Seascape Dialogues

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Human sea interaction in the Aegean from Late Neolithic to Late Bronze Age

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Abstract
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This thesis examines human-sea interaction based on embodied and embedded action in the littoral and island regions of the Aegean from Late Neolithic (4800 BCE) to the end of Late Bronze Age I (1600 BCE). Fundamental to this approach is the concept of seascapes, defined here as a place or agent created by a human mind set. To facilitate the investigation, analysis focuses on embodied action, divided between spatial analysis, the consumption of seafood, the utilisation of marine faunal remains in material culture and the iconographic rendering of marine and maritime matters. Through GIS analysis it is determined that 'coastality' – the spatial relationship between locales and the coast – was temporally variable and related to network interaction. Coastality appears to have been a fundamental prerequisite for the formation of seascapes, though the formation of seascapes was not an inevitable outcome of coastality. Uneven recovery practices in excavations impacted the marine faunal record, though higher marine consumption wasrecognised on Crete from the end of the prepalatial period onwards, due in part to the greater recovery of ecofactual data on the island. Marine shell found a wide utility in the prehistoric Aegean, but cluster in the LN-EB III periods. Exceptions include the production of murex dye in the southern Aegean in MBA-LBA and the use of triton shells in cult places in MBA–LBA Crete. Iconographic representation of the sea was geographically restricted – almost entirely absent from the Greek mainland – and had particular chronological and thematic focuses. These included seafaring in the Cyclades and Saronic Gulf, as well as marine fauna scenes onwards from mid-EBA Cyclades and Crete. Such representations were metarepresentations of the sea, prompted by sustained, long-term interaction with the sea. This is particularly evident in the case of Crete, where marine themes became enmeshed in an archaeologically visible syntax of cult paraphernalia and practices. Seascapes were created under specific conditions according to local circumstances and choices. They were not expressed in a uniform manner through time and space and were not an inevitable outcome of living in an area with relative ease of access to the sea.

Keywords: Seascapes, Aegean prehistory, Greece, material culture

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"The aim of archaeology must be a reconstruction of historical relations what is commonly and conveniently called the origin and development of the material but what is really the reflexion of processes in the human mind."

Arne Furumark, Mycenaean Pottery. 1, Analysis and classification

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Abbreviations

LN	Late Neolithic
FN	Final Neolithic
EM	Early Minoan
MM	Middle Minoan
LM	Late Minoan
EH	Early Helladic
MH	Middle Helladic
LH	Late Helladic
EC	Early Cycladic
MC	Middle Cycladic
LC	Late Cycladic
EBA	Early Bronze Age
EB	Early Bronze
MBA	Middle Bronze Age
MB	Middle Bronze
LBA	Late Bronze Age
LB	Late Bronze
BCE	Before Common Era

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Dedicated to the memory of Professor Chris Mee

1. Introduction

The significance of the sea to prehistoric Aegean communities has not been explored systematically. Despite this, there are several assumptions on the past reliance of people on the sea preserved in the archaeological literature in several influential works. John Pendlebury suggested that the sea played a large part in Minoan life.[1] For Colin Renfrew, the sea was the space through which island communities conducted trade, communication, and piracy.[2] For Robin Barber, the island communities of the Cyclades were intrinsically people of the sea.[3] Such statements have rarely been backed up with any analysis of this relationship. There are a few striking exceptions, for example, Emily Vermeule who gives more thought to embodied interaction with the sea and the practical considerations of seafaring, while Bogdan Rutkowski, through marine iconographic motifs on Crete, suggested that the sea may have been sacred.[4] Other commentators omit the sea almost entirely.[5] In contrast to the growing understanding of the significant contribution of landscapes to human behaviour, the general impression of human-sea interaction in Aegean prehistory is that of a functional relationship. The sea is conceived as a passive space, with which communities were forced to interact due to the dominance of the environment as a driver of behaviour. The status of "maritime hub" is ascribed to settlements not immediately beside the coast based on little more than later comprehensions of trade routes.[6] The problem is that the role of the sea in Aegean society has been assumed to be significant (or otherwise) without demonstration.

Recent research has begun to reframe the nature of investigation, challenging the view of the sea as a passive space in Aegean prehistory. Building upon *An Island Archaeology of the Early Cyclades*,[7] the concept of the seascape

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[1] Pendlebury 1965, 271.
[2] Renfrew 1972, 262–264.
[3] Barber 1987, 18.
[4] Vermeule 1972, 54; Rutkowski 1972, 245.
[5] For example, there is no substantial discourse on seascapes in *The Aegean Bronze Age* (Dickinson 1994), *The Cambridge companion to the Aegean Bronze Age* (Shelmerdine 2008), or *The Oxford handbook of the Aegean Bronze Age* (Cline 2010).
[6] Marangou *et al.* 2006, 257.
[7] Broodbank 2000.

was gradually introduced into the narrative of Aegean prehistory.[8] These studies, though covering important ground, have not tested these findings on large scale geographical areas or datasets, focusing instead on case studies, discrete geographical regions and limited time-periods. Recent years have also seen an increase in maritime network analyses undertaken more generally,[9] as well as in Aegean prehistory.[10] Cultural attitudes to the sea, however, have often taken a backseat to the determination of networks of shared material culture or contact.[11] While correctly highlighting the significance of space as an analytical unit and the importance of establishing contact networks based on material culture, the focus has been placed more on mathematically derived variables, reducing the social element of ancient society to a role within the black box of archaeology. What is required therefore is an analysis addressing multiple subsets of data with a focus on cultural attitudes towards the sea over the long term across geographical space in the Aegean.

1.1. Research aims and questions

The aim of this study is to reach an understanding of prehistoric Aegean human-sea interaction with reference to seascapes, intensity of engagement and change over time. The study seeks to provide a more comprehensive understanding of human-sea interaction from a spatial and temporal standpoint, as well as to unravel the significance of the sea to local identity in prehistoric Aegean cultures, testing the seascape perspective against published archaeological data.

The objectives of the endeavour are three. First, to reconstruct patterns of human-sea interaction on a macro, regional, and micro scale in the Aegean region. Secondly, an interrogation of diachronic fluctuations in engagement intensity to determine when interaction with the sea was more prevalent. Finally, the linking of these patterns to performative actions centred on the human body is explored together with the role the sea played in the conduct of daily life and, if possible, the metaphysical importance of the sea as a place of imbued significance. The reasoning behind the implementation of this study is the often uncritical assumption of the significance of the sea in prehistoric periods and a wish to balance already existing research on trade via the sea as

[8] Vavouranakis 2011a; Berg 2007; 2013; Mylona 2020.
[9] Knappett 2013; Brughmans *et al*. 2016; Leidwanger & Knappett 2018; Mills 2018, 238–256.
[10] Tartaron 2013; Knappett & Hilditch 2015, 199–209; Knappett & Ichim 2017, 399–412; Tartaron 2018, 61–92; Knappett 2018, 974–995.
[11] For example, despite arguing to include a "gravitation" or a balance of social forces, into an analysis of maritime interaction in the MBA Aegean, the significance of the sea as a space for society as reconstructed through the material culture, was not a part of this "gravitation". Knappett *et al*. 2008, 1009.

a proxy for inter-regional networks.[12] There are good reasons to suspect that the sea was more than a carrier of goods and people.

The main question examined in this study is how humans interacted with the sea and how significant the sea was to cultural expressions in the LN–LB I Aegean. Sub-questions include if there were any specific time periods or places where interaction with the sea was particularly intense, if there are regional variations in how LN–LB I communities interacted with the sea in a physical sense, and if island communities were more prone to such interaction than mainland coastal communities.

The elaboration and formulation of seascapes as an avenue of research mean that a systematic overview of human-sea interaction in the Aegean has been overdue. With the implementation of the research questions listed above, this study aims to fill this *lacuna*. The large area and long-term focus offers new possibilities for comparisons, hitherto unprecedented in the region.

1.2. Contextualizing Seascapes

This section introduces the seascape perspective in archaeology, before a review of its application in Aegean prehistory.[13] The *Oxford English Dictionary* defines a seascape as a "picture of the sea, a sea-piece or a picturesque view or prospect of the sea".[14] Anthropologically, a seascape is something experienced and given meaning, providing a spatial frame of reference and opportunity for integration into lifeways, including sustenance, ideology, interaction and cognition. As seascapes are subjective, there are a plurality of definitions in academic literature. Gabriel Cooney defines a seascape as a place "…contoured, alive, rich in ecological diversity and in cosmological and religious significance and ambiguity."[15] For Ian McNiven seascapes "…are defined by cosmologies that frame and constrain perception, engagement and use of the seas.",[16] for Georgios Vavourankis it is "…a textured and knowledgeable place that facilitates a specific way of life".[17] My definition is that a seascape is a constructed cognitive place consisting of the physical sea and the coastal zone encompassing the range of practices undertaken by human agents with

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[12] Berg 2007, 397; von Ruden 2015, 57.

[13] In this study, the interaction between humans and the seascape is referred to as seascape-dialogues, a dialogue between place and agents. It also refers to a seascape perspective, which is the collective research agenda focusing on the investigation of human interaction with the sea. I avoid describing the seascape perspective as a unified theory. It offers an alternative viewpoint, building on issues of agency, phenomenology, embodiment and, as argued below, material engagement.

[14] OED2, 1989.

[15] Cooney 2003b, 323.

[16] McNiven 2004, 332.

[17] Vavouranakis 2011b, 22.

or within this place. Just as landscapes are essential to the formation of behaviour and identity, so seascapes may be for maritime peoples, for whom the sea may become a treasured place, imbued with memories, deep knowledge and symbolic meaning.[18] This place can be a structuring agent, shaping group perception if there is inter-subjective investment by communities into seascapes. A seascape contains past traces of human-sea interaction, which for the purposes of this study includes the spatial configuration of settlements and burial grounds in relation to the sea, evidence for seafood consumption, objects and materials formed from marine resources and the iconographic representation of marine scenes.[19] As seascapes are constructed, this means that there is rarely ever one solitary seascape. The significance and meaning of the sea as space can be renegotiated and the methods of interacting with this space can generate a plurality of seascapes, which can be altered over both space and time as different communities interact with the sea. With seascapes defined, we now turn to how these ideas have been incorporated into archaeological research.

1.2.1. Seascape research outside the Aegean

Research on seascapes, hereafter termed 'seascape perspective', is currently one of the dominant interrogative devices for research in maritime culture.[20] Its primary concern is to redress the imbalance in emphasis on landscape, which has encouraged interpretation of the sea as a vacant space between lands, bereft of significance, save as a medium through which people trade and move.[21] The development of the seascape perspective has been informed by several sub-fields of archaeological theory, including landscape archaeology, maritime archaeology and island archaeology.[22]

The debate at the core of the seascape perspective has been whether the sea can be conceptualised as a barrier and whether insularity is environmentally determined or culture specific. The New Archaeology focus on landscape analysis and subsystems of culture, isolated landscapes and the environment as non-cultural phenomena and interpreted them as prime motivators for human behaviour.[23] Ethnography along with landscape use was used to generate

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[18] For an investigation of these connections in the "Saltwater" peoples of northern Australia, see McNiven 2008, 149.
[19] There is a range of other actions that could be enacted through a seascape, such as exchange, migration and raiding. While these activities take place within seascapes, they are excluded from the framework of this study as they have received considerable treatment elsewhere but remain connected through seascapes.
[20] Vavouranakis 2011a; Cooney 2003a; McNiven 2008.
[21] Berg 2010, 16.
[22] Articles from the recent issue of the *Journal of Eastern Mediterranean Archaeology and Heritage Studies* focusing on seascapes (2020) unfortunately came too late be considered here.
[23] Renfrew & Bahn 1991, 411; Flannery 1967, 120.

cross-cultural generalisations of how humans adapt to environments, with the implication that humans will respond to similar landscape stimuli in the same way, making human culture environmentally determined.[24] This debate was central to the anthropological concept of insularity, "the state of condition of being an island or lack of contact with other people".[25] This anthropological insularity was borrowed in archaeological discourse of island societies, where islands were perceived as perfect "laboratories" for the study of culture, as closed and bounded entities.[26] The sea, as part of an environment, was a barrier that shaped human behaviour. [27]

In reaction, postprocessual commentators argued that previous research considered landscape divorced from human action, instead arguing that it was socially produced and centred on human agency.[28] The key development was the deconstruction of landscape into space and place, with space being neutral and meaningless, but having the potential to be transformed into place through the meaning given to it by humans.[29] These places, it was argued, played a crucial role in social reproduction and are known through common experience, symbols and meanings, having environmental agency,[30] though not intentional agency which necessitates sentience.[31] This had profound implications for the study of island and maritime communities, which has led island archaeological narratives to turn their backs on the insular, environmentally deterministic standpoint in favour of a more agency-centred perspective. This has ultimately led to the creation of the concept of islandscapes, a single interconnected unit consisting of sea, land and islands, each in concert with each other.[32] However, there have been warnings that geographical isolation has

