[266] Moreover, Ole Thomsen (1995: 31) has pointed out that Strabo's description of the island is essentially a *periplus*, giving details of the coast as if from a ship, rather than the inland plains and forests, for which he has to rely on Eratosthenes. While Strabo places emphasis on the abundance of copper on the island, his careful mention of wine, oil, and grain seems convenient to the *topos* of contemporary rural values, as befitting a large, Greek-speaking island that had just recently become a part of the Roman Empire in 22 BCE (annexed from the Ptolemies). Reinforcing the idea that Strabo is operating at the level of *topos* is his unusual omission of any notable kings, poets, or men of Cyprus (Thomsen 1995: 32).

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[264] Thomsen 1995: 32: "The expression employed, hylo-manein, 'to run riot with hyle,' is definitely negative in tone. See also the clause: 'because they could not defeat the vegetation,' which implies that the vegetation is the enemy. Of what? Of the three staple crops, i.e. of the proof of Cyprus' *arête*."

[265] Thomsen 1995: n. 92: "Note that Strabo is usually interested in economic geography – export, import etc." For a more in-depth argument linking *arête* to the island's economy, in relation to a similar description of Kyrene (17.3.21), see Thomsen 1995: 32-33.

[266] "Even the pursuit of self-sufficiency is an ethical tenet rather than a practice observable in reality" (Horden and Purcell 2000: 272).

Pertinent to the discussion of imagined landscapes of Cyprus, moreover, are the discrepancies between Strabo's account of "blessed" productivity (one of the ancient epithets of the island was *makarios*, blessed, Plin. *HN* 5.129; see also "rich Cyprus" in Vergil's *Aen*. 1.621; "leafy Idalion" in Catullus 64.96; Ael. *De Nat. Anim*. 5.56) and the actual soils and climate of semiarid Cyprus. In **chapter 4**, I set out a preliminary hypothesis for a change to wetter conditions in the early 1st millennium BCE, and the response of inhabitants in managing water to sustain cultivation and pastoralism. But in terms of supporting agriculture, Cyprus was hardly a "bread basket" of antiquity with agropastoral surplus[267]: its soils are relatively poor and its rainfall erratic, resulting in a history of struggles to meet self-sufficiency (Christodoulou 1959; Iacovou 2014c). Even in antiquity, Strabo's claims for the island's fertility seem discordant with anecdotes about the region's intense heat and lack of rain. In the 5th c. BCE, for example, the Athenian playwright Euripides describes the town of Paphos as rich and fertile, but without rain, in his tragedy the *Bacchae* (403-407). The modern name of one of the Paphian region's rivers is indeed Xeros, "Dry." The Roman poet Martial (1st c. CE) equally joked that the island was infamous for its late summer heat in an epigram to Flaccus, who lived in Cyprus (9.90):

> Sic in gramine florido reclinis, 1
> Qua gemmantibus hinc et inde rivis
> Curva calculus excitatur unda,
> Exclusis procul omnibus molestis,
> Pertundas glaciem triente nigro, 5
> Frontem sutilibus ruber coronis;
> …
> Infamem nimio calore Cypron 9
> Observes, moneo precorque, Flacce,
> Messes area cum teret crepantis
> Et fervens iuba saeviet leonis.
> At tu, diva Paphi, remitte, nostris
> Inlaesum iuvenem remitte votis: 15

[267] Cf. a rare case of freights of wheat at the Athenian Piraeus in Andokides 2.20, ca. 410 BCE.

> So, reclining upon flowering grass, where here and there in the shimmering stream a pebble is stirred up by rounded waves, may you break ice into dark wine, far removed from all cares, and rosy with wreaths fastened to your brow…
> Flaccus, I warn and beg you, beware of Cyprus, infamous for its excessive heat, when the threshing floor grinds up the crackling harvests and the glowing mane of Leo becomes fierce. And you, goddess of Paphos, return the young man unharmed, return (him) to my prayers.

As Jane Fejfer (2013) has recently pointed out, Martial deliberately distinguishes between a *locus amoenus* (ideal/idyllic place) of Venus – a flowing stream and grassy glen, distance from troubles, wine and relaxation – with the excessive heat (nimio calore) of Cyprus. The harvest consists of brittle, dried out grains. Martial even pleads with Venus/Aphrodite to return Flaccus unharmed, emphasizing the dangers of the Cypriot summer climate.[268] Far from the agricultural Eden that Strabo described mere decades earlier, Martial instead imagines Cyprus as a countryside of ruined harvest, perhaps even recalling a recent drought.

Strabo's depiction of Cyprus also draws a line between the values of cultivation and the landscapes of mining and metallurgy, furthering another dichotomy of ancient thought that separated these taskscapes. Copper was one local resource that supported Cyprus' role in late 2nd millennium and 1st millennium BCE trade networks, and which has drawn the most attention from antiquity to the present. It is possible that the word copper (from the Latin *cuprum*) derives from the Roman term for the island, *Kupria*.[269] In the Late Bronze Age, Alashiya (Cyprus) was the key provider of copper within interregional trade networks, as recorded in letters between authorities at Ugarit, Egypt, and the Aegean (see Knapp 2008: 335-341; Goren *et al.* 2003). In the Homeric epics, Cyprus reappears as a source for the copper: in the *Odyssey* (1.84), "Temese"

[268] Thomsen 1995: 34: "Martial's attitude, in this poem with this addressee, may be summarized: too much of a good thing."
[269] Kopaka (2009: 187-189) notes other Greek islands named for their resources, including metals: Molyothis nisos (Lead island) near Sardinia (Ptol. *Geog*. 3.3), for example, or the Kassiterides nisoi (Tin islands) near the British Isles (Hdt. 3.115.6-7).

is mentioned as an origin of the precious metal, which some scholars believe may have signified the town of Tamassos (Muhly 1996: 46). This inland site, one of the purported polities mentioned in the list of Neo-Assyrian king Esarhaddon from the early 7th c. BCE, has long figured within scholarship as a source of control over one of the island's richest copper regions, due to its placement near important slag heaps and mines (e.g. Karageorghis 1982: 151).

The connections between Cyprus and copper, as viewed from the Greek world, also have mythic and ritual referents. In the *Homeric Hymn* to Aphrodite (5.2-13), the poet describes the goddess teaching metallurgy to craftsmen, passing along the trade secrets of her cult's island. Her marriage to the craftsman Hephaistos in Greek myth reinforces this close connection (West 1997: 57). Jennifer Webb (1999: 298-302) has expertly traced the relationships between ritual practice and copper on Cyprus in the Late Bronze Age, a period in which sanctuaries and metallurgical production areas are often found adjacent to one another. Similarly in 1st millennium BCE ritual spaces, metal-working areas are often sandwiched together with shrines, such as at Tamassos and Kition, while terracotta figurines have been found within slag heaps at sites such as Mathiati, Ayia Varvara *Almyras*, and Kalavasos *Skourka*. Figurines holding copper ingots, the common form by which copper was transported, indicate an intimacy between the mineral resource and expressions of worship. In this interpretation, the great goddess, who later took the form of Aphrodite (Ulbrich 2010), protects the economic prosperity drawn from the mining and export of bulk copper.

In a similar vein, the mythic beings known as the "daktyls," small phallic creatures associated with mining and metallurgy in the ancient Greek world, are said to have discovered iron on Cyprus, according to a fragment of Hesiod (Pliny *HN* 7.56.197) and the much later writings of Clement of Alexandria (*Strom*. I.16.75). Commonly associated with Mt. Ida on Crete,

the dactyls belong to a cross-cultural, diachronic tradition in mining lore that links diminutive and often deformed mythic beings with the dangerous work of extracting metals and minerals from the bowels of the earth: the most famous recent iteration being the Seven Dwarves of Grimm fame, or Gimli and his kinfolk in Tolkien's imagined Middle Earth. The daktyls were especially connected to iron as well as music and ritual songs, and their apparent exploration of iron on Cyprus reaffirms the ancient views of the island as a source of important metals, even beyond copper. The purported Hesiodic fragment also attests to the early links between Cyprus and Crete in ancient perceptions of mineral resources and metallurgical craftsmen (Morris 1992: 129).