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[24] Tilley 1994, 10.
[25] OED 1989; Vayda & Rappaport 1979, 6.
[26] Mead 1957; Evans 1973; Fosberg 1963; Sahlins 1957.
[27] Evans 1973; Clark & Terrell 1978; Kirch 1980a, 1980b; Renfrew & Wagstaff 1982. For a more in-depth overview, see Berg 2010. Here, the sea was an obstacle to human agency, leading to adaptations and eccentric developments in local culture. Early island archaeology went hand-in-hand with regional landscape survey projects, notably as individual islands formed discrete units for study, bounded on all sides by the sea. These studies focused exclusively on land, while the sea was relegated to a barrier and division between islands, despite islands being an interconnected hybrid of land and sea. For critique, see Rainbird 1999.
[28] Tilley 1994, 9.
[29] Tuan 1977, 3. See further Chapter 2, this volume.
[30] Tilley 1994, 18; Giddens 1984. Environmental agency has been heavily debated and Strang (2014, esp. 138–140) provides a fantastic overview of all of the key positions with specific reference to water.
[31] Ancient commentators attribute the sea with the agency to change, while others attributed it a human sentience. See for example the various colours/qualities attributed to the sea, such as 'οἶνοψ' or 'οἰνοπα' (wine-eyed/wine-coloured: Hom. *Il*. 2.610-4), 'μαρμαρέην' (shimmering: Hom. *Il*. 14.270–75), 'δῖαν' (bright: Hom. *Il*. 14.75–78) 'πολιῆς' (grey: Hom. *Il*. 1.345) 'μείλανι' (dark: Hom. *Il*. 24.75–80) and the range of names used to describe the sea in Homer: 'θάλασσα', 'πέλαγος', 'πόντος' and 'ἅλς'. See also Simonides (7.27–8) on the 'two-faces' of the sea: "τήν δ' ἐκ θαλάσσης, ἡ δύ' ἐν φρεσίν νοεί…".
[32] Broodbank 2000, 21; Anderson 2004, 254; Rainbird 2007.

been downplayed unduly and that there is a risk of uncritically exchanging the environmental determinism paradigm for a socially determinist paradigm.[33] Ultimately, analysis needs to take into account the island context, time and the society in question.[34]

Research on human-sea interaction has consistently followed two divergent approaches, highlighting the lack of an inherent conceptual focus. On the one hand, scholars have focused on the investigation of trade, contact, boats, shipwrecks and nautical technology,[35] while others sought to attain an understanding of maritime landscapes and what they meant to those who interacted with them.[36] Ultimately, this has led to the question of whether the sea should be viewed as a meaningless space or meaningful place. Important early work centred on the concept of the "maritime cultural landscape", which was defined as the cognitive map of the functional aspects of maritime spaces.[37] The focus, however, on the functional aspects of maritime interaction belied a systemic view of the past, where the sea was another practical space to transform. The investigation of maritime interaction as a functional activity isolated this aspect of culture from other parts.[38] Missing was an appreciation that the sea could be inscribed with deeper social meaning, though the approach shifted the debate towards the sea.[39] Along with postprocessual narratives came the first formulation of the term seascape into archaeological research. Chris Gosden and Christina Pavlides argued that space (in this case the sea) and society are mutually constitutive and human action and collective attitudes could imbue the sea with meaning.[40]

The seascape perspective entered into the mainstream of academia in the early 2000s and a growing corpus of research has treated the sea as a meaningful space that played a significant role in the formation and maintenance of

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[33] Anderson 2004, 255.
[34] Dawson 2005, 56.
[35] Laffineur & Basch 1991; Swiny, Hohfelder & Swiny 1997; There were, however, some exceptions, notably Crowley (1991, 219–230) and Laffineur (1991, 231–238) addressing sea iconography in *Thalassa* and Knapp (1997, 153–162) article in *Res Maritimae*, considering maritime landscapes.
[36] To list a few: Westerdahl 1978; 1992; 2011; McNiven & Wright 2013, 133–148; Szabò *et al*. 2013, 149–170; Martinsson-Wallin 2013, 171–184; Wallin & Martinsson-Wallin 2007, 83–89.
[37] Westerdahl 1992.
[38] Hunter 1994.
[39] Vavouranakis 2011b, 18.
[40] Gosden & Pavlides 1994, 163.

shared identity.[41] Since then it has become a perceptible sub-discipline of landscape and maritime archaeologies.[42]

From the seascape perspective, it is clear that there is a range of ways that humans can interact with the sea, some of which can be determined through archaeological investigation. Central to this has been a shift in perspective towards the prioritisation of the human body and embodied action.[43] This approach has led to the study of maritime resource interaction, such as fishing and connected activities,[44] but also ritual orchestration through architecture and material culture.[45] Other work has shifted the focus towards metaphysical aspects of seascapes where the sea could be socialised and imbued with anthropomorphic features.[46] Seascapes have also been posited as agents of culture change.[47]

Though there have been the beginnings of seascape-focused studies into various new territories such as historical Greece,[48] Cyprus[49] and western Europe,[50] the seascape perspective has rarely been applied to prehistoric Mediterranean material assemblages, with the theoretical focus centred on Oceania.

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[41] Various aspects of seascapes weere the subject of an entire issue of *World Archaeology* in 2003 (Cooney 2003a). For earlier seascape research, see Cordell (1989, 1): "The sea is blanketed with history and imbued with names, myths and legends". Gosden & Pavlides 1994; Jackson 1995.

[42] See for example Part IV on "Maritime Culture and Life Ashore" in the *Oxford Handbook of Maritime Archaeology* (Ford *et al*. 2011) and selected contributions to the *Handbook of Landscape Archaeology* (David & Thomas 2008). See especially McNiven (2008, 149–157) and Strang (2008, 123–130).

[43] For example, Rainbird (2007, 47, 58): "the crux of the distinctiveness of maritime life lies not only in the specific activities, such as fishing, seafaring etc. but in the specific bodily engagement with the sea which entails a certain combination of sensory registers... derived from practical experience in a particular place and time".

[44] O'Connor & Veth 2005; David & Weisler 2006; Crouch *et al*. 2007; Lambrides & Weisler 2016, esp. 279–298.

[45] McNiven 2008, 149. For a more detailed description, see McNiven (2003, 49) on the "spiritscapes" of the northern Australian coast, where "saltwater" people interacted with the seascape through bodily performances, "dreaming cosmologies" and ritual orchestration of seascapes through architecture and material culture.

[46] McNiven 2008.

[47] See Breen & Lane (2003) for the role of seascapes on the Swahili coast of East Africa, which provided innovative ideas, people and developments, as well as being a point of reference for identity and survival. See Ash *et al*. (2010) for the active role seascapes played in the cultural hybridisation of communities in the Torres Islands strait, following the influx of Christian missionaries in the early 20th century.

[48] For example in Constantakopoulou's (2007) excellent analysis of Archaic and Classical Greek connectivity, networks and islandscapes, in a field where seascapes have yet to penetrate effectively.

[49] Work by Knapp (2007, 2010, 2014) has been seminal in the introduction of the concept into Cypriot archaeology.

[50] The theme has also began to permeate the prehistory of western Europe, more generally in Needham (2009, 12–37), though in discrete geographical regions such as Britain (Van de Noort 2003, 412; Phillips 2003, 380) and Ireland (Quinn *et al*. 2019, 44–66; Kujit *et al.* 2011. 51–71).

1.2.2. Seascape research in the Aegean

Generally, the sea was not perceived as a discrete unit of analysis in the Aegean before the introduction of postmodern thought in the investigation of landscapes. Multiple works reference the sea indirectly, such as studies on influence and culture change in Aegean prehistory,[51] nutritional exploitation of the sea,[52] boat technology[53] and iconography.[54] There has also been a focus on thematically related research, such as coastscapes and waterscapes.[55] Here the focus is placed only on those works that make specific reference to the investigation of seascapes in Aegean prehistory.[56]

Following wider discourse, work on maritime and island archaeology has focused on the issue of insularity from both ends of the scale, from the sea as a barrier and constraining human agency,[57] to seafaring as endemic to island cultures.[58] Broodbank's seminal *An Island Archaeology of the Early Cyclades* can be credited for laying the foundations for the introduction of seascape studies into the Aegean,[59] taking the view that insularity in the Aegean was

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[51] For influence and culture change, see Renfrew (1972) for a discussion of social complexity centred on insular communities of the Aegean in the EBA. The focus on Minoanisation and Mycenaeanisation has been intense and sustained, see Hägg & Marinatos 1984 for an overview and see Papagianopoulou 1991 for the material manifestation of Minoan pottery overseas. Academic consensus has now moved past the idea that Minoan communities controlled the southern Aegean, see Mountjoy & Ponting 2000. Note the lack of emphasis on thalassocracy in a recent review of new perspectives in Minoan archaeology: Cappel *et al*. 2015; though see a recent attempt to reinforce the concept: Wiener 2013.

[52] See Chapter 3 for wider discussion.

[53] Discussion of boat technology has been extensive. For early boats, see McGrail 2001, 103–104. For Early Cycladic seafaring, see Broodbank 2000, 99–102 and the wreck at Dokos: Papathanasopoulos *et al*. 1992, 6–23. For later boat technology the various LBA shipwrecks are particularly valuable, Cape Gelidonya: Bass 1967; Uluburun: Pulak 1998; Point Iria: Phelps *et al*. 1999.

[54] Iconography related to the sea but not concerning the seascape perspective has been undertaken by Saunders 2008.

[55] For example, Mycenaean coastscapes (Tartaron 2013). The volume displays a holistic and long-term approach to the investigation of Mycenaean maritime networks, utilising a full range of archaeological evidence to determine how boats and harbours were used in the Mycenaean world, before moving on to the discussion of the case study; Mycenaean harbours in the Saronic Gulf (Tartaron 2013, 9). While not explicitly devoted to seascapes, the focus is placed onto the concept of coastscapes, which stands alongside seascapes as having a concern for the sociocultural and symbolic potential of the sea.

[56] Recent articles by Berg (2020, 287–298) and Vavouranakis (2020, 299–313) on seascapes in Aegean prehistory unfortunately came too late to be considered here.

[57] See Berg (2007, 404) for a convincing deconstruction of geological islands as bounded entities.

[58] Broodbank (1993, 322) was keen to dispel the notion that seafaring was automatically endemic to island life, suggesting a "…richly variegated mosaic of landlubbers and sailors that criss-crosses islands…" for the Aegean. Cf. Barber 1987, 18.

[59] Building on previous research, Broodbank (2000) examined the archaeology of the Cyclades from the LN until the end of the MBA through the lens of island archaeology. He utilised a methodologically mixed approach, integrating archaeological data, ethnographic research and analytical models in his analysis of island practices.

"culturally constructed" and "liable to change".[60] Work on insularity has also highlighted the inherent bias of archaeological research towards islands as discrete units during survey work.[61] The possibility of year-round sailing and sailing capabilities have also been a keenly debated topic, [62] with interpretations ranging from year-round sailing[63] to a more restricted sailing window,[64] with implications for insularity.

With the introduction of a defined seascape approach to the study of maritime culture in the Aegean,[65] research took different avenues. A central theme has been how connections to the sea could be manipulated and deployed as a source of power in social dynamics. The physical act of seafaring has been interpreted as a status-generating venture in the EB IIA Cyclades,[66] while the seascape was interpreted as a medium that fuelled social interaction in the mortuary arena in EBA Crete.[67] The seascape has also been highlighted as a place of bodily power, where actors embodied their connection to the dominant 'international spirit' culture of the EB IIA Aegean,[68] while connections

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[60] Broodbank 2000, 13. A perspective echoed by Berg (2007, 397, 404). Berg saw insularity as a social choice in the Aegean due to the range of technology available in allowing prehistoric people to maintain overseas contact.

[61] Berg 2010, 16–17, 22.

[62] For an overview of Aegean weather patterns, see Tartaron 2013, 91–107. For a discussion of the directionality of prehistoric sailing, see Broodbank 2000, 101–106. For an alternate view, see Berg 2007, 397–399. For an in-depth analysis, see Georgiou 1993.

[63] Berg 2007, 404.

[64] Broodbank 2000, 94.

[65] Georgiadis (2003, 29–31) was the first to incorporate a discussion of prehistoric Aegean seascapes, while the first edited volume exclusively dedicated to the subject was published some years later (Vavouranakis 2011a). The volume was ambitious in its approach, surveying the length and breadth of the Aegean in time and space, as well as in subject matter. In his introduction to the volume, Vavouranakis (2011b) set out a precise definition of what a seascape is and how it has been previously researched. Particularly pertinent is his argument that "a maritime way of life may be the obvious option but not the only option". Prehistoric communities in Vavouranakis' view (2011b, 13–14), could imbue the sea with meaning and could be an active constituent in social interactions.

[66] Broodbank (1989, 323) argued that longboats required large crews, more than most small EB IIA Cycladic settlements could manage. The deployment of longboats, therefore, required cooperation and social organisation and he identified the site of Chalandriani on Syros as a settlement of sufficient size for the use of longboats, which are depicted iconographically in several tombs of the cemetery (Broodbank 1993, 337). See also Broodbank 2000, 256.

[67] For Vavouranakis (2011c, 91–118) the seascape was an active constituent of "sacred geography" in mortuary practices. He argued (2011c, 108) that Cretan communities adopted a sea-centred perception of their world in EM II as a side-effect of "international spirit", though this lessened in EM III after which time communities became more land-focused. Specifically, the seascape was posited as a resource for manipulation and deployment within the context of funerary rites.

[68] For Catapoti (2011, 80–85), the seascape was a place of bodily performance, where agency and selfhood were articulated, generating the "international spirit". She convincingly placed embodiment at the centre of archaeological investigation into sea-centred communities, with material objects interpreted as specific ways of physical performance that complemented the experience of seafaring and the collectively accepted codes of behaviour.

to the sea were argued to have been deployed in the LB IIIC period to promote a sea-focused ideological authority.[69]

Connected is the question of how material culture could be used to reference seascapes. Iconography has been central to this avenue of research, where a preponderance of marine imagery in LM IB Crete has been contrasted with a lack of evidence for contemporary seafood consumption.[70] Through mistakes in their rendering, the same iconographic material has also been used to suggest a lack of knowledge of marine animals and even a possible taboo on their consumption.[71] Conversely, the very same evidence has also been used to suggest a keen interest and knowledgeability of the marine world.[72] Connections to culture change and iconographic representation have also been highlighted, where it has been argued that the seascape was a bridge that allowed Minoan cultural elements to be introduced into Cycladic art through the fresco painting tradition in the Cyclades.[73]

These avenues naturally led to a discussion of how communities perceived the seascapes they engaged with. A preference for seascape-integrated lifeways was argued to be a rejection of the "Neolithic package" and so the cause of the slow spread of farming from Cyprus to Italy via Greece, despite evidence for a contemporary seafaring tradition.[74] The seascape has also been argued to have been a physical boundary marking the liminality of burial grounds as a place between life and death through the seaward-facing orientation of Mycenaean *tholos dromoi* on Rhodes.[75]

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[69] Through Linear B texts, Petrakis (2011, 185–234) examined representations of seascapes and maritime activity in the late Mycenaean palaces, contrasting palatial and post-palatial maritime imagery and concluding that, together with the Linear B records, there was no evidence for palatial control of overseas trade.

[70] Berg (2011, 119–137) focused on the representation of the seascape in LM IB marine style pottery, demonstrating a contrast between the many depictions of a marine world in ceramics and the lack of evidence for seafood in the Minoan diet.

[71] Berg (2013, 13) argued that the marine creatures were not viewed in their natural habitat, instead may have been observed when washed ashore. Importantly, she argued (2013, 13) that the significance in the representation of seascape-related creatures lay not in the choice of the motif, instead of in the broader reference to the seascape. These arguments led her to the conclusion that there may have been a taboo on the consumption of marine food, generated by the perception of the sea as a potentially hostile and ambiguous place (Berg 2013, 20).

[72] von Rüden (2015, 47–57, esp. 57) highlighted Crete as potentially having a more intimate relationship with the sea, when compared to contemporary Egypt or Ugarit.

[73] Younger (2011, 177) focused on the "flotilla fresco" from the West House at Akrotiri and the importance of the visual perception of the world of the artist. He mainly focused on the inclusion of unconventional elements in the fresco, which suggested that the artist adopted the position of a passive onlooker.

[74] Ammerman (2011, 39) suggested that the transmission of the Neolithic slowed down significantly in the Aegean, despite already significant maritime traffic in the region. His interpretation centred on the idea that Mesolithic peoples of the Aegean had a perception of the seascape as an inviting place, a place of sustenance and therefore resisted the adoption of an agricultural and land-based way of living (2011, 42).

[75] Georgiadis 2003, 108.

Resource exploitation as evidence of seascape interaction has also been a fruitful avenue of research, often with a focus on faunal data. The seascape may have been perceived as an inviting, attractive space in the Neolithic Aegean, through an analysis of marine resources at both inland and coastal settlements.[76] By contrast, seafood has also been argued to have played less of a role in diet in the Neolithic than it did in the Mesolithic.[77] The seascape could also be a place of exploitation and used to express social differences between different groups in society in Neopalatial Crete.[78] Similarly for Akrotiri and southern Aegean communities in the Bronze Age, a range of marine food sources belied an engagement with the sea which could provide social and symbolic value.[79] This research theme has also utilised stable isotopic data, deployed to argue that seafood generally played a small role in the prehistoric diet, though could be a component of conspicuous consumption by elite groups.[80]

Equally important, however, is just what has *not* been covered. An analytical focus has rarely been placed on embodied action.[81] Holistic approaches incorporating more than one source of data are essential to determine the character of human-sea interaction.[82] Similarly, although research has touched on a deep and complex topic in the relationship between seascapes and mortuary practices, this has not been explored further.[83] Tatiana Theodoropoulou was

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[76] Theodoropoulou (2011, 51–65) saw the seascape as an attractive place in the Neolithic, based on the zooarchaeological assemblages of various Neolithic northern Aegean communities. In particular highlighting how coastal communities adopted a diverse strategy to exploit marine resources, and those inland communities may have attributed symbolic capital to marine life.

[77] Berg (2013, 2) argued for a significant shift in diet from marine to land-focused from the Mesolithic to the Neolithic and compared this to the iconographic depiction of marine creatures in various media.

[78] For Haysom (2011, 139–160), the seascape was a place that was exploited by some communities and groups of Minoan society in the Neopalatial period, in the form of fish, murex and salt procurement. He argued (2011, 154) that while some Minoans may have had a maritime way of life, the palatial elites had a land-centred view.

[79] Mylona 2020, 207. Mylona (2020, 179–213) focused mostly on resource exploitation, though touched on the topic of seascape interaction particularly with reference to LC I Akrotiri in the Cyclades.

[80] Through a reported lack of seafood remains and a lack of clear marine signatures in isotopic analyses of skeletal data, Berg (2013, 7) argued that marine food sources only made up a small part of the prehistoric diet in island and inland communities. However, she also argued (Berg 2013, 17) that isotopic analysis showed elevated marine signatures in some individuals buried in the Shaft Graves at Mycenae, suggesting seafood consumption as an intentional, conspicuous act.

[81] Catapoti 2011, 85.

[82] This is mostly a result of the infancy of the topic and the fact that most contributions to the subject theme have been short articles in edited volumes. For exceptions see Haysom 2011; Berg 2013.

[83] Vavouranakis 2011c and Georgiadis 2003. There is a fruitful discussion of the role of the sea in Minoan and Mycenaean eschatological belief, see Watrous 1991, 303–304; Marinatos 1993, 231; Saunders 2008, 287 for discussion of the role of the sea in Minoan funerary iconography. See Gallou 2002, 183–184 for the role of the sea in Mycenaean burial practices. These have not

asking the right questions in framing research towards "cultural responses to seascapes", though these have not been followed with subsequent research into their possible varieties.[84] Missing entirely has been consideration of how communities situate themselves in relation to space and few studies have taken a pan-Aegean perspective.[85] A final point can be made about the short-term outlook of many analyses, except for Broodbank's and Tartaron's analysis of the early Cyclades and Mycenaean maritime networks respectively.

To sum up this contextualisation of seascape research both outside and inside Aegean prehistory several salient points can be raised. While there is a plurality of definitions for the term seascape, the focus of this study is placed on human interaction with the sea and the effect it has on society. This necessitates the acknowledgement that seascapes have an affordance or environmental agency,[86] which can shape human cognition. The focus of seascape research has been Oceania, though over the past two decades the concept has been imported into Aegean archaeology. The application of seascape research in the Aegean has been small-scale, temporally restricted and unsystematic, though the research undertaken has laid solid foundations for future analysis. The Aegean is fertile ground for the investigation of seascape interaction due to the presence of vast stretches of coast, island archipelagos and a rich archaeological record stretching back to early prehistory. The benefit of using the seascape perspective is that it offers an alternative perspective to the archaeological narrative of Aegean prehistory and centres research on one of the enduring features of the Aegean region, the sea.

1.3. Seascape Dialogues: a theoretical framework

While the seascape perspective has provided new avenues of research, particularly in the remit of global archaeology, they have largely been guided by historical sources, both textual and oral. For Aegean prehistory, we have no such direct resources to investigate human relations with the sea. Linear B does not provide information on how early Aegean people perceived their world or the sea.[87] We cannot use Homeric tradition uncritically and without caution.[88] What must be done, therefore, is to use archaeology and more specifically, material culture. This section seeks to bridge the divide between a

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been included in the main discussion here as they are not explicitly a study of seascapes, but will be relevant in later chapters.

[84] Theodoropoulou 2011, 62.

[85] Such an approach has been missing in treatment of seascapes in the Aegean, but can be found in Davis 1992, 699–756.

[86] Tilley 2007, 19; Strang 2014, 133–150.

[87] Hooker 1980, 35.

[88] Finlay 1957, 159.

largely intangible seascape perspective and tangible archaeological remains by focusing on the connection between seascapes and cognition.

Material engagement theory (MET) is an increasingly important perspective in cognitive science. It views the mind as embodied, extended and distributed, rather than bounded.[89] The cartesian dualism between mind and body is rejected in favour of the view that cognition is an embodied interaction, in which the world is enacted through the coordination of the individual and its environment.[90] The perspective argues against the idea that embodied action is divorced from its surrounding environment, instead, insisting that the body is a vital part of the way humans think and that material culture plays a role in this process of thinking about the world.[91]

A core feature of the concept of MET is that of embodiment, the transmission of knowledge to action with the help of the nervous system through performativity.[92] Action therefore is not simply a process of the mind, but requires the interaction of the brain, the body, and the surrounding environment. Embodied action, however, is not automatic and is shaped by various factors, such as social convention, transmitted through performance and motor-sensor learning.[93] The automatic somatic knowledge of a person is a result of their specific environment, consistently re-enacted through sensory feedback.[94] Varela *et al.* further define that: "…cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context."[95]

This embodied mind is embedded within an environment, which is both artificial and socially generated. The core tenet of MET is that material objects shape cognition through shaping human activity. The mind is plastic, adapting to its environment through a constant dialectic with objects.[96] Malafouris suggests that the mind/body dichotomy is a fallacy and that they are rather enmeshed with things enabling the redistribution of thought and memory outside

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[89] See Malafouris 2013 for an extensive overview of the background to Neuroscience, Neuroarchaeology and the Material Engagement Theory. See Varela *et al*. 1991 for the origins of the concept. For a discussion of Material Engagement Theory, Neuroscience and the biomechanics of human movement, see Zikidi 2017.
[90] Di Paolo 2009, 12; Varela *et al.* 1991.
[91] Malafouris 2013, 60.
[92] Varela *et al.* 1991, 172–175; Dawson 2014, 59–67; Malafouris 2008a, 1997–1999; Barsalou 2008, 630.
[93] Malafouris 2013, 209.
[94] Varela *et al.* 1991, 172–175; Malafouris 2008, 1997–1999; Dawson 2014; 59–67; Zikidi 2017, 27–28.
[95] Varela *et al*. 1991, 172–173.
[96] Role of artefacts: Renfrew 2001, 2008 For MET see: Malafouris 2015; 2010a; 2010b; 2009; 2008a; 2008b

of the "brain" allowing for the extension of individual cognition into the environment and material culture, a concept termed the "extended human mind".[97] In sum, this process involves the capacity for the nervous system to integrate stimuli (such as interacting with an object) and convert it into motor functions within a specific environment, shaped by socially constructed knowledge.[98] This makes the artefact the carrier of knowledge on how to interact with it in specific contexts, or environments, essentially the material agency or materiality of an object.[99] Artefacts, therefore, extend human cognition towards the environment and material culture.[100] The key here is that socially constructed knowledge reflects the degree to which individuals, groups and communities focus on specific aspects of existence. Material culture, therefore, takes on a primary role in cognition, as humans manufacture things which help them make sense of their world. The everyday objects uncovered by excavation can play a role in determining the relationship between past humans and their engagement with their world through embodied practice.[101]