A separate mythic juncture between Cyprus and its mineral wealth pertains to the heroic figure Kinyras, a king of Cyprus and, by the time when the lyric poet Pindar was writing in the early 5th c. BCE, a man renowned for possessing great riches (*Nemean Ode* 8.18).[270] An ancient Renaissance man, Kinyras is also important in Mediterranean lore as an accomplished lyre player (Clement of Alexandria),[271] a *protos heuretes* of mining and metalworking (Pliny *HN* 7.195), and even a priest of divinatory practices in the temple of Aphrodite at Paphos (Pind. *Pyth*. 2.15-17; Tac. *Hist*. 2.3). In antiquity Kinyras became a metonym for copper oxhide-ingots, known colloquially as "the talents of Kinyras." King Agamemnon in the *Iliad* (11.19-28), before the Greek army's venture to Troy, puts on an elaborate bronze corselet (θώρηκα), studded with tin, blue glass and precious stones, which the poet describes as a guest gift from Kinyras. The

[270] A local hero on Cyprus, with a Semitic name, likely connected to the Hebrew kinnor ("lyre"), the Akkadian god Ki-na-rum, and the Ugaritic knr (Morris 1996; see Franklin n.d. and forthcoming, *Kinyras: The Divine Lyre*).
[271] Kinyras is also connected as eponymous ancestor to the Kinyradai, the temple musicians in charge of the Paphian cult of Aphrodite (West 1997: 57). On Kinyras see C. Baurain (1980) "Kinyras: la fin de l'Age du Bronze à Chypre et la tradition antique" *BCH* 104: 277-308.

"description of the hero's splendid war-harness is endemic in heroic poetry" (Hainsworth 1993: 216), and Agamemnon's donning of the corselet offers a clear example:[272]

> δεύτερον αὖ θώρηκα περὶ στήθεσσιν ἔδυνε,
> τόν ποτέ οἱ Κινύρης δῶκε ξεινήϊον εἶναι.
> πεύθετο γὰρ Κύπρον δὲ μέγα κλέος οὕνεκ᾽ Ἀχαιοὶ
> ἐς Τροίην νήεσσιν ἀναπλεύσεσθαι ἔμελλον:
> τοὔνεκά οἱ τὸν δῶκε χαριζόμενος βασιλῆϊ.
> τοῦ δ᾽ ἤτοι δέκα οἶμοι ἔσαν μέλανος κυάνοιο,
> δώδεκα δὲ χρυσοῖο καὶ εἴκοσι κασσιτέροιο:
> κυάνεοι δὲ δράκοντες ὀρωρέχατο προτὶ δειρὴν
> τρεῖς ἑκάτερθ᾽ ἴρισσιν ἐοικότες, ἅς τε Κρονίων
> ἐν νέφεϊ στήριξε, τέρας μερόπων ἀνθρώπων.
>
> Next he put on around his chest the corselet
> Which Kinyras had given to him once for a guest gift
> For he heard in Cyprus the great rumor that the Achaeans
> Were about to set sail to Troy in their ships;
> For which reason he gave him the breastplate to please the king.
> On it were ten bands of dark blue,
> Twelve of gold, and twenty of tin:
> The serpents of blue writhed up toward the neck,
> Three on either side, like rainbows, which the son of Cronos
> Set in the clouds, a portent for mortal men.

This encounter is indeed the only point in which the poet mentions Cyprus in the *Iliad.* As Bryan Hainsworth (1993: 218) notes in his commentary, it seems plausible that the poet assigned the corselet to Kinyras of Cyprus, an otherwise unattested place in the Homeric world of the *Iliad*, to "imply that the fame of Agamemnon had reached the ends of the earth" (cf. West 1997: 628-629). More prosaically, the scene references the familiarity with Cyprus as a source for the best metal, fit for a king. An overt spatial connection is also potentially made, however, between the craftsman from Cyprus and his exquisite copper guest-gift (ξεινήϊον), echoing the importance

[272] For archaeological evidence for corselets see H. Catling (1970) "A bronze plate from a scale-corselet found at Mycenae." *Archäologischer Anzeiger* 1970: 441-449. In Eustathius' commentary on this passage from the *Iliad* (11.20), he claims that Kinyras had failed to keep a promise to Agamemnon of 50 fighting ships for the war effort, instead sending only one (see also Apollodorus *Epit*. 3.9-10).

of gift exchange between leading authorities that had characterized the Late Bronze Age (Morris 1996: 102).

In these imaginations of Cyprus as a place rich in copper and skilled metallurgists, the island takes on a distinctly commercial guise. We see this aspect of Cypriot commerce in Menelaus' recounting of his post-war travels to Telemachus in the *Odyssey* (4.83-85), in which he makes his livelihood while wandering between Cyprus, Phoenicia, and Egypt before returning home and building his impressive monumental palace at Sparta (4.1-58). In this way Cyprus occupies a similar place in Greek imagination as the Phoenician world, which consistently invoked mercantilism, craftsmanship, and their famous purple dye, drawn from the murex shell (Sherratt 1994: 82). In the *Iliad* (6.289-295, 23.743), for example, the Sidonians were repeatedly marked for producing precious objects. Menelaus' itinerant source of wealth brings up an additional lens with which the ancient world viewed the landscapes of Cyprus: as a place of mildly exotic kings and their urban regimes.

Dynasties, mythic foundations, and the city-kings of Cyprus

A long-standing trope about the island of Cyprus is the population's need, and outright desire, to be ruled by another power. As we saw in Sargon II's inscription that opened **chapter 1**, for example, the Cypriot kings tremble in fear of his power, and willfully submit to Neo-Assyrian rule.[273] This view was usually extolled by imperial powers, and most fabulously by the British during their occupation of the island from 1883-1960, to justify their colonial practices.

[273] Iacovou has interpreted this statement in Sargon II's inscription as the willful submission of the Cypriot kings to preserve their own authority: "When Alexander came to Cyprus, the Cypriot kings did what they had shrewdly been doing since the days of Sargon II in 707 BC – they correctly judged that a new power was about to replace the Persian Empire and they hastened to offer their allegiance in order to ensure the preservation of their autonomy" (Iacovou 2007a: 463).

Sir Richard Palmer, for example, Governor of Cyprus in the 1930s, notoriously stated in 1939 that "the people of Cyprus make a luxury of discontent and always pretend that they do not like being ruled, and yet…they expect to be ruled, and in fact, prefer it" (quoted in Given 2002a: 423). Even under independence, since the mid-20th c., the conception of Cyprus as a strategic island coveted and ruled by regional powers, whether the Franks, Venetians, Ottoman Turks, or British (or European Union), holds considerable weight (e.g. Nicolaou 1986: 424). The title of a recent children's book about the history of Cyprus, published in 2007 by Marina Christofides, draws upon this theme of endless conquest: *The Island Everyone Wanted*.