Thinking also contains a spatial dimension and space can be perceived as a "cognitive artefact".[102] The extra somatic world is part of the cognitive process as much as the individual and material.[103] The relationship between the brain, body and the environment can be defined as "embedment", referring specifically to the integration of the brain/body in a specific environment.[104] This environment can be broadly defined, referring to either social and structural norms, as well as physical environment or its features. There are various modes of interpreting this environment, variably either a system of unconsciously internalised disposition (*hexis*),[105] a space in which the actor is not able to "formulate discursively" within social institutions,[106] or the collectivity of embodied individuals cognitively and emotionally engaged with social worlds.[107] Embedment advocates a focus on how individuals experienced themselves in specific environments through their bodies, which allows for the investigation of culturally specific practices and concepts, on individual and collective levels.[108] Underpinning these interactions, however, is the ability of the individual to re-evaluate their cognitive system conditional to their

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[97] Malafouris 2015; 2004; Renfrew 2008; Stout & Hecht 2015
[98] Zikidi 2017, 32.
[99] Knappet & Malafouris 2008.
[100] Malafouris 2015; Renfrew 2008; Stout & Hecht 2015.
[101] It is particularly helpful that archaeology has long been a field dominated by the collection of "things" (Olsen 2010, 2).
[102] Hutchins 1995; 2005; Kirsch 1995; 1996; Goodwin 2010; Malafouris 2013, 67.
[103] Which Clark & Chalmers (1998, 8) term the "parity principle".
[104] Northoff 2001; 2004, 19–21.
[105] Bourdieu 1977, 72, 87.
[106] Giddens 1979, 57.
[107] Shilling & Mellor 1998, 194.
[108] Moore 1994, 3–4.

physical and social environment, otherwise known as metaplasticity.[109] This socially constructed, shared knowledge is the result of countless exchanges of information between individuals leading to changes in synaptic plasticity.[110] Embodied action, processes and cultural adaptation over long periods of time can cause adaptations in the biochemistry of the human brain.[111] This is central as it means that interacting with different environments (both physical and social) over long periods can cause different social or material responses, which may be traceable in the archaeological record and hence also embodied behaviour. This then means that communal cognition is not cross-cultural, but rather formed of specific environments and social configurations, of which embodied interaction with the sea is one variable.

This brief outline of MET forms the theoretical basis of this study. Its aim lies in "constructing an analytical bridge between brain and culture by putting material culture, embodiment, time and long-term change at centre stage in the study of the mind".[112] The use of MET in this study allows us to rethink and restate old problems and questions from a new perspective.[113] The primary evidence source for this study is material culture. The long time-span chosen is preferable, and a range of diverse archaeological assemblages allows for the comparison between different communities and long-term processes.

It was highlighted in Chapter 1.2 that the body-centred approach has not been replicated in seascape research and by using MET, one may begin to think about material culture as traces of embodied action (*praxis*).[114] This provides a window into the internal processes of the mind and how this relates to the relationships between agents (mind/body), things (material culture) and environment (space/place). More specifically, it solves a methodological problem previously highlighted, the focus of the seascape perspective towards historical testimony – particularly in Oceania – as a means of investigating seascapes. For prehistory, there are no analogous sources and so, MET allows a glimpse at human-sea interaction in prehistoric cultures and what this may suggest about their relationship.

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[109] Malafouris 2015; Varela *et al.* 1991.

[110] Supported by a wealth of research in Neuroscience, metaplasticity essentially describes the adaptive qualities of the brain, which can be shaped by the actions of the enactor, being subject to constant change throughout life (Wexler 2006; Blakemore 2008; Sowell *et al*. 2003; Ireland *et al*. 2009, 819–826). Metaplastic changes entail a change in the biochemical state of neurons in the brain, which affects the ability to generate synaptic plasticity. The human brain, therefore, has been christened "both an artefact of culture and a cultural artefact" (Mithen & Parsons 2008), as in short, repeated act, ritual and practices cause changes in the functioning of the brain.

[111] Malafouris 2009; 2010.

[112] Malafouris 2010, 49.

[113] Malafouris 2010, 52.

[114] See for example Catapoti 2011 for an exception.

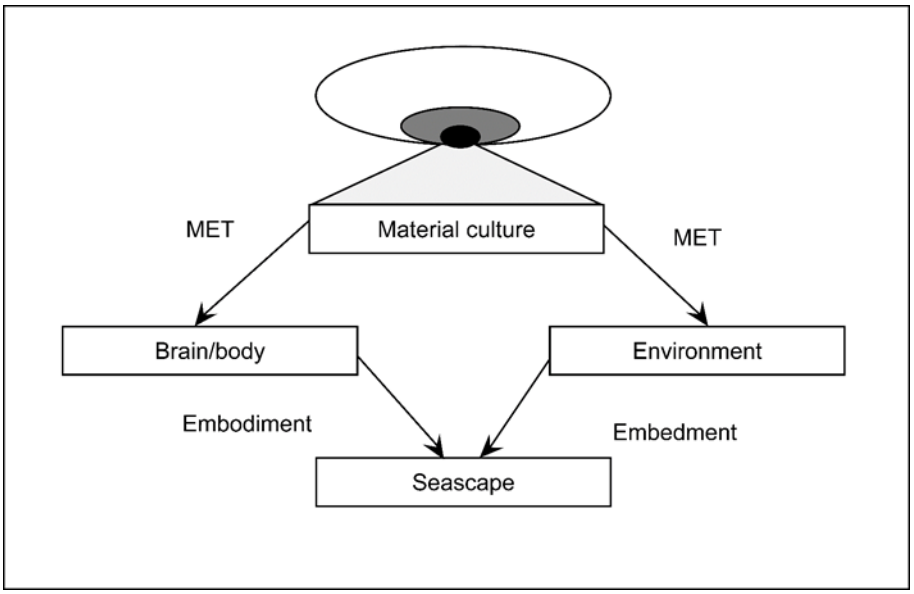

Figure 1.1. Simplified illustration of the theoretical approach of this study.

However, a problem arises in the theorisation of spatiality in the MET approach. Space is a vital component of the extended mind hypothesis and material engagement theory, though its definition within these contexts is vague. For Malafouris, space seems more equated with objects highlighting his material approach. While this approach is of importance, missing is a configuration of space and place in a philosophical sense.[115] The introduction of the concept of 'coastality' in Chapter 2 helps to redress this imbalance, by shifting the focus towards the spatial relationship between humans and the sea. The focus of MET on material objects allows for the investigation of a range of embodied practices from marine food consumption (Chapter 3), the manufacture and use of marine-derived material objects (Chapter 4) and the transmission of social concepts, through metarepresentation into material culture in the form of seascape representation (Chapter 5).

Pulling these disparate threads together, this study takes an integrated approach to human-sea interaction, which I term *Seascape dialogues* (Fig. 1.1). Different categories of material culture are used to get a glimpse of the "extended human mind" or "dialogue" with the seascape. If human activity is situated close to the sea, there is increased potential that the humans could give the sea meaning, converting it from a space to a place, termed here seascape. If material culture gives us a window into the internal processing of the mind, then we should see traces of the cognitive significance of the sea as a

[115] Cf. Malafouris 2013, 60.

place in material culture, if the world outside the thinker is part of the cognitive process, as well as a cognitive artefact.[116] This may be perceptible in material culture and embodied action, for example in the consumption of seafood, the spatial relationship between human action and the sea and finally representation and metarepresentation of the sea. Effectively, increased bodily, social and cognitive interaction with a seascape can lead to metaplastic changes reflected in human behaviour, which may result in increased evidence for human-sea interaction in the archaeological record. For some communities, there may not be such a strong interaction with the sea, in which the sea remains a space, rather than a seascape. As seascapes are meaningful places, this meaning can be observed in the material and spatial engagement with the sea, which guides the direction of this study.

1.4. Research implementation

1.4.1. Chronological framework

In chronological terms, the study covers the Late Neolithic (LN), Final Neolithic (FN), Early Bronze Age (EB I–III), Middle Bronze Age (MB I–III) and Late Bronze Age I (LB I), allowing for a long-term approach to how successive Aegean communities interacted with the sea and the forms this took. An additional reason for choosing this chronological range is that it covers different socio-political configurations of the Aegean, allowing for comparison between the village-sized communities of the Neolithic–EBA and the states of the MBA–LBA. As the LN marks the beginning of the first occupation of medium-sized Aegean islands, it was an obvious starting point of the study, providing evidence of people situating habitational space in relation to the sea.[117] At the other end of the scale, LB II–III was omitted as Mycenaean coastscapes have been systematically treated elsewhere recently.[118] As evidence has accumulated over the past decades, it has become increasingly clear that the traditional tripartite partitioning of the Bronze Age into EB, MB and LB and further subdivisions of I, II and III, are not always fit for purpose.[119] In recent years this framework has been further modified with the addition of A and B qualifiers (mostly relating to ceramic assemblages), though this has given the false impression of more substantial cultural continuity within sub

[116] Malafouris 2013, 67; Clark & Chalmers 1998, 8.
[117] Cherry 1990, 164; Dawson 2013, 53.
[118] Tartaron 2013.
[119] See Rutter 2017 for a recent reformulation of MBA chronology on the Greek mainland.

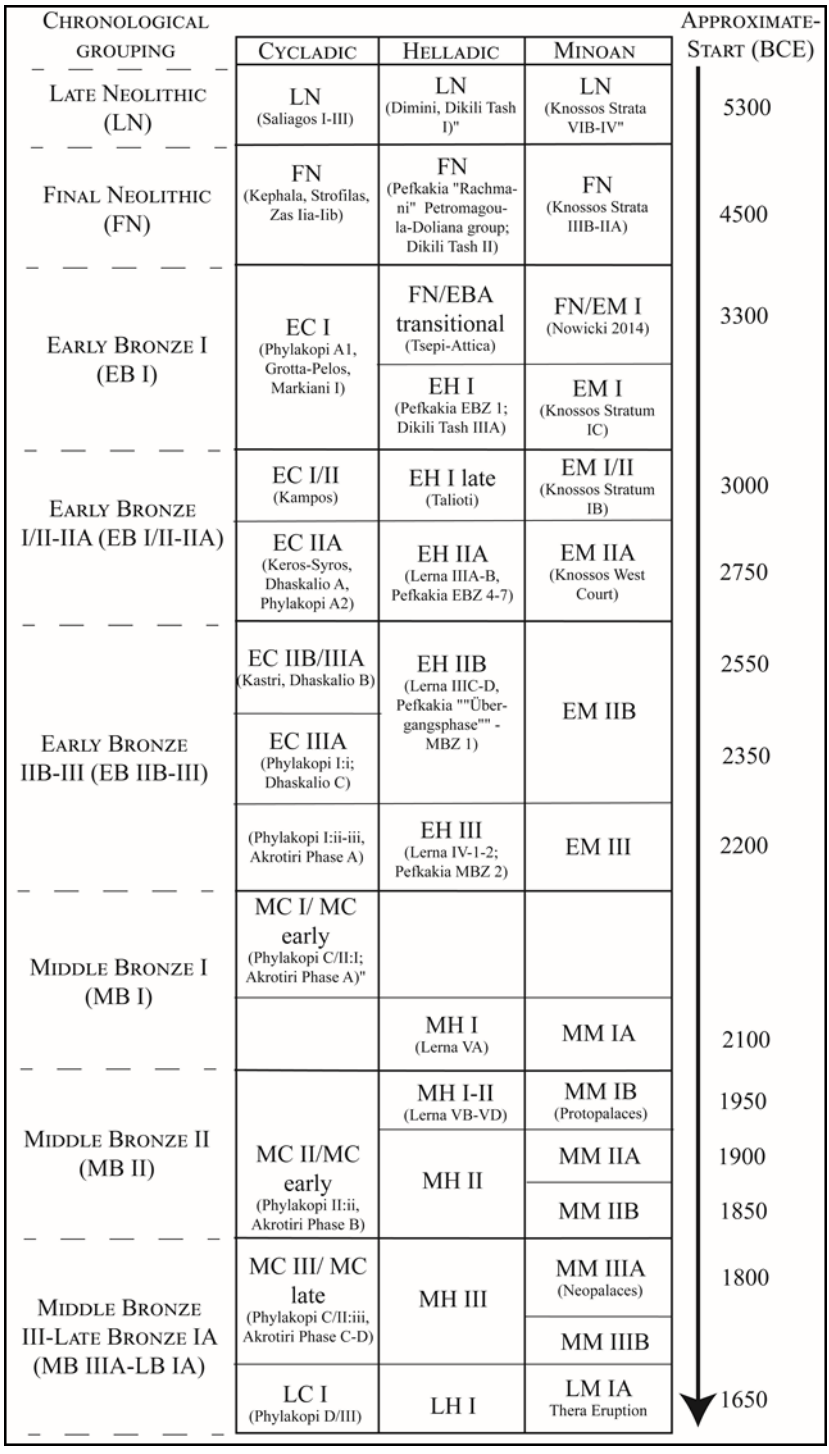

Figure 1.2. Chronological framework for the study.

phases than between the I, II, III sub phases. Several chronological sub phases refer to local rather than regional trends and predominantly centre on ceramic, rather than cultural developments.[120] While it is necessary for broader comprehension to maintain the use of traditional chronological terminology, the way they are grouped is not (Fig. 1.2). This study takes the approach that certain phases can be grouped based on their shared socio-cultural developments.[121] An argument for the down dating of the start of the EBA is convincing and the length of this period was a primary motive for its isolation.[122]

1.4.2. Geographical framework

The geographical framework covers the following regions from north to south (Fig. 1.3): Thrace, southern Macedonia, eastern Thessaly, the Sporades, the insular eastern Aegean, Phthiotis, eastern Boeotia, Euboia, Attica, the Corinthia, the Argolid, the Cyclades, eastern Laconia, the Dodecanese, and northern Crete. Western Anatolia and southern Crete were excluded due to time and space limitations. The forthcoming analysis treats each of these regions as discrete units before comparison of patterns and trends, however, where evidence is scant, regions may occasionally be grouped to aid discussion, for example grouping evidence between the Greek mainland (EH), Crete (EM) and the Aegean islands (EC/EB). Modern place names are always listed in italics (e.g. *Kifissia*), to aid in differentiation from archaeological site names.

Previous research has focused on relatively small and bounded areas for interrogation of human-sea interaction, often to the exclusion of the Greek mainland.[123] Rarely has the focus been placed on the sea as the central unit of analysis and here all the littoral zones of the Aegean (except western Anatolia) are included to accommodate this shift, making this an analysis of the Aegean

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[120] See the use of "EC I/II" and "EC III" as historical phases rather than ceramic cultures.

[121] The LN group consists of LN I and II. The FN group includes the Rachmani and Petromagoula-Doliana ceramic groups of Thessaly. The EBA is in a less traditional division. The EB I group consists of the Cycladic Grotta-Pelos culture of the Cyclades, the late FN–EM I phase of Crete and the FN–EH I transitional phase, as well as the Korakou culture (EH I) of the Greek mainland. The EB I/II–IIA group covers the phases EB I/II (written as EH IB, EC I/II or EM I/II) through to the end of EB IIA. The motive was the cultural similarities and continuities between these periods in most areas. The appearance of Anatolianising pottery marks the beginning of the EB IIB–III grouping. This group includes also EC III, bridging the gap between Dhaskalio Phase C and Phylakopi I. Note that while EH III and EM III partially extend into the following period, for the sake of clarity they are confined to the EB IIB–III group. The first MBA group is MB I, containing MC I/beginning of MC early, MH I and MM IA. The MB II group is driven by the development of the Minoan protopalaces and consists of MC II/end of MC early, MH I/II (Lerna VB–VD), MH II as well as MM IB–MM IIB. The MB III–LB IA group covers the formation of the Neopalaces of Crete and subsequent 'Minoanisation' of the south Aegean, including MC III/MC late–LC I, MH III–LH I and MM IIIA–LM IA.

[122] Cavanagh *et al.* 2016, 47.

[123] Analysis is often directed solely to Crete (Haysom 2011; Berg 2011; 2013; Vavouranakis 2011c), though sometimes to the Cyclades (Mylona 2020).

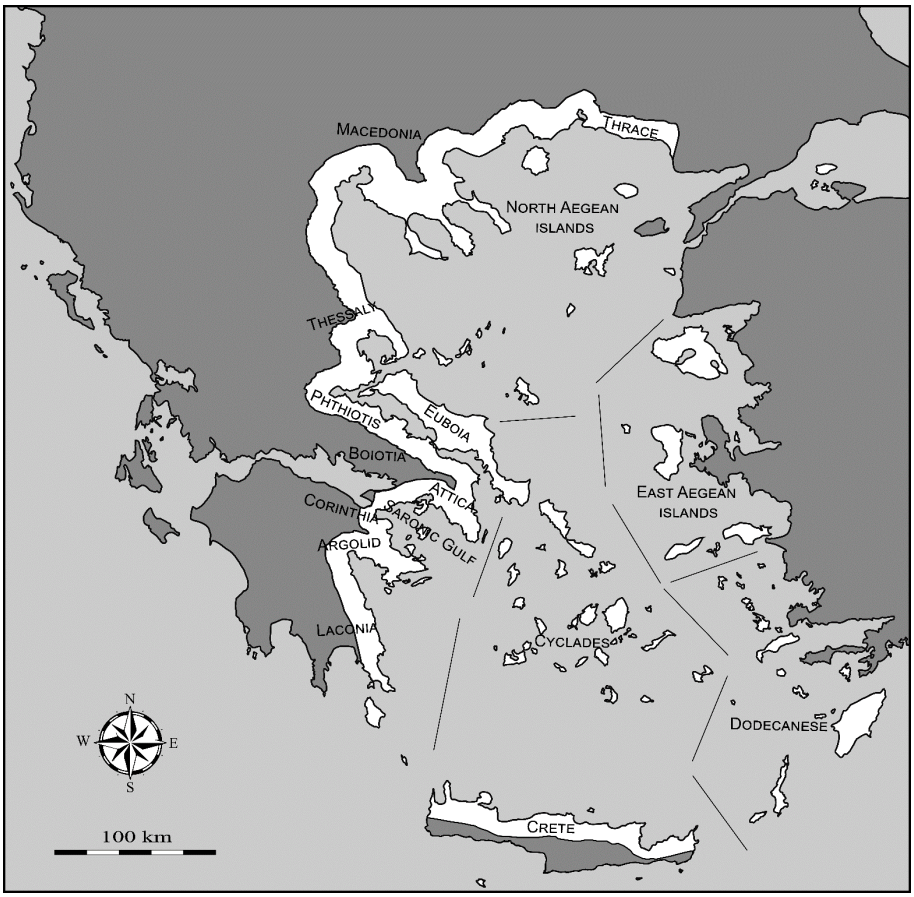

Figure 1.3. The geographical scope of this study. Areas shaded in grey are outside the catchment area.

sea. It is a necessity, however, to place some limits on the geographical framework. There is a multitude of definitions of the term "coastal", ranging from only places on the shorefront, to those as much as 100km inland.[124] One solution is to align these parameters with the embodiment focus of this study. Though estimates of pre-modern daily movement vary, most settle in the range 8–15km per day.[125] A 15km limit is thus used as a maximum, associating the catchment area to the physical parameters

[124] McGranahan *et al*. (2007, 17–37) define a coastal zone as a "contiguous area along the coast that is less than 10m above sea level", while Small *et al*. (2003, 584–599) define it as "within 100km of a shoreline and 100m of sea level".

[125] Most estimates of pre-modern *homo sapiens* movement focus on the Hadza hunter-gatherer communities. Studies of tracked walking distances showed averages of 12.2 +– 2.7 km per day for men and 6.2 +– 1.7 km per day for women (Pontzer *et al*. 2015, 632; see also Pontzer *et al*. 2012, 1–8; Wood *et al*. 2021), however, sedentary humans may have moved considerably less than these averages.

Table 1.1. Approximate difference between ancient sea level and present levels.

	LN	FN	EBA	MBA–LBA
S. Aegean	7m	6m	5m	4m
C. Aegean	6m	5m	4m	3m
N. Aegean	5m	4m	3m	2m

of human movement. For the islands of the Aegean (including Euboia but excluding Crete), the entire island is included within the catchment area, regardless of distance.[126] This approach incorporates islands, sea and coastal space into a broader canvas allowing for comparison of sea interaction between island and mainland communities, but also between coastal and non-coastal communities in the areas mentioned above.

1.4.3. Environmental setting

The Aegean Sea formed through a gradual drowning of the Aegean basin, ongoing since the end of the last glaciation. By 6000 BCE, the sea level would have been approximately 15m lower than present, though due to the steep configuration of most coastal areas and islands of the Aegean, the shorelines would have been close to that we see today.[127] Since the LN, estimates suggest that the sea level has risen by a steady 0.7–1mm per year.[128] Using bathymetric maps and predicted average sea-level change, it is possible to estimate paleosea-levels. These figures take into account not only sea level change, but also localised tectonic shifts, generating a corrective curve for areas further away from the tectonic border.[129] Beginning at 4800 BCE with a median sea level rise of 0.85mm per year gives the figures presented in Table 1.1. Discoveries of partially or fully submerged EBA sites such as Pavlopetri, Labayanna and Salanti Bay, demonstrate that the sea-level has risen considerably in the last 5000 years.[130] Taking the EBA, for example, an estimated figure of -5m can be utilised.[131] This is justified by the consensus that the aseismic and geologically stable Attic-Cycladic massif had a sea level of approximately between

[126] Southern Crete is excluded both to impose limitations on the study, but also to maintain an Aegean, rather than a Libyan, sea focus throughout.
[127] Perissoratis & Conispoliatsi 2003, 152. See also Dawson (2013, 31, fig 2.4) for the similarity in configuration from 12,000 years before present to that of 6000 BCE.
[128] For a succinct overview of sea-level changes in the Aegean, see Baika 2008, 34–35. These estimates are based on work undertaken by Lambeck 1995; 1996, reinforced by Baika 2008, 39–40. For an alternative view, see Pirazzoli *et al.* 1982; Pirazzoli 1986; 2005.
[129] Lambeck 1995; 1996.
[130] Pavlopetri: Harding *et al.* 1969; Labayanna: Beck 2016, 18–21; Salanti Bay: *ArchDelt* 54 (1999): B, 1028–1029.
[131] Lambeck 1996, 599. The well-established sedimentation event in the Argolid, and the difficulties in integrating this regions' sea level fall into an otherwise sea-level rise analysis, mean that this area is excluded. See Finke 1998.

-5.5m to -4m below that at present and must have been lower than the -2.5m as suggested for Late Classical Delos in c.400 BCE.[132] The observation that the Dhaskalio islet appears to have been joined to the main Keros island by a narrow causeway in the EBA further supports this figure.[133] For Crete, there are regional variations in the reconstructed sea level accounting for seismic events.[134] This has led to a general division between western Crete and central/eastern Crete resulting in a potential difference of between -5m and -7m to -4m respectively.[135] Taken together, and given the prediction set out by Lambeck, a general figure of -5m is proposed for the southern Aegean in the EBA for the purposes of this model.[136] It must be stressed that this is not an attempt to reconstruct the ancient sea level in minutiae, but to give a figure closer to the ancient sea level than that we have in the present-day.

In some areas, other factors have been at work in transforming the landscape of the past to the present.[137] The build-up of alluvium in riverine lowlands has pushed the sea further away in some areas, while tectonic activity can also be accountable for local sea-level change.[138] A period of rapid sedimentation in deltaic regions has been observed between 3000 and 1000 BCE.[139] This is especially the case in larger, more fertile valley floors, such as the Argolic Gulf (Fig. 1.4:top), Pagasitic Bay (Fig. 1.4:middle) and the Thermaic Gulf (Fig. 1.4:bottom), though there are micro-changes.[140] When known to the author, these fluctuations have been taken into account in the analysis.[141]

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[132] Poulos *et al.* 2009, 16; Ghilardi *et al.* 2014, 233. Classical Delos: Desruelles *et al.* 2007, 231.
[133] Dixon & Kinnaird 2013.
[134] Mourtzas *et al.* 2016.
[135] Mourtzas *et al.* 2016, 65.
[136] Lambeck 1996, 599.
[137] Aegean prehistory would benefit immensely from an Aegean-wide project on the paleo sea-level and corrections given for the sedimentation and tectonic shifts. Currently, information is piecemeal and not synthesised. Here an attempt has been made to bring as much of the current research together, though fine-grain estimates have not been possible. In the absence of such a project, the estimates here are advisory and open to revision in light of new data.
[138] Weiberg *et al.* 2016, 46.
[139] Bateman 1985, 183. Though in recent times, anthropogenic causes have been sidelined in favour of extreme weather as a driver of soil erosion rates, see Bintliff 2017, 21–22.
[140] For the Thermaic Gulf, see: Fouache *et al.* 2008; Ghilardi *et al.* 2010; Vouvalidis *et al*. 2005. For the Argolic Gulf, see Zangger 1991. For Phylakopi as a peninsula in the EBA–MBA, see Davidson & Tasker 1982, 94; Whitelaw 2004, 150. This sedimentation appears to slow after the EBA, after which it is assumed hillslopes were managed properly through terracing (Zangger 1993; van Andel & Runnels 1987, 140).
[141] For western Thrace see: Ammerman *et al.* 2008, Samothrace and Skyros Islands: Pavlopoulos *et al.* 2007; Thermopylae coast: Vouvalidis *et al.* 2010; Marathon: Pavlopoulos *et al.* 2006; Brauron: Triantaphyllou *et al*. 2008; Cyclades: Kapsimalis *et al.* 2009; Dersuelles *et al.* 2007, 2004; Fouache *et al.* 2005; eastern Peloponnese: Van Andel & Lianos 1984; Crete: Theodorakopoulou *et al.* 2009; Asia Minor (Ephesus, Miletus): Bruckner *et al.* 2009; Kelletat 2005.