Ancient imaginations of the political landscapes of Cyprus give little indication of this view of perpetual subjection to other powers, despite the Neo-Assyrian proclamations. In Kinyras' appearance in the *Iliad* (11.20ff), for example, the poet alludes to his influence as a king on par with Agamemnon, or at least bearing considerable clout, via his important guest gift. It is difficult, on the other hand, to trace how ancient populations viewed Cypriot institutions of rule. As noted above, Cyprus makes fleeting appearances in early Greek epic, for example, to imagine places far out in the Mediterranean, yet little is said about its kings and what they did (e.g. *Od*. 17.442). Nevertheless, from scattered references, there emerges one recurring focal point in depictions of Cyprus that emphasized spatial authority, rather than the constant subservience of its peoples to imperialism, and that is the role of the king in building cities.

Cyprus' position as a stopping point in Mediterranean travel becomes a key feature in stories of the heroes of the Trojan War making their ways back to Greece (see Gjerstad 1944). It is in the vein of the legends of *nostoi* (those returning home) tossed about by storms that the landscapes of Cyprus indeed become pertinent to Greek mythology and protohistory, since

several important mythic figures end up founding cities and kingdoms along its coasts.[274] The hero Agapenor, for example, according to Pausanias (8.5.2) writing in the 2nd c. CE, was blown off course after vanquishing Troy and landed on Cyprus, where he founded the city of Paphos and its temple of Aphrodite (Isoc. 9.18). Teucer, of the island of Salamis and brother of Ajax, founded the city of Salamis in eastern Cyprus. The Athenian playwright Euripides wrote *Helen*, in 412 BCE, which depicts Teucer's post-war travels to start a new life on Cyprus: "how should I steer a favorable course to the island of Cyprus, where Apollo has declared I am to live, giving it the island name of Salamis in honor of my fatherland there?" (147-151). Similar narratives mark the Athenian heroes Phalerus and Akamas as founders of Soloi (Strabo 14.6.3), the Laconian Praxander at Lapithos (Strabo 14.6.3), and Argive colonists at Kourion (Hdt. 5.113; Strabo 14.6.3), creating a patchwork of Greek city-builders or city-usurpers across the island.

The *nostoi* tales held a significant place in later 5th c. BCE Greek historiography, since they acted as a starting point for the post-mythic beginnings of history, as outlined by Thucydides in his famous introduction to the *Peloponnesian War* (1.1-1.21; Malkin 1998: 3). For Cyprus, the legends are deemed to reflect the important take-over of existing cities by Greek authorities (Iacovou 2008b: 270-271). As Jonathan Hall (1997) has cogently illustrated, foundation stories were powerful engines for establishing and manipulating local identity across generations in the ancient Greek world, but these *nostoi* legends only indicate how the Greeks attributed Cypriot cities to their own mythic landscape (see also Sweeney 2015). There is little direct evidence, from the mid-1st millennium BCE inscriptions found on Cyprus for example, that local populations also established political identities around the concept of Greek founder-heroes.

[274] Although, this idea of a Greek "history" is likely misleading given the disagreements in the 5th c. about what constituted that mythic history (Whitley 1993: 226).

It is not until the 5th-4th c. BCE that Greek writers show some interest in the historic kings in these Greek-like cities on Cyprus. Often, these descriptions highlight the eastern qualities assumed to be characteristic of the island and its royalty. According to the writer Athenaeus of the later Roman period, for example, who collected stories about luxurious dining, the mid-4th c. BCE comic playwright Antiphanes described a contemporary king of Paphos being fanned by servants and anointed in scented oils (6.71). We also learn tantalizing details from Herodotus about Cypriot kings and their customs, including the *mitrai* headdress that they wear (7.90.1), as fits his ethnographic style. Herodotus also contrasted Cypriot kings with Greek statesmen. He writes that the famous Solon of Athens, an Athenian lawmaker of the 6th c. BCE, traveled to Cyprus and was so impressed by the king Philocyprus of Soloi that he wrote a poem praising him "above all other tyrants" (τυράννων μάλιστα, 5.113.2). This praise is all the more intriguing given Herodotus' employment of Solon earlier in his *Histories* (1.29-33) as a figurehead with which to expound upon the qualities that make a man the most prosperous and fortunate. By the 2nd c. CE, Plutarch had added significant details of Solon's trip to Cyprus in a biography of the statesman (*Vit. Sol.* 26.2-3):

> ἔπειτα πλεύσας εἰς Κύπρον ἠγαπήθη διαφερόντως ὑπὸ Φιλοκύπρου τινὸς τῶν ἐκεῖ βασιλέων, ὃς εἶχεν οὐ μεγάλην πόλιν, ᾠκισμένην ὑπὸ Δημοφῶντος τοῦ Θησέως, περὶ τὸν Κλάριον ποταμὸν ἐν χωρίοις ὀχυροῖς μέν, ἄλλως δὲ δυσχερέσι καὶ φαύλοις κειμένην. ἔπεισεν οὖν αὐτὸν ὁ Σόλων ὑποκειμένου καλοῦ πεδίου μεταθέντα τὴν πόλιν ἡδίονα καὶ μείζονα κατασκευάσαι. καὶ παρὼν ἐπεμελήθη τοῦ συνοικισμοῦ, καὶ συνδιεκόσμησε πρός τε διαγωγὴν ἄριστα καὶ πρὸς ἀσφάλειαν, ὥστε πολλοὺς μὲν οἰκήτορας τῷ Φιλοκύπρῳ συνελθεῖν, ζηλῶσαι δὲ τοὺς ἄλλους βασιλέας: διὸ καὶ τῷ Σόλωνι τιμὴν ἀποδιδοὺς Αἰπεῖαν τὴν πόλιν καλουμένην πρότερον ἀπ᾽ ἐκείνου Σόλους προσηγόρευσε.
>
> Next [Solon] sailed to Cyprus, and was greatly beloved by Philocyprus, one of the kings there, who had a small city founded by Demophon, the son of Theseus, and situated near the river Clarius, in a position which was fortified, but otherwise inconvenient and inaccessible. Solon therefore persuaded him to build a pleasing and spacious city on a fair plain lying below it. He also remained and took charge of the new city's consolidation (*synoecism*), and helped to arrange it in the best possible manner both for

> convenience of living and for defense. The result was that many colonists flocked to Philocyprus, so that he vied with the other kings. [Philocyprus] therefore paid Solon the honor of naming the new city after him, and called it Soli; its name had been Aspea.

Plutarch's version of the establishment of a new city of Soloi affirms the well-known story in antiquity that Solon founded a colony in the eastern Mediterranean after he had finished creating laws for Athens (Irwin 1999).[275] While serving to reinforce the talents and wisdom of Solon, Plutarch's version also becomes a window into the ancient conception of a well-built, successful city, in this case placed on Cyprus. It should be defensible but orderly, allowing space for the population to go about its daily practices, and should be accessible. Even with this relatively schematic description, Plutarch adds that Philocyprus' new Soloi was so successful that he could compete with other local rulers, who presumably already had impressive cities. Of course, this rare description of a mid-1st millennium BCE city on Cyprus results from the instigation and city-planning knowledge of an outsider, and its repetition in biographies of Solon speaks more to an interest in his own skills as a founder of cities. Plutarch's story does, however, strengthen the close relationship between Cypriot kings and their powers in city-creation.

The significance attributed to city-building for Cypriot kingship continues as a theme in later 4th c. BCE Greek writing, during a period in which Greek perceptions of the world were becoming more sophisticated to make room for more neighbors, such as the Macedonians. The rhetorician Isocrates (mid-5th-mid-4th c. BCE), in a famous oration about the Cypriot king Evagoras (9), used the epideictic genre of oratory to tell the story of the king as a virtuous man as well as to give biography of his achievements and history as king (Poulakos 1987).[276] Addressed

[275] As Irwin (1999: 187-188) notes there is confusion over where the colony is: many ancient scholia place it on Cyprus or as the city of Soloi in Cilicia.