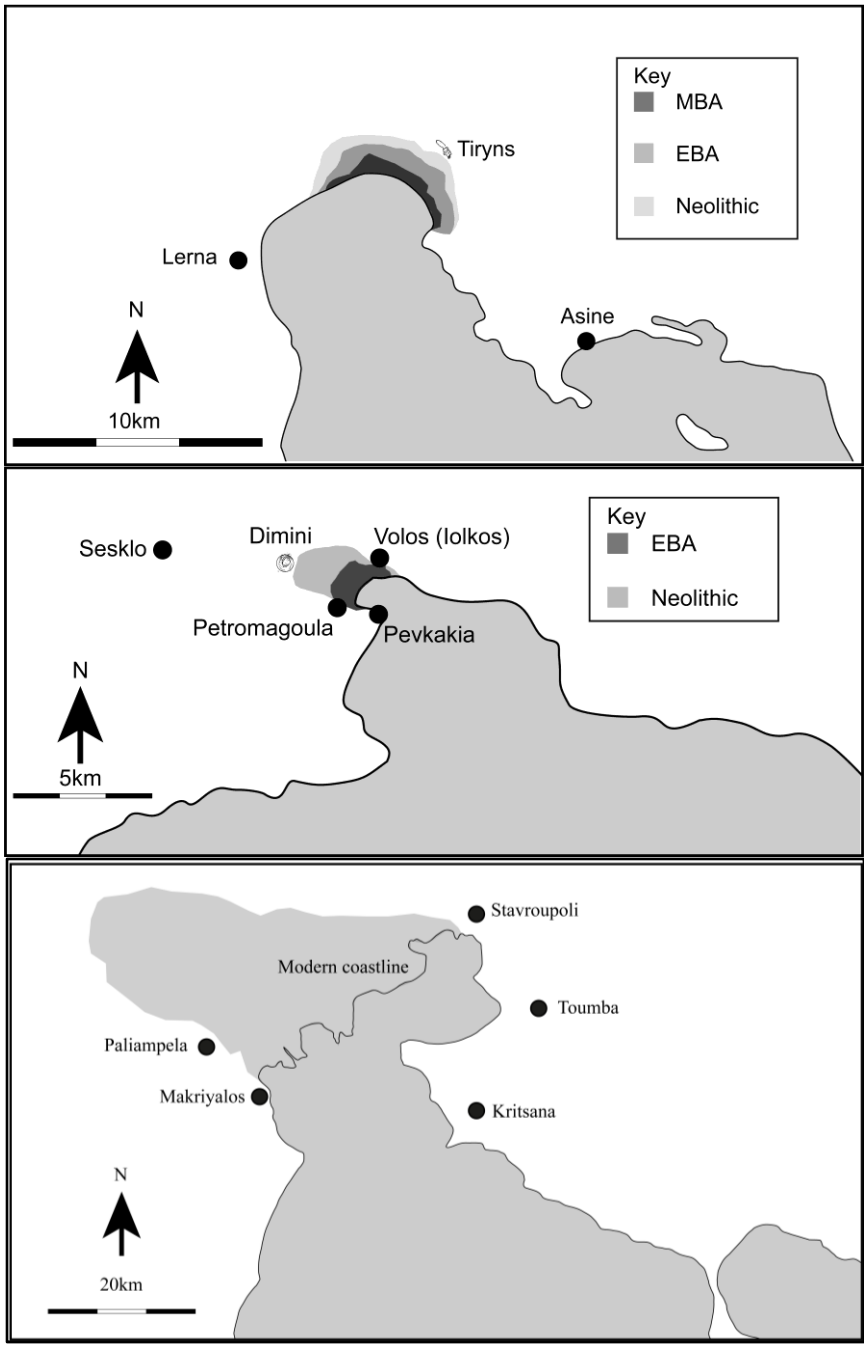

Figure 1.4. Reconstruction of the coastlines around the Argolic Gulf (top), the Pagasitic bay (middle) and the Thermaic Gulf (bottom).

Much research has gone into paleoclimatology in recent times and it reveals a complex and variable picture.[142] The Aegean (and the wider eastern Mediterranean climate zone) encountered significant shifts in climate. Periods of higher aridity,[143] and wetter periods with oscillations between the two, show long-term climatic fluctuations.[144] The consequences of these oscillations between wet and dry conditions had varying degrees of impact depending on the local landscape sensitivity, with semi-arid areas being affected more by drought than wetter areas. A similar scenario can be discerned from the temperature data, which have also oscillated between periods of cooler and warmer conditions.[145]

Despite large areas of Greece being generally void of tree cover in the modern-day, pollen records show that some areas of the eastern Mediterranean were forested well into the Neolithic.[146] Increasing evidence for cereal cultivation and a drop in tree-derived pollen are coterminous with the first signs of

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[142] Finné *et al*. 2011.

[143] For a review of the available evidence, see Finné *et al*. 2019, 847–863. At the start of the FN, change brought about a drying trend over the ensuing years, which resulted in short-lived drought peaks (Roberts *et al*. 2011, 151). A climatic anomaly has been posited for around 2500–2200 BCE, the so-called "4.2 ka event", coinciding with a string of societal collapses in the eastern Mediterranean (Bini *et al*. 2018, 555–577; Mayewski *et al*. 2004; Finné *et al*. 2011). Around this time, drought is observed in Mesopotamia (Cullen *et al.* 2000) and the Red Sea area (Arz *et al*. 2006), declining tree cover is observed in Italy (Sadori *et al*. 2011), and drier conditions noted in Greece (Ehrmann *et al*. 2007; Finné *et al*. 2017), Turkey (Roberts *et al*. 2001) and Albania (Wagner *et al*. 2009).

[144] LN as a wetter period (Robert *et al*. 2011, 151) as well as the EBA (Finné *et al*. 2011, 3162). The EBA evidence from the Mavri Trypa cave in Messenia is illustrative. There appears to have been relatively wet conditions between 4700–4500 years BP, followed by a transitional period between 4500–4300 years BP, followed by arid conditions from between 4300–4200 years BP (Finné *et al*. 2017). In relative chronological terms, this means wetter conditions in EB IIA, with the transitional phase beginning EB IIB, increasing in severity towards the end of that period.

[145] Cooler than present conditions were posited for the northern Aegean from FN–EB I, followed by warmer conditions in the southern Aegean (Kotthoff *et al*. 2008; Triantaphyllou *et al*. 2009), though cf. cooler sea surface temperature data from marine sediments suggesting an interval of cooler temperatures in EB I (Geraga *et al*. 2005). The warmer Bronze Age conditions are generally observed until the end of the Bronze Age, when further cooling can be observed in the southeastern Aegean (Triantaphyllou *et al*. 2009).

[146] Such as at Gölhisar in southwestern Anatolia (Vermoere 2004), Abant in northwestern Anatolia (Bottema *et al.* 1993) and Ioannina in Epiros (Bottema 1974). Palynological analysis of sediment cores from Lake Lerna in the Argolid indicate a period of open deciduous oak woods in the MN–LN, followed by a period of dense oak woodland, which lasted until the beginning of the Bronze Age (Weiberg *et al.* 2016, 45), followed by anthropogenic woodland clearance indicated by the appearance of maquis, phrygana and pine (Jahns 1993, 187). A similar pattern is observed in the northern Aegean from the Lower Angitis Valley, where the landscape was dominated by woodland during the LN, before giving way to forest clearance during the LN to FN (Lespez *et al*. 2016, 239).

erosion and sedimentation at the end of the Neolithic, with an increase in intensity evident from the EBA onwards.[147] Despite the anthropogenic impact, some areas of the Aegean may still have been considerably more forested than at present.[148] As with the flora, the fauna of the Aegean region in the Neolithic and Bronze Age is slightly different to that which we see in the present.[149]

In summation, reconstruction of the Aegean paleoenvironment is complex and it appears to have been slightly different from that encountered today. Though the modern configuration of land and sea would be broadly comparable, a range of wildlife and resources that are not known, or rare, in present urban conurbations, would have populated it. Woodland cover is likely to have been greater and the region would have been wetter, at times, than today. These regional and temporal changes in climate need to be considered alongside an Lamanalysis of human-sea interaction in the Aegean. When the Aegean paleoenvironment was more favourable, this raises the possibility that more seaward-looking communities may have made a specific choice to be so, rather than it being a necessary ecological adaption to living in a marginal environment.

1.4.4. Contextual approach

This study takes a contextual approach to embodied action (Fig. 1.5.). There are three major contexts to embodied practice, to which seascape-related items may relate. The first, quotidian practices, has a range of subdivisions. The first subdivision is social consumption, which involved acts such as drinking or communal feasting, in which there is opportunity for competitive display. A seascape related association would be the use of iconography connected to seascapes in such a setting, on material culture such as drinking vessels or a fresco. The second subdivision, cuisine, may partially overlap with the first, and involves the consumption of foodstuffs in both private and public places. Relevant here are the remains of seafood refuse, such as shell or fish bones, in

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[147] Weiberg *et al.* 2016, 46. Drier conditions instigated a decline in tree species and oak during the EBA, (3000–2500 BCE), which may have been accelerated by anthropogenic factors (Lawson *et al.* 2004; Sadori *et al.* 2011). Olive and cereal pollens increase from Neolithic to EBA and it appears that olive trees were exploited in the Cyclades in the EBA, while on Crete, olive cultivation appears to have begun in the FN (Weiberg *et al*. 2016, 46; Asouti 2003, 481; Moody *et al*. 1996)

[148] Evidence from charcoal macro remains from Akrotiri imply that Thera had access to pine in the MBA (Asouti 2003, 480), whether on the island itself or imported from elsewhere.

[149] Aside from domesticates such as sheep, goats, cows, pigs and dogs, we have a range of non-domesticated species which are observed at several prehistoric sites. See Trantalidou (2000 710–715) for e.g. large cats, hares, red deer and a range of bird species. See Masseti (2012, 186–189) for the recovery of bear remains from the Greek mainland, as well as lions, though these are not found on the islands. It is not clear in every instance, however, whether these represent animals taken from a local habitat or animals imported from elsewhere.

waste or floor contexts. Finally, processing involves the manufacture of material culture from a raw material through to a finished object. Relevant here is the evidence for working debris, such as crushed murex shell from the production of purple dye, or shell fragments in a workshop area.

The second major type are contexts of special importance. Like quotidian practices, this involves events of private and public consumption, however, tied to shrines and the use of materials in a potentially special manner. These places can be identified through features such as bench installations, altars and pedestals with figurines in association. Seascape related practices in this context would involve seafood refuse connected to such contexts from floors, pits or foundation deposits. The second subdivision centres on ritual orchestration. This involves the use of specific objects that play a central role in ritual performance, for example a dagger used for sacrifice. Relevant here, are the objects made from marine fauna, such as triton shell trumpets and skeuomorphs of marine fauna connected to ritual paraphernalia. The final subdivision is the votive use of objects, for example objects dedicated to a shrine. Relevant here would be examples such as painted seashells found on pedestals or on benches within a shrine.

The final major context is funerary ritual, subdivided by the temporality of the acts connected with burial places. The first, primary deposition, are acts taking place before, during and immediately prior to the closing of the tomb after the deposition of the body. This can come also in two forms, objects placed immediately on the dead individual such as jewellery, part of a corporeality (individual bodily identity), as well as objects placed within the tomb boundaries such as food offerings, which reflect funerary ritual tradition. Relevant to this study would be the recovery of seafood from inside the tomb, indicating its role as part of a funerary feast, as well as the recovery of shell jewellery placed on the body, as part of corporeality. The next subdivision is secondary deposition, which includes acts connected to exhumation and/or secondary manipulation of the skeletonised body, which may involve a range of rituals in association. The recovery of seafood remains outside of the grave entrance would be an example. The final subdivision are tertiary deposition events, when objects are deposited after a long time has elapsed since primary deposition. These would include tomb clearance from a chronologically later period, which can be associated with ritual deposition of items to assuage the dead. These cases can be difficult to prove, though an example would be the deposition of later objects, such as pottery or food detritus on or around the gravesite a few generations after the primary deposition.