[276] Isocrates wrote two other orations for Cypriot kings, and the three are known as his "Cypriot trilogy." The Evagoras was presumably meant to be recited in Salamis at a festival commemorating Evagoras, who had died shortly before Isocrates wrote it in 374/3 BCE (Hägg 2012: 30).

to Evagoras' son Nicocles (and likely meant as a guide to proper rule for the young king), the oration first describes how Evagoras, having been exiled from Cyprus, came back to reclaim rule over his city, Salamis: without stopping to consider his position or safety, or to judge how many citizens would join him, Evagoras "immediately, just as he was, on that very night, broke through a little gate in the wall, and leading his followers through, attacked the palace (προσέβαλλε πρὸς τὸ βασίλειον)" (9.30). Evagoras' resilience and fortitude, in regaining his control over Salamis after defeat, serve as key principles of a virtuous Cypriot king. But an integral distinction of Evagoras, as compared to the Phoenicians who had overthrown him and taken his city, was his program of embellishing his built environment (9.47). While the tyrants of Phoenicia had left Salamis in "a state of barbarism," without a harbor, Evagoras set about city-building (9:47):

> ταῦτά τε πάντα διώρθωσε καὶ πρὸς τούτοις καὶ χώραν πολλὴν προσεκτήσατο καὶ τείχη προσπεριεβάλετο καὶ τριήρεις ἐναυπηγήσατο καὶ ταῖς ἄλλαις κατασκευαῖς οὕτως ηὔξησε τὴν πόλιν ὥστε μηδεμιᾶς τῶν Ἑλληνίδων ἀπολελεῖφθαι
>
> [Evagoras] remedied all these things and, besides, acquired much additional territory, surrounded it with walls and built triremes, and with other construction so increased the city that it was inferior to none of the cities of Greece.

In Isocrates' words, Evagoras taps into the tradition of kings judging the success of their rule by the cities that they built and the lands that they added to their territory.[277] Although it is likely that Isocrates did not have much familiarity with Salamis itself (Hägg 2012: 35), and he renders Evagoras' architectonics more as ideal fixtures for a defensible, functional city (and likely not structures like gymnasia, Hermary 2013: 84), this description fits well with the imagined urban role of the Cypriot king in Greek thought.

[277] Which is also an important trait of Near Eastern kingship; see e.g. Mitchell 1994.

The urban geopolitics of Cyprus became more permanently defined as geography itself grew into a scientific endeavor in the later 1st millennium BCE. Descriptions of the physical landscape of Cyprus increased in accuracy as writers sought to catalogue spatial distances between important coastal harbors so as to create a formal assessment of the known world. In the *periplus* (the form of geography outlining distances of coastline and harbors) of Pseudo-Skylax, dating to the mid-4th c. BCE, the author simply lists the cities of Cyprus on the coast: Salamis, Karpasia, Kerynia, Lapethus, Marion, and Amathus (102). While some scattered remarks are included about the local populations (such as the Amathusians who are "autochthonous"), the geography is above all an inventory of places deemed to be cities. Strabo, writing in the late 1st c. BCE-early 1st c. CE, adds small details about rivers and mountains between the cities (14.6.3-4).[278] Around the same time, Pomponius Mela (1st c. CE) wrote a geographical treatise *De Situ Orbis* (in Latin) using the methods of a periplus, following the coastlines of the Mediterranean sea, detailing the adjoining lands, and then describing the inner islands. His description of Cyprus is schematic (2.89): it is huge (ingens), possessing many cities (urbes), and was the first place where Venus (Aphrodite) emerged from the water. Ptolemy (*Geog*. 5.13), by comparison, writing in the 2nd c. CE, records only the names of major points with which to measure distances from harbor to harbor. The geo-inventory continues in the *Historia Naturalis* of Pliny the Elder, of the mid-2nd c. CE, in which Cyprus consisted of 15 towns (oppida), scattered around the coast (*HN* 5.129-130). Lists of the island's coastal urban geography are therefore integral to the style and methodology of these formal treatises. Of course, many maps list only prominent places and critical spatial information, and it is perhaps unremarkable that these representations of Cyprus

[278] Strabo also included remarks about the local economy or salient cultural oddities, and I discuss these in the next section for Cyprus.

only included coastal cities. Nevertheless, the elision of the Cypriot interior, except as a bed of copper, speaks to an outside view of Cyprus' significance as an island of harbors.

While there is the possibility that the Greeks produced more in-depth examinations of Cypriot rule and their urban centers of power, these have not survived. In an obscure side note on ancient royal crowns in the encyclopedic *Suda*, compiled sometime in the 10th c. CE, the author notes that the Greek writer Theophrastus (mid-4th to early 3rd c. BCE) at one time wrote a treatise called "On the Kingship of the Cypriots" (Περὶ βασιλείας Κυπρίων, Suid. s.v. τιάρα).[279] The 2nd c. CE lexicon of the Alexandrian grammarian Harpocration also alludes to the existence of a work on the constitution of the Cypriots, *Kyprion Politeia*, presumably authored by the Aristotelian school of the 4th c. BCE. Harpocration further associates the Kyprion *Politeia* with a one-line fragment that connects the ancient Mycenaean term for king, *wanax*, with Cypriot royal nomenclature, the *anax* (Arist. frg. 532. Gigon: Harpokration, ed. Bekker):

> ἄνακτες και ἄνασσαι: οἱ μεν υἱοι τοῦ βασιλέως και οί αδελφοί καλούνται ἄνακτες, αἱ δε άδελφαι και γυναίκες ἄνασσαι.
>
> Anaktes and anassai: the men of the royal family and the brothers are called *anaktes*, the sisters and the women *anassai*.

Much to the frustration of early historians and archaeologists, these two works are lost, and in fact not mentioned elsewhere, leaving their hypothetical interpretations of Cypriot kingship a very open question (e.g. Iacovou 2004b: 271; Satraki 2013: 125; Counts 2010: 142; Hermary 2013: 83; Fourrier 2013: 103).

[279] "A head decoration, which only the kings used to wear upright among the Persians, while the generals wore it at an angle. Demaratos the Lacedaemonian, who came to Athens with Xerxes, when on a fine day the king granted him whatever he wished to ask, asked to drive into Sardis in an upright tiara, as Phylarchos says in [book] 10. And they say that a *kitaris* is also the same thing. Theophrastus in the work "On the Kingship of the Cypriots" [mentions] the *kitaris*, as (something) different."

Local landscape imaginations

The local preoccupation with the sea, and the identification of Cyprus as a place where goods and people – from faraway places - were constantly moving, appears in representations of ships engraved into the walls of two temples at the site of Kition *Kathari*, dating from the late 12th to at least the 6th c. BCE (Basch and Artzy 1985; Wachsmann 1998: 147, figs. 7.33-38; Smith 2009: 80-82). The schematic representations adorn the dressed ashlar facing of Temple 1 at the site, along the southern wall that faced out to the sea (Fig. 2). This positioning would also have been the most visible to people entering the Temple from the southeast (Smith 2009: 80). Due to the accumulative nature of the multiple etchings, presumably produced one at a time and not as a single planned composition, scholars have typically focused on what the representations reveal about contemporary ship-making and sea-faring (e.g. Wachsmann 1998: 147). Others have sought to unite the graffiti, as the etchings have been called, with ancient cults for mariners, used to invoke deities who offered protection to seafarers in dangerous waters.[280] Scholars have similarly guessed that boat models made of terracotta, found within ritual and burial contexts at Iron Age sites such as Amathus, reflect this practice of sea-worship (Papantoniou 2012: 237). In an important work on visual perception and creativity on Cyprus in the transition from the Late Bronze Age to the Iron Age at Kition, Joanna Smith (2009: 80-82) has proposed that the ship etchings probably connected the ships that would have been seen in the harbor of Kition with Temple 1, an important ritual space. The significance of ships at Temple I also appears throughout the site in the placement of anchors within walls and thresholds (Smith 2009: 80). On the side of an altar within Temple 4, two additional carvings of schematic ships appear along the base, near the floor, abutting a hearth (Smith 2009: 82).

[280] For the associations of Aphrodite and seafaring Papantoniou 2012: 237.

Fig. 7.2. Interpretation of ship engravings on the wall of Temple 2 at Kition *Kathari* (Smith 2009: III.1).

In addition to reinforcing the role of Kition's ritual built environment within maritime trade and exchange, the ships may have produced, across different generations, an imagined seascape that isolated knowledge of ships and seafaring under the purview of the temples. In a similar way that prehistoric imagery of seascapes and ships on Crete created perspectives of water as "other," the Kition ship engravings possibly sought to highlight differential access to maritime technology (Petrakis 2011: 185). While on one level, the etchings reflect a common iconographic element of ancient art in this period, the continuous selection of ships over such a long period, as adornment for a prominent building, may represent efforts to "see the sea from the land" (Petrakis 2011: 185), and to imagine the sea as an arena controlled by those who operated, and sought identification, within the ritual spaces. The interior placement of ship etchings in Temple 4, on a central altar, may further suggest an enclaving of maritime landscapes, for the view of a select group. This building of social boundaries, conditioned by

representations of ships, may therefore have reinforced the potency of foreign objects and knowledge for a group of travellers and traders considering themselves a select group (Helms 1988; Artzy 2003; see also Leriou 2011).

Imaginations of space on a miniature scale also appear in the temple contexts of Kition *Kathari* in the form of ceramic architectural models with cut-outs representing windows and doors (Smith 2009: 82-85; Fig. 3).

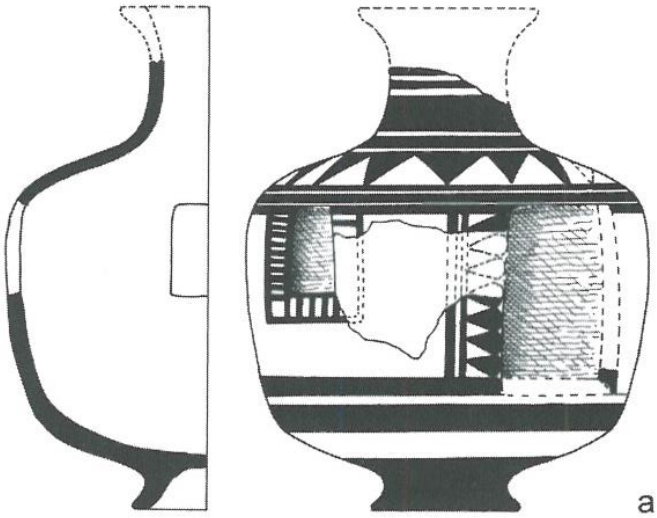

Fig. 7.3. Terracotta 'building model' found at Kition *Kathari* (after Smith 2009: III.3)

Fig. 7.4. Early Cypriot terracotta vessel found at Bellapais *Vounous*, known as the 'Vounous Bowl,' showing scene with human and animal figures (Steel 2013: fig. 1).

Found either in floor deposits or buried in pits with other votive objects in Temenos A and Temple 5, these wheelmade vessels stand ca. 15-25 cm high, and are decorated with solid black bands or geometric shapes, which may preserve contemporary textile designs. The models echo similar representations of built spaces in Cypriot art from the Iron Age, including images of small shrines (*naiskoi*) attached to the head of Hathor in architectural capitals, serving as headdresses (Papantoniou 2012: 212, 269). From certain angles, the vessels appear rectilinear instead of cylindrical. Architectural models in miniature scale, and associated with ritual contexts, are not uncommon in the Near East (Muller 2002; Nissinen and Münger 2009). On Crete, similar cylindrical models date from roughly the 11th to 7th c. BCE and share overtly

architectonic elements such as doors and figurines (Mersereau 1993). Due to their unique form, Rebecca Mersereau (1993: 8-9) has argued that the Cretan models acted as symbols of an imagined architectural space and its associated ritual practices rather than a real built form. Vassilis Petrakis (2006), on the other hand, argues that they mimic the construction of the prehistoric cylindrical *tholos* tomb found throughout the Greek mainland.

Due to the contextual deposition of the Kition models within temples, and with other votive objects, it seems plausible that the built forms recreated imagined sacred spaces in miniature, and perhaps their intentional burial signified control over the spatial practices of ritual. Smith (2009: 85) has argued that the vessels represented a cosmos on a human scale, and their liminal openings – doorways and windows – fostered communication between the imagined world within and the world outside. It is tempting also to see the vessels continuing a tradition, extending back into early prehistory on Cyprus, of imagining spatial relationships between humans, animals, and objects in ceramic coroplastic art (e.g. Karageorghis 1993). In a very famous scene from a vessel dating to the Early Cypriot period, found at the site of Bellapais *Vounous*, ceramic figures of humans, cows, and what could be a temenos or city wall separate certain participants away from the important action going on in the scene (Steel 2013; Fig. 4). While figures are shown surrounding a prominently seated individual, one person is outside the "wall," looking in, both spatially and figuratively removed from the gathering. Do the Kition vessels imagine a similar control over social space? In one of the Kition examples, the broken end of a ceramic figure remains on the floor of the built space, within its walls, suggesting a possible division between inclusion and exclusion. These imagined spaces may thus have served not only to represent critical markings of ritual space in ancient Iron Age Cyprus, but may also

have acted to reinforce asymmetrical social relationships, between those with access to practice and those without.

One of the surviving inscriptions found on Cyprus that may imply how local authorities imagined their political territory is an important bronze tablet from the site of Idalion *Ampileri*, now in the Bibliotheque Nationale in Paris (Masson 1961: 234).[281] Known as the "Idalion tablet," the object dates to the early 5th c. BCE and consists of an inscription, in the Cypriot syllabic script,[282] on both sides (Chadwick 1987: 55). The inscription chiefly outlines how the city of Idalion and the king, Stasikypros, granted land after the siege of the city by the Persians, around 480 BCE. The wording suggests that the siege did not succeed, and that Stasikypros still ruled when the inscription was set up (Maier 1985: 34). After an opening that recounts how the Medians and Kitians besieged the city in the year of Philokypros (l. 1-2), the authorities reward a doctor named Onasilos, son of Onasikypros, and his brothers, who gave free medical support to those wounded in the battle. After offering Onasilos and his brothers one talent of silver, the king and the city offer land as an alternative (*ICS* 217: l.7-15):

> Or, in place of the said amount of one talent, the king and the city will give to Onasilos and to his brothers the land of the king which is in the district of Alampra, the land which is in the lowland, that which touches the orchard of Onchas, and all the seedlings therein, to enjoy with all the products for sale, forever, without taxes. If someone should expel Onasilos or his brothers or the children of the children of Onasilos from said land, thus that person will pay to Onasilos and his brothers or to the children the sum which follows: one talent of silver.

In the following section, the king and the city offer to Onasilos only, and not to his brothers, another parcel of land "in the plain of Melania" (l. 17), as well as a garden used at the time as an

[281] Discovered in 1950, the exact findspot of the tablet is unknown.