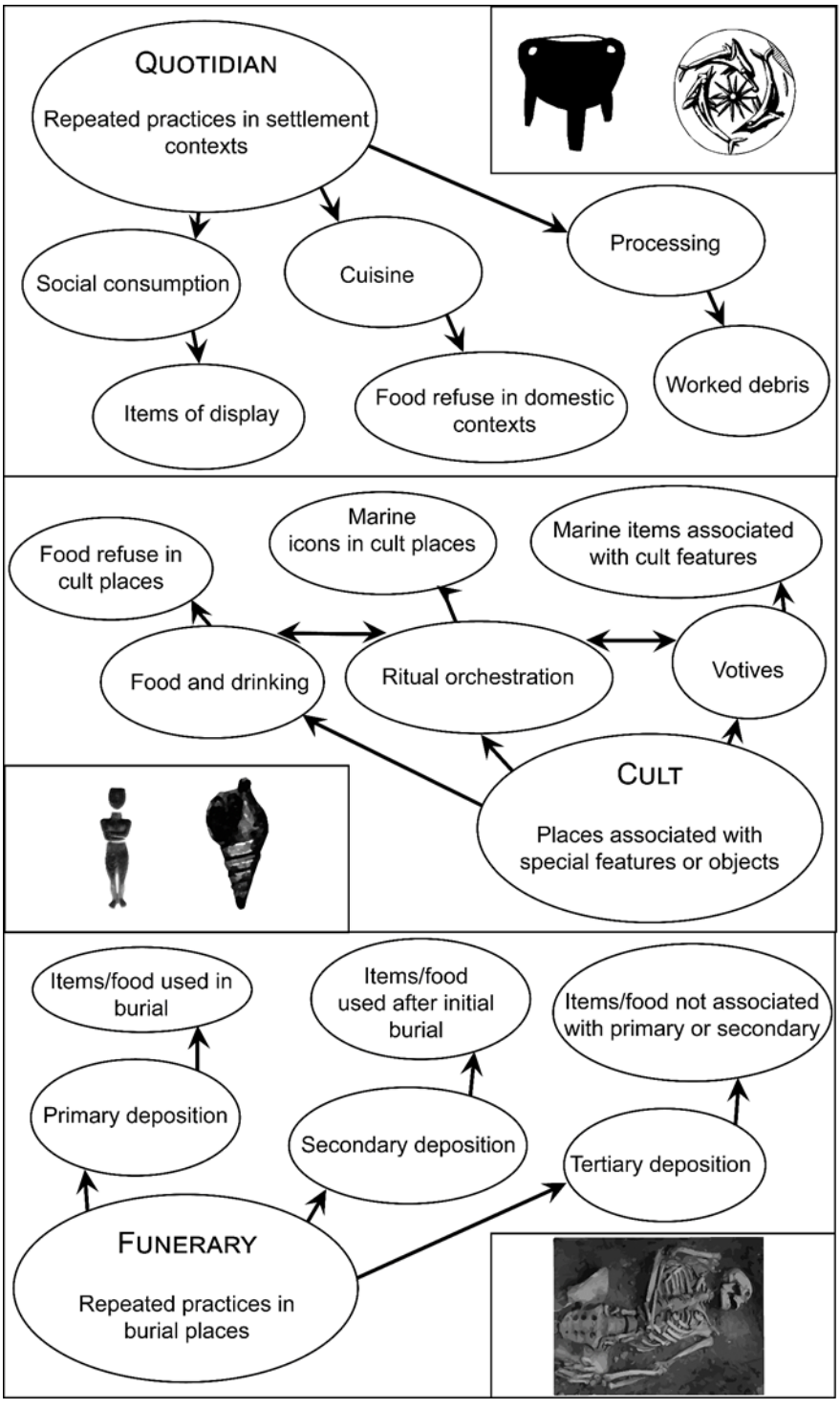

Figure 1.5. Contextual approach to the study.

This study is built on bibliographic research, from primary literature such as excavation reports, survey reports and various grey literature. As a result, the information published and the level of detail of the publication (with some exceptions[150]) affects the types of detail and the extent of analysis in this study. All sites (settlements and cemeteries) within both the 15km catchment area and the chronological span were included in this study, as well as a selection of extra-urban shrines that also fit the criteria, inclusive of 299 settlements, 212 cemeteries and 10 extra-urban shrines. For each of these sites material culture remains connected to the sea were collected in a database for further discussion, including remnants of seafood, material culture fashioned from marine faunal remains and material culture bearing sea-related iconography, in addition to contextual data, where known. The decision to include a site was based on it adhering to the selection criteria outlined above, but also having secure chronological contexts associated with architectural features. Most survey and cave sites were thus excluded unless there was a clear indication of phasing. When later activity overlay earlier remains, the remains of the earlier phases were included only if there were deposits which could be chronologically phased. Within the study area, there is a multitude of relevant sites, though there are imbalances in the intensity of previous research focus, ranging from high (Crete, Attica) to low (Thrace, Macedonia). There is unfortunately no way to correct this bias other than to be mindful of the fact that in some areas we have a more complete archaeological landscape. This will of course influence the veracity of the conclusions offered for these areas, which would be liable to change with more research, though the alternative would be to exclude them entirely from discussion, thus replicating and compounding the issue.

1.5. Outline of the study

This initial chapter has laid the foundation work for the thrust of the following study, providing justification for the research, as well as a review of seascapes and their application to Aegean prehistory, pinpointing problems and research *lacunae*, before addressing the theoretical and methodological framework of the study. *Seascape dialogues, Human-sea interaction in the Aegean from Late Neolithic to Late Bronze Age* is the focus of this book, and the following study can be divided into three parts concentrating in a linear fashion from macro through meso into a micro perspective on human-sea interaction.

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[150] An opportunity to study unpublished pottery from Phylakopi and unpublished marine faunal records from several sites allowed for an increased level of detail in these instances. My thanks to Dr. Robin Barber and Dr. David Reese for allowing access to these sources.

The first part, Chapter 2, concerns "being in place" in terms of how communities situated themselves in relation to the sea. It presents a macro spatial analysis of settlement and burial patterns is presented with reference to coastality and seascapes. It demonstrates how, when and where people situate their habitational and mortuary spaces in relation to the sea and how this changed or continued through time. It links these patterns to wider chronological developments and localised narratives.

Chapters 3 and 4 form the second part, where discussion revolves around embodied action in relation to human-sea interaction. In Chapter 3, the nutritional exploitation of the sea is the central focus. It addresses the prevalence of seafood consumption and material evidence for fishing to determine how typical seafood consumption was in both domestic and funerary contexts from the LN–LB I, utilising faunal remains and stable isotopic evidence. Its purpose is to ascertain whether seafood is only consumed beside the coast, or whether some communities could go to considerable effort to procure seafood. Chapter 4 presents and discusses material culture manufactured from marine animal fauna from a range of embodied contexts, including body ornamentation, ritual usage, utility items and industrial production.

The third part, Chapter 5, addresses the dialogue between human cognition and material culture with reference to seascape representation. The chapter concerns the prevalence of marine iconography in a range of media throughout the chronological span of the study. These are divided by image type, including marine flora and fauna, fishing scenes, seafaring scenes and scenes of ritual performance.

Building on these analyses, Chapter 6 presents the final discussion and conclusions of this study, as well as suggestions for future research. It determines different levels of seascape engagement and how this relates to the theoretical framework of the study. It then considers regional developments with reference to seascape engagement, before summing up the results of the discussions throughout the study. Chapter 7 presents a short summary of the study in Greek is presented in advance of the bibliography. Appendix 1, the catalogue of sites, is included in this book to aid comprehension and provide a reference point for the reader in connection to relevant background information for the sites collected in this study. Information supplementary to the text can be found in the *Supplementary material [http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-457245]*.

2. Coastality in life and death

2.1 Space and Place

Space is a location that has no social meaning, a vacuum in other terms.[151] Place, on the other hand, is a location created by human experience, associations and meaning, which can transcend physical properties, meaning that embodied existence is topologically derived.[152] The process of giving meaning can be derived from two sources, either an intimate, sense-based experience (embodiment) or a conceptual experience associated with symbols and arts (metarepresentation).[153] Space can thus be converted to place in the act of giving meaning by humans to a location. Within the context of these arguments, the sea can be either space or place. I argued in the previous chapter that the creation of a seascape is the process of giving meaning to sea (space), converting it into seascape (place). Not all sea is a seascape, and not all communities give meaning to the sea. An aspect of places are locales, the material setting for social relations within a place.[154] It is the spatial context of action

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[151] There is a multitude of definitions of space in philosophy, but most essentially range from objective space as something existing independently of other things (i.e. a vacuum), to space as a container for objects or things, without which it could exist (Wollan 2003, 36). There is a huge amount of literature on this theme, so only summary statements are made here. A fundamental difference emerges from the Kantian framework, in which space is a self-evident feature of the mind, i.e. socially produced (Timmons 1979, 177), and the Heideggerian framework in which space has various qualities (Heidegger 1962, 79), but are essentially abstracted and not within the mind (Heidegger 1962, 146). Similar to Heidegger, Sack (1997, 31) has argued that space is not culturally constructed and Wollan (2003, 36) has suggested it is "a limited abstraction from the primarily lived reality." See also Malpas (2012, 134): "Space and spatiality cannot be understood as derivative of any other structure." Space as an abstracted concept located within a "boundary", for example, the boundary between embodied existence (*Dasein*) and the limits of embodied knowledge, e.g. the horizon, is used here, following Heidegger (2007, 306, Seibert trans.).

[152] See Tuan (1977, 4, 6) for a seminal analysis of space and place in anthropology. See also Malpas (2012, 63): "…dwelling is the mode of human being, so human being is essentially a being in place, just as it is also a being in the world." This can also be equated to the *Dasein* of Heidegger's *Being and Time*: "Dasein is identical with the essence of human being" (Heidegger 1998 (McNeill *trans*.), 153).

[153] Tuan 1977, 6. See also Seamon & Sowers (2008, 44) in their discussion of the work of Relph (1976): "[S]pace and place are dialectically structured in human environmental experience since our understanding of space is related to the places we inhabit, which in turn derive meaning from their spatial context"

[154] Cresswell 2009, 1.

comprised of material elements, as well as social norms, culturally shared values and inter-subjective meaning.[155] These are the main nodes through which life flows, the main arenas in which experience about the world is gathered and places that structures everyday routine.[156] Within the context of Aegean prehistory, I take locales to be centres of action, such as settlements and cemeteries.[157] These locales are where attachment to place can be expressed through embodied action, from which archaeology sees only some material traces. A strong proximal character has been argued and the significance given to place appears to correlate with the distance from the human to the place.[158] As a null hypothesis, therefore, we may expect a higher chance of detecting seascapes when locales are in closer proximity to the sea.

A concept that can give us an index of the spatial distance between human locales and the sea is coastality. In basic terms, coastality is an expression of proximity to the sea.[159] Coastality in a larger sense can allow for the determination of how settlement patterns were configured in relation to the sea in specific periods, essentially how attractive coastal spaces were through the proximity of locales in relation to the sea.[160] As a concept, it is a neutral indicator of the proximity of a place to the coast, a historical and spatial fact which can be explained as a result of multiple factors. As highlighted in the previous chapter, approaches to space are a significant deficiency of seascape research in the Aegean and allows us to insert spatial aspects of embedment alongside the material elements of thinking and being, covered in Chapters 3–5.

The macro-scalar spatial relationship between settlements, burial grounds and the sea, in other words coastality, is addressed though a geographic information systems (GIS) analysis below. It interrogates when communities inhabited coastal locales and when they did not. Such an analysis is an initial first step to understand the spatial significance of the sea. This chapter, therefore, has two aims. First is to establish how many settlements fall within the study area in each period and through those sites, determine a cross-comparable value for their coastality. This is a prerequisite to determine when coastal occupation was at its most intense and when the coast was shunned and can also be used to address wider socio-technological, network and climatic changes. Secondly, the chapter aims to determine whether patterns of coastality between settlements and burial grounds are similar or vary. From

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[155] Werlen 2009.
[156] Werlen 2009, 5.
[157] The sea as a place can have locales, such as islets and harbours and temporary locales such as boats, though the predominant locale will be the settlements that people inhabit.
[158] Cloke *et al.* 1991, 79.
[159] Plane 2005; Kiousopoulos & Lagkas 2005; Kiousoupoulos 2010, 230.
[160] There are more microelements of coastality, which can be applied in environmental management to modern populations (i.e. "Coastal feeling" and "Anthropogenic intensity") which are more problematic in the field of archaeology. See Kiousoupoulos 2010 for an in-depth treatment of coastality.

the data generated, it also becomes possible to interrogate the drivers of these patterns and to discuss their impact.