[282] This later version of the syllabic script used in the Late Bronze Age dates from the 11th c. BCE, in its first appearance on the Opheltas spit, to the mid-2nd c. BCE, when it falls out of use. Bilingual inscriptions with the script and the Greek alphabet found in classical deposits on Cyprus helped to isolate the syllabary (Chadwick 1987: 50ff).

orchard (l. 20-21). The tablet's decree goes on to invoke oaths dedicated to the goddess Athena at Idalion, to secure its posterity, and warns that whoever may break the inscribed agreement will cause sacrilege to the goddess. For those descendants of Onasilos that remain within the district of Idalion (l. 31), the lands and gardens will forever be theirs.

It is clear the perspective of land within the inscription centers on ownership as well as production. The various plots of land (including *aroura*, a Cypriot word meaning "plowed land" Bowra 1934) are implied to be fertile and are adjacent to properties already under cultivation, owned both by other presumed citizens, or at least those of a land-owning class, as well as by the polity itself (Satraki n.d.). The word transliterated into Greek as *oironi*, "district" (Masson 1983: 244), may derive from the term *o-ro-jo* used in Late Bronze Age Linear B tablets to denote administrative regions (Fourrier 2002: 142). Moreover, the land granted to Onasilos will be under perpetual protection from the threat of expulsion, indicating that land was a highly valued commodity in 5th c. BCE Idalion.

Finally, it is worth noting that in antiquity, the Greeks and Romans thought of Cyprus as a source of early epic poetry. Poems that adapted the stories of the *Iliad* and *Odyssey* (an ancient version of fanfiction) began circulating in the 7th and 6th c. BCE, and many have made the connections between the contemporary opulent tombs found at the city of Salamis, complete with sacrificed horses, and epic funereal practices (e.g. Tandy 1997; Blackwell 2010; Karageorghis 1973). Among the variations was a cycle called the *Kypria*, which purportedly narrated the events leading up to the Trojan War. As a sort of prehistory, the *Kypria* was likely a local adaptation rather than pan-Mediterranean (Nagy 1979: 7-11), and presumably written by a poet named Stasinos (or Hegesias) of Salamis, who later was imagined as a son-in-law of Homer

himself (Proklos *Chrest.* 22; Deger-Jalkotzy 1994: 21).[283] Martin West (1997: 628) has posited that the sixth *Homeric Hymn* that describes Aphrodite's rule over Cyprus, in addition, was potentially a composition for a Cypriot festival to the goddess. The *Kypria* and other Cypriot-related epics drew attention to the island's poetic ingenuity, as well as placed it more firmly within the realm of the heroic narrative (Deger-Jalkotzy 1994; Burgess 2002; Morris 1996; Burkert 1992: 101-104; West 1997: 628).[284]

According to Herodotus (2.116.3), the *Kypria* deviated from the *Iliad's* recounting of the famous abduction of Helen by claiming that Paris' trip back to Troy with his captive only took three days, instead of a long period of wandering, as told in the *Iliad*. Yet Herodotus' version of the *Kypria* differs dramatically from the fragments recorded by Proklos in late antiquity (ca. 4th c. CE), in which Paris and Helen were blown off course by a storm to Cyprus and then Sidon in Phoenicia, which Paris destroyed before sailing on to Troy (see also Apollod. *Epit* 3.9, sch. bT; Huxley 1966: 25). As George Huxley (1966) has argued, it is this latter version that was likely a local variant on Cyprus, as it situated the island within the mythic journeys of the Greek heroes, correcting its significant absence in the Homeric version. Interestingly, in this hypothetical local epic cycle, poets reaffirmed Cyprus' hallmark identity as an island surrounded by a stormy sea and as a harbor for transgressive travelers. While there is little evidence to argue for the *mentalités* at work in this representation, it is possible that the Cypriots themselves, in the telling and retelling of the story, imagined their island not only as sea-bounded but as an important node within a hyper-mobile environment of trade and sea travel.

[283] See Burgess 2002 and Huxley 1966 for possible variants of *Kypria* by a poet named Kyprios from the city of Halikarnassos.

[284] The late antique writers Clement of Alexandria and Arnobius also refer to a prose author of the Hellenistic period named Philostephanus who had written a collection of Cypriot stories called the *Kypriaca* (Salzman-Mitchell 2008: 291-292).

Lived spaces

One theme that emerges from this review of imagined Cyprus in the ancient world is the tension between distance and proximity, both in terms of real space as well as conceived practices and culture. Cyprus is a large island tucked in the corner of the eastern Mediterranean without smaller islands around it, and it compelled sea-going vessels to seek out its harbors if they were sailing between Egypt, the Levant or Anatolia, and points further west. The recurring placement of Cyprus in dangerous, stormy seas in Greek and Neo-Assyrian thought highlighted the island's utility as an intermediary stopping point, while also reiterating its insularity and sea-boundedness. Although it was far from the Greek mainland, it could not be compared with the seemingly unbelievable places of Ethiopia, for example, or the Indian subcontinent. Likewise, early Greek foundation legends made clear to put Greeks on Cyprus before the events of the Trojan War, claiming the island at least in language, but leaving space to imagine odd clothing, luxurious lifestyles, and decadent kings. In elevating the defining uniqueness of Cyprus as its distance out in the sea, the intricacies of its geography and demography were as a result flattened and reduced to the metonymical landscape of copper, cities, and trees.

The Cypriot kings, portrayed as immensely wealthy (e.g. Kinyras, and those mentioned in Sargon II's inscriptions bearing gifts, but oddly not copper), also served as a testing ground in Greek thought for the practice of city-building. The legends of *nostoi* finding their way to Cyprus after the defeat of Troy emphasize the urban foci of these authorities, whether they built the cities themselves, or took over from local populations. By the 5th-4th c. BCE, the role of the king in city-building held pan-Mediterranean attention, appearing for example through the stories of Philokyprus of Soloi and Evagoras of Salamis. The distillation of Cyprus to her kings and

cities picks up again in Ovid's imaginations of Aphrodite's personified city of Amathus, and in the geographic treatises of Greek and Roman writers, which only listed known coastal centers.

These etic representations of Cyprus' landscapes both complement and challenge those found on Cyprus in epigraphic or iconographic form, or those inferred from fragments of local epic. If the *Kypria* epic cycles were a local variant that celebrated the island's role in the wanderings of Trojan heroes, and intentionally connected Cypriots to the Greek world, they perhaps also identified their island as a stopping point, out in the middle of the sea.[285] It is more difficult to parse how the inhabitants of Cyprus – of diverse social groups and identities - may have imagined their own landscapes, or created representational (lived) spaces that "overlay[ed] physical space, making symbolic use of its objects" (Lefebvre 1991: 39). The bronze tablet of Idalion centers on the king and his city, who offer productive land to one family, for assumed posterity. Yet the descriptions of Idalion's territory in this proclamation go beyond the city to the fields and plots that supported it, suggesting a more textured understanding – at least as far as that administration – of political landscapes, in which land can be parceled from one person to another based on action performed for the polity. In a similar way, the ships engraved along the most outward-facing wall of the temple at Kition indicate a conception of spatial territory that goes beyond the city walls to the sea, which brought goods and people to the island, but also separated it from its neighbors (Helms 1988; Leriou 2011).

These diachronic trends in imagining ancient Cyprus help to rethink the ways in which scholars have conceived of the Iron Age and the practices involved in polity-formation. As discussed in **chapters 1** and **2**, the focal points of cities and kings have been integral to current understandings of the distribution of polities and their territories, as well as the processes of their

[285] On insularity and identity see Knapp 2008.

development. Due to the primacy of Greek and Neo-Assyrian sources in these interpretations, the clear emphasis in ancient thought on Cyprus' copper resources has made that object and its industry the prime driver of the Iron Age economy (e.g. Iacovou 2013b). Similarly, the weight attributed to cities built by Greek (or Phoenician) kings in ancient sources, especially in Neo-Assyrian inscriptions, have had outsized impact in how scholars approach the mechanics that produced polities. It is therefore worth acknowledging that the extant representations of Cyprus examined in this chapter were actively engaged in ancient spatial imaginations of the world, in creating distinctions between "us" and "them," and these representations preserve how certain ancient groups thought Cypriot landscapes "ought-to" exist as opposed to how they could or did; our scholarly interpretations must take care not to reconstruct the making of 1st-millennium BCE polities only via imaginations.

Chapter 8

Conclusions: Unruly Landscapes

In Shakespeare's drama *Othello* (ca. 1602), he narrates the disastrous and tragic entanglements of Othello, Iago, and Desdemona, which take place during the rise of the Venetian empire. Much of the action occurs at a military encampment on Cyprus. Depicted as the island of the goddess Venus, Cyprus provides a metaphoric landscape of love and seduction in which Shakespeare's characters play out their horrid downfalls (2.1.204-206). Cyprus is also, however, a place distant from the order and rules of Venice; an antithesis of the west. It is unruly, a non-Christian and exotic land too close to the Turks, at least from the Venetian perspective, and too ready for conflict: "a town of war, /Yet wild, the people's hearts brimful of fear" (2.3.194-195).[286] Shakespeare employs a continuing list of drunken brawls, wife abuse, fights, and Othello's and Iago's final conflicts to dramatize Cyprus as a setting of disorder, violence, and instability. Even Othello himself, the tragic Moor-identifying-as-Venetian, caught between and outside of both worlds, distances himself from the barbaric Cypriots (2.3.182-184).

Shakespeare's positioning of Cyprus as an 'other' is of course embedded within the contemporary 16th/17th c. world, and references a new Mediterranean network of city-states and imperial frontiers re-mapping the Middle Sea. His audience would have likely known about the island's recent usurpation by the antagonist Turks, from the control of Venice itself, in 1572. Yet this representation follows closely the sort of paradoxical placement that Cyprus has held in others' imaginations since antiquity, explored in **chapter 7**: an exotic yet not entirely uncivilized island, a place perhaps suitable for the imperial ventures of neighboring powers, but equally

[286] See B.M. Henry-Offor (2007) *The Paradoxes of Intimacy in Early Modern Drama*, Unpublished PhD Dissertation, The City University of New York, 96-98; V.M. Vaughan (1994), Othello: *A Contextual History*, Cambridge: Cambridge University Press, 22.

marked by an inherent need for order and civility. These visions of Cyprus raise questions about certain contradictions in our understanding of political institution in the early 1st millennium BCE. For an island with evidence of long-term hereditary kingship, argued to have extended from the Bronze Age to the 4th c. BCE, why do we know so little about what the king actually did, how he ruled, and who his subjects were? If these territorial kingdoms were, as presumed, linked in some network of competition for resources, such as copper, why have scholars stressed their homogeneity and their apparently singular model for rule and authority?

In this work I have framed the landscapes of Cyprus as unruly in order to interrogate what we mean by rule and authority during the Iron Age, with its meager archaeological and historic records, and to challenge our existing conceptions of the Cypriot king and his polity. To undertake what is at its heart a disassembling of our notions of the Cypriot polity, I have sought to understand the island's unruly landscapes, its rapid variations in landscape and climate, which I argue provide an interesting and important framework for examining the developments of Iron Age complexity through the lens of changing human-environment relationships and non-urban transformation. While current research has long focused on the Cypriot city and its kings, I have attended to a more grounded archaeology of the early 1st millennium BCE on Cyprus by re-figuring the questions, to examine the spaces and landscapes that actively shaped, and were shaped by, the formation of new polities. In this dissertation I have thus tried to account for the ways in which, during the dynamic early 1st millennium BCE, the emergence of new authorities on Cyprus belonged as much to the making of the countryside, to the creation of villages, fields, and mines, as it did to the (still poorly known) architectonic practices linked to the city and its *basileus*. In what follows I reconsider briefly how the making of these landscapes might have taken shape, and summarize the broader impact and future directions of this project.

Re-emplacing the Cypriot Iron Age

I have also proposed that Iron Age Cyprus is an unruly scholarly subject because it has proven difficult to compress within our traditional categories of Mediterranean archaeology. On the one hand, scholars have viewed it as one of the principal destinations for migrating Greeks after the 12th c. BCE, whose language became dominant on the island and whose ideas of kingship, embodied by the *wanax*, transformed the political institutions into the kingdoms later "discovered" and engraved as imperial subjects by Sargon II. On the other hand, Cyprus has so far existed outside the purview of studies on the rising 1st millennium BCE world. As Anthony Snodgrass (1988: 5) remarked nearly 30 years ago, classical historians were treating ancient Cyprus as a "backwater, away from the main currents of history in the millennium which the classical sources illuminate for us, occasionally touched by those currents but never initiating them." It is arguably fair to say that that claim still holds true today, when studies of Cypriot polities remain largely cloistered within the field of Cypriot archaeology. This, despite the occasional recognition of Cyprus' role as a principal venue where Greek, Phoenician, and Near Eastern worlds encountered and engaged with one another, and a likely source by which Near Eastern ideas entered the Greek world (e.g. West 1997).

In confronting this sort of paradox, of an island with early and impactful Greek presence and yet one mostly peripheral to the development of the Greek world, I have taken an approach that moves beyond the enigmatic Cypriot city to focus instead on the non-urban landscapes that forged and were forged by the dynamic transformations of the 1st millennium BCE. This re-emplacing did not intend to dissociate our study of the Cypriot Iron Age from the important excavated sites and necropoleis around the island, but to complement those material records with the far less documented, and certainly less understood, narrative of shifting landscapes and

environments. The methodology required for directing our focus to these places is, at present, conclusively linked with the history of regional survey on the island. Working with survey material is unfortunately difficult, and these concerns are compounded considerably when comparing regional surveys conducted at different times and under very different conditions and parameters. Nevertheless, my efforts to compare regional survey data, as well as to re-survey selected sites, have provided a dataset with which to explore local and regional patterns. My "front-to-back" work also exemplifies the power of returning to previous assemblages, long stored away in *apothekai* or museums, to gain access to the archaeological record in lieu of excavations.

There are several contributions that this dissertation makes, first to the study of Iron Age political formation, and second to the practice of an integrative, interdisciplinary methodology that plunges headfirst into diverse methods to examine landscapes and environments together. I also intended this dissertation to begin what Shannon Dawdy (2009: 141; see also Hardesty 2007) has suggested as a "problem-oriented" archaeology of the environment, one geared toward questions of climate and human sustainability that have relevance to modernity's struggles with environmental change. More locally, my project will have an impact in the field of Iron Age Cypriot studies, by providing data and interpretations on an otherwise understudied region and several conclusions, some on firmer ground than others.

Most fundamentally, the recovered survey data, joined with models of settlement placement and population, have recuperated the Vasilikos and Maroni region of Cyprus from its position as a blank border on the edge of an Iron Age city. Although the evidence for the 11th-early 9th c. BCE is still meager, I have identified a strong indication of a rising late 9th-early 8th c. system of settlement and land exploitation that defies our current categorizations of Cypriot

territoriality centered on the city. And while the VVP and the MVASP surveys are by no means comparable in terms of raw data, my re-analysis suggests the local re-engineering of the landscape, marked by groups that both reoccupied spaces of prehistoric settlement as well as carved out new ones for seemingly distinct social and ritual practices. The wide variety of Iron Age assemblages, in locations throughout the river valley, suggests a complex system of land use and practice that involved possible industrial activity near the Kalavasos mines as well as agricultural and probable pastoral economies along the side drainages. A new mortuary landscape, marked by cemeteries on high ridges away from settlements, may have exploited intervisible terraces to communicate new social boundaries linked both to the outside world of Mediterranean trade as well as to a more local imagination of mortuary places and community interaction. Conversely, the re-occupation of areas around the copper mines, and the clustering of material near natural communication and access routes, suggests that certain resources held diachronic interest to groups building up a new countryside. The creation of at least one local *temenos* on the coastal plain in the ruins of Maroni *Vournes* highlights the desire by the 8th c. BCE for a gathering place for cult practice.

The assumption that this area was a metal-rich hinterland of the city of Amathus has, until now, directed scholarly attention away from the region's internal dynamics in site location and landscape practice to the cities to either side, Amathus and Kition. In this view, the Vasilikos and Maroni valleys are a border (enhanced by the extra-urban sanctuary at Vavla *Kapsalaes*) designated primarily by the absence of an urban center, and more importantly, by the abandonment and further neglect of its primary Late Bronze Age centers at Kalavasos *Ayios Dhimitrios* and Maroni *Vournes*. This sort of argument from absence has, I believe, stunted our conversations of the potency of rural or non-urban place-making for the emergence of the polity.

By taking a multiscalar spatial approach to survey material, I have instead shown the quite dramatic beginnings of permanent occupations and integration of groups within the landscape. The on-going study of the ceramics from this region, by Anna Georgiadou, will hopefully shed light on the relationships in ceramic production and consumption between this region and that of Amathus, where most of the material seems to originate or orient itself.

The environmental record created from charcoal, while requiring further chronological precision, has also supported a broad shift to wetter conditions around the time that comparative survey evidence points to a growing permanence during the 1st millennium BCE, becoming most visible by the mid-8th century BCE. The available evidence, drawn from a wide diachronic as well as geographical range, provides a long-term sketch of century-scale changes in eastern Mediterranean climate, and constitutes an important first step for creating a locally-based paleoclimatic record for Cyprus. These shifts between wet and dry, as explored in **chapter 4**, support other well-known proxies for the late 2nd millennium – 1st millennium BCE transition, and provide a critical context for questioning why communities were putting efforts into managing water systems, exploiting more marginal fields, and possibly using expanding pine forests to furnish a new era of copper mining.

I have also detected, at this necessarily coarse resolution, changing landscape configurations both across the island of Cyprus, along its southern and western coasts and inland foothills, as well as beyond, in two truncated comparative studies of east Crete and the southern Levant. What is most striking is the lack of a "homogenous" character of post-Bronze Age landscape mutations, but instead several types of signatures that I argue reveal the complicated, and not straightforward, ways in which humans respond to environmental shifts. In taking just the (admittedly rough) example of the Amathusian hinterland's survey data with that of the

Vasilikos and Maroni region, explored in **chapter 6**, I suggest that perhaps, groups were shaping landscapes under the operation of different mechanics, contingent with local experiences.

Moving outside the city to the less studied areas between emerging political orders provides a perspective that does not automatically anticipate the impact of a central authority on a passive hinterland, but instead works from the bottom up to explore how the production of rural landscapes contributes to growth in complexity. Rather than assuming that new social and political forms originate in the abandonment or re-appropriation of urban centers, the available evidence suggests an alternate development that involved as much local integration with resources as it did external connections. This approach reveals what Carrie Hritz (2013) has called the "rural messiness" that begins to break down our neat divides between what is urban, and what is not. For Cyprus, the historic privileging of city-kings has tended to depict this dichotomy as implicit, but detailed investigations in the Vasilikos and Maroni valleys suggest that these categories are less clear than our textual sources may imagine.

Future directions

"In short, a fine-grained landscape archaeology for the Early Iron Age is needed here to complement the evolving one for the latter part of the Cypriote Bronze Age." (Rupp 2001: 138)

The signature landscapes explored in **chapters 5 and 6** in the Vasilikos and Maroni region have provided a gross measure of early 1st-millennium BCE responses to shifting climatic conditions. At the level of broad regional survey patterns and century-scale climatic changes, a one-to-one correlation between "favorable climates" and apparent growth in population and permanent living practices might seem appropriate for causal explanations about polity-formation, complexity, and the emergence of new social orders. Yet, as David Rupp noted over a decade ago, our analyses of the Iron Age landscape have remained at this macro-scale, and they run the risk of sustaining broad generalizations about society and climate writ large, rather than

exploring the intricacies of contingent landscape experiences and imaginations. In other words, a more "fine-grained" landscape archaeology of Iron Age Cyprus must entail the use of different methods of excavation, remote sensing, archaeometric analyses, and material studies that can retract our gaze from its current birds-eye view to a more intimate examination of lived spaces.

The next stage of this project will therefore undertake detailed and multiscalar investigations of actual rural settlements. While the methodology of longitudinal survey that I have explored has been invaluable for reclaiming data from earlier projects, new excavations can complement our rough resolution of surface assemblages with a deeper understanding of settlement and land use history, so that we can speak not of multi-century long changes, but of generational trends. Excavations of sites would also provide critical information on daily practice, subsistence, and local economy that have proven revelatory for exploring rural practices in other regions and periods. In my survey work I have identified a selection of sites for future investigation that offer a range of cases for exploring these types of lived spaces, including assemblages connected to coastal harbors, those indicating a close relationship with agropastoral practices such as animal husbandry, and those with evidence for the creation of attachments to the landscape via mortuary and ritual practice.

Although this case study concerns two river valleys on Cyprus, these methods highlight the possibilities of an integrative approach that combines multiple sources of evidence, and offers several opportunities for studying Iron Age transformations at local and broader interregional scales. Taking this integrated approach and complementing it with excavations would create space for comparative syntheses of the Iron Age, to expand out from Cyprus to explore the intersections between shifting climatic and ecological conditions and increasing complexity in places like the Aegean, Anatolia, and the central and western Mediterranean, as

briefly explored in **chapter 6**. This conceptual widening would interrogate how the production of new polities was related both to locally contingent practices as well as interregional trends.

I believe we also need to develop what might be called an archaeology of sustainability, not just from the archaeological record, but also from representations of lived space (Lefebvre 1991). If we return to the words of Strabo (14.6.5) about Cyprus and his claims of sufficient productivity for the island's crops, we might begin to excavate a history of Greek and broader Mediterranean thought on what it meant to sustain livelihoods in the landscape. Take the 5th c. BCE inscription on a bronze tablet from Idalion, for example, discussed in **chapter 7**: how did the preservation of property – extended to Onasilos and his sons 'for generations, forever' – align with contemporary imaginations of sustainable land, and how did they shore up the sovereignty of the king and his city? That is, how did a landscape of imagined posterity, and defined by an agreement between king and subject, perpetuate both the notions of the king's property as well as the community's ideas about the future of their plots, fields, and watersheds? This type of inquiry would help us move beyond the macro-level of climate and society to the lived practices and complicated dynamics that created the conditions for differentiated human-environment relationships in the ancient world. It would not just mine our textual and iconographic records for evidence of climate anomalies, for example, but question the representations of environments within the ordering of social and political practice.

It is toward these directions that investigations will turn, using the methods of survey, archaeological excavation, and archaeometry to examine the transformations across the Mediterranean, as well as to return and to reconsider the arguments put forth in this dissertation. These future excursions into the study of Cypriot and broader Mediterranean landscapes will also, importantly, contribute to the more critical questions driving research on the development

of political institutions, as well as to topics more pertinent to a 21st c. archaeology, at the intersections between climatic and social change. In re-placing Cyprus at the center of these inquiries, I think we will find that not only was the island not just a "backwater" to the transformations of the Iron Age, nor a place of only cities and kings, but an island of unruly landscapes and sudden changes.

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