2.2 GIS and coastality

The investigation of prehistoric maritime people has been guilty of considering the relationship between communities and the sea from a cartographic lens. A consideration of elevation and how difficult the landscape is to travel are vital to determine the true 'cost' of movement from places to the sea.[161] Though there have been a range of studies utilising GIS in the prehistoric Aegean in recent years,[162] such analyses have rarely considered coastal proximity and in particular the effort required to travel to the coast.

The method used in this analysis is the 'least cost-path' (LCP) analysis function of ArcMap, where geospatial coordinates of a site are plotted in three-dimensional space and, taking into account digital elevation models, a value is determined for the cost of movement on foot between the site and the coast (Appendix 2B). The model considers elevation to produce slope values, which hinder movement. Areas of high slope would be avoided as they would cost more in terms of energy expenditure, while areas of lower slope (level-ground) are preferred as aspects of LCP's. Estimated paleo sea levels are naturally important and hence considered in the analysis. It should be stressed that the pathways are only suggested routes used to travel between a place and the sea, while there might have been unknown preferences for alternative ones. They nevertheless give an indicative point of reference for comparison and discussion.

The numerical values are relative to the cost, with shorter pathways yielding lower values and longer paths higher values. The scaling is linear, so that a LCP of 1000 is half the expenditure of an LCP of 2000. To clarify further, a coastal settlement such as Kolonna on Aegina has an LCP value of 199, while a settlement further inland such as Dikili Tash has an LCP value of 22193. The lower the value therefore, the more direct contact humans at these places are likely to have had with the coast and vice versa. The first step is to determine how many settlements were present in the catchment area in each period. There are imbalances in the length of specific periods and for the longer periods, we cannot assume that site occupation was continuous through an entire phase and that within longer phases, successive site creation and abandonment

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[161] Broodbank 2000, 23.

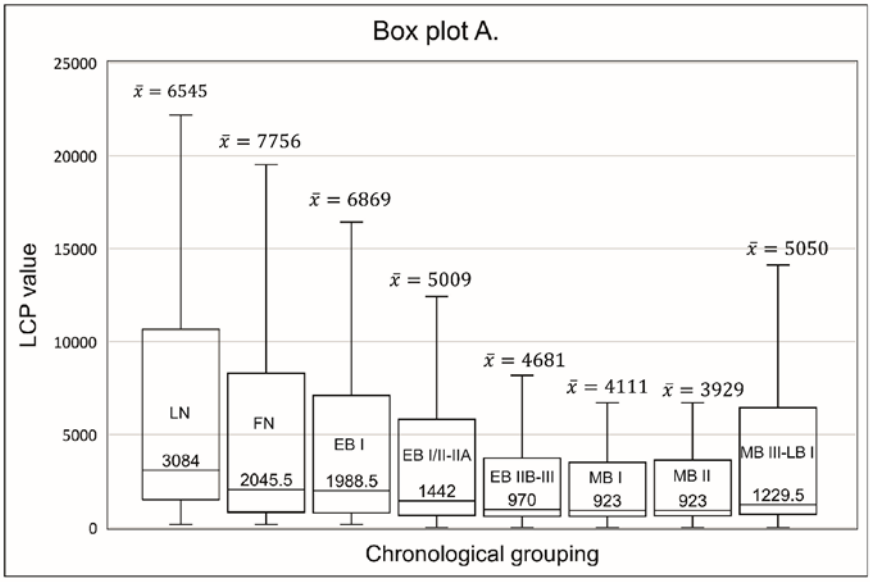
[162] Oikonomou 2012; Farinetti 2011; Déderix 2015; Harriel 2020; Zickel *et al.* 2016; Oikonomidis *et al.* 2016; though see Nuttall (2021, 116-147) for an initial first step. Note that that study was a pilot version of the analysis presented here and due to the differences in the version of the program used (ArcMap), the coastality values differ.

Table 2.1. Sites per century (SPC) for both settlements and cemeteries by period. *In the *Total Sites* column, the first value refers to the number of settlements, while the second value refers to the number of cemeteries.

Chronology	*Total Sites**	*Length (Cent)*	*SPC Settlement*	*SPC Cemeteries*
Late Neolithic	43/1	8	5.38	0.13
Final Neolithic	82/10	8	10.25	1.25
Early Bronze I	122/58	3	40.67	19.33
Early Bronze I/II–IIA	145/82	4.5	32.22	18.22
Early Bronze IIB–III	87/41	3	29	13.67
Middle Bronze I	84/69	3.5	24	19.71
Middle Bronze II	97/74	2	48.5	37
MB III–Late Bronze IA	107/57	2	53.5	28.5

processes may have been at play, which generate an unrealistic high total number of settlements. A way to negate this is to determine how many sites were present per century in each chronological group. This is generated by dividing the total number of sites by the number of centuries represented by each period, to generate a 'sites per century' (SPC) value. The periods that have a large number of settlements do not necessarily have the highest SPC value (Table 2.1).

What follows is a period-by-period analysis of coastality within the study area using LCP's. For each region, a median LCP value is generated. These medians allow for effective comparison between regions and periods, which are visualised though the use of box plot diagrams. In regions where fewer than five sites are catalogued, a median is not generated though the full range of data can be found in Tables 2.11–12. It is important to remember that a low LCP equals high coastality (easy access to the coast) while a high LCP equals low coastality (long or cumbersome access). Descriptors such as 'coastal' or 'inland' refer to their relative position within the 15km catchment area outlined in Chapter 1.4.2. The chronological groupings outlined in Chapter 1.4.1 are followed sequentially here, though in discussion of specific regions local terminologies are used. Information on individual sites are found in Appendix 2A (*Supplementary material*) where LCP values, elevations and Euclidean distances from the coast are listed.



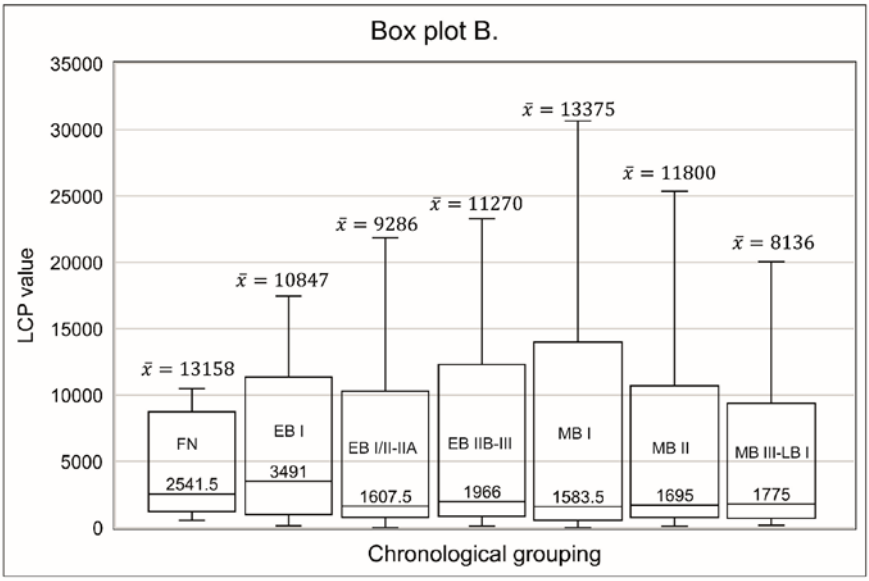


Figure 2.1. Box plots representing the overall coastality by chronological grouping in settlements and cemeteries. 'Box plot A' is the dataset for settlements, while 'Box plot B' is the dataset for cemeteries. The median value is represented inside the boxes. The LCP median value was calculated using the LCP values for all settlements and cemeteries in use during each specific chronological group. The $\overline{x}$ (average) was also calculated using this range of LCP values. Note that a lack of cemetery data for the LN means that there were not enough values to generate statistical data.

2.3 Late Neolithic

2.3.1 Settlements

The Late Neolithic period was sparsely populated (Fig. 2.3) by comparison to later periods (5.38 SPC). Settlements are generally located in lower-land arable areas and coastality is lower than later (Fig. 2.1:LN). The lack of LN settlements in the Argolid, Crete, Dodecanese, east and north Aegean Islands and Euboia indicates that habitation in these areas likely focused on caves rather than settlements or that habitation was located further inland, outside of the previously established 15km catchment area.[163] For those regions where there are LN settlements, it is clear that the littoral mainland has a lower coastality than the islands (Table 2.2).

The values for the littoral Greek mainland indicate that settlements had access to the coast, without necessarily being coastal. This was achieved through the occupation of arable lowlands, where there is not as significant an expenditure to travel to the sea, compared to settlements in upland areas.[164] The values for Thessaly and Macedonia require some discussion. It is clear that several major settlements in these regions fall outside the catchment area, which means that we will inevitably generate a higher coastality value than an analysis including the whole of Thessaly and Macedonia.[165] However, the very fact that there are significant numbers of settlements within the catchment area, some in coastal positions, is an indication that there is variability in the choice of places in which to settle. Indeed, some settlements that can be defined as coastal[166] show that although LN communities generally focused on the fertile soils of inland plains, there were other alternatives, and a coastal setting could be pursued.[167] Examples include Kastri on Thasos and Mikro Vouni on Samothrace. Those located on islands are more likely to be linked to Macedonian and west Anatolian sea-focused networks rather than the Cycladic Saliagos settlements to the south, indicating that LN North Aegean networks had a considerable maritime component. This may in part be linked to

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[163] To list a representative few; Franchthi cave (Vitelli 1993, 31) in the Argolid, Kitsos cave (Lambert 1981, 690) and Cave of Pan/Oinoe (Mari 2018, 283–288) in Attica, Skoteini Cave (Sampson 1992, 61, figs. 1–3) on Euboia, Cyclops Cave (Sampson 1999, 18) on the island of Yioura, Zas Cave (Zachos 1999, 153–154) on Naxos island and Ayio Gala (Hood 1981, 11) on Chios and Gerani cave (Godart & Tzedakis 1992, 77–78) on Crete.

[164] For example at Paradimi (**S200**), Vasilika-Kyparissi (**S283**), Trilofos (**S277**) and Kavallari (**S99**).

[165] Key settlement such as Rachmani (Andreou *et al.* 1996, 542) and Arapi (Hauptmann & Milojčić 1969) from Thessaly and Sitagroi (Renfrew *et al.* 1986) from Macedonia fall outside the study area.

[166] Such as Pigi Athinas in Macedonia (**S214**), Dimini (**S51**) Volos (**S290**) and Pevkakia (**S210**) in Thessaly.

[167] Halstead 1981; 1987.

Table 2.2. Selected Late Neolithic median LCP values by region. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here.

	Attica (7)	*Cyclades* (6)	*Macedonia* (13)	*Thessaly* (6)
LCP median	6870	1306	3523	3191

	Insular (14)	*Littoral* (29)	*Overall* (43)
LCP median	1761	3817	3084

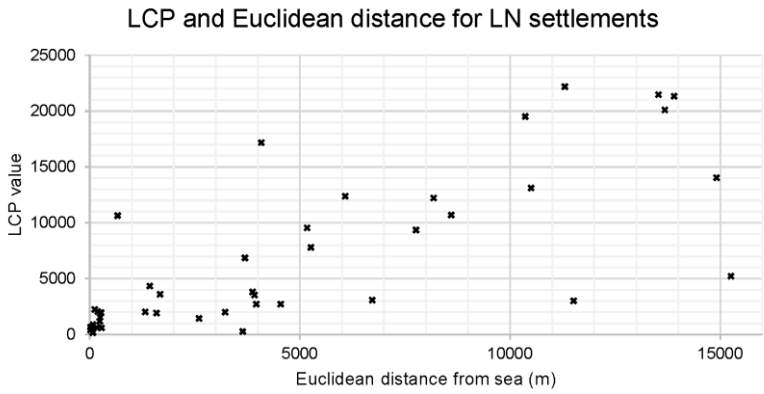

Figure 2.2. Scatter distribution of all settlements included in the LN LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

a focus at some sites in Thessaly and Macedonia on *Spondylus* shell exchange (Chapter 4).

Attica in particular exhibits lower than average coastality (LCP6870), where the majority of LN settlements can be found inland in the Mesogeia plain, an extension of the pattern seen further north (Table 2.2). When compared to values of the islands, this lack of coastality may indicate that there was little communication between Attica and the islands at this stage in the LN, and that Attica was part of mainland-focused networks, a trend that is reversed later.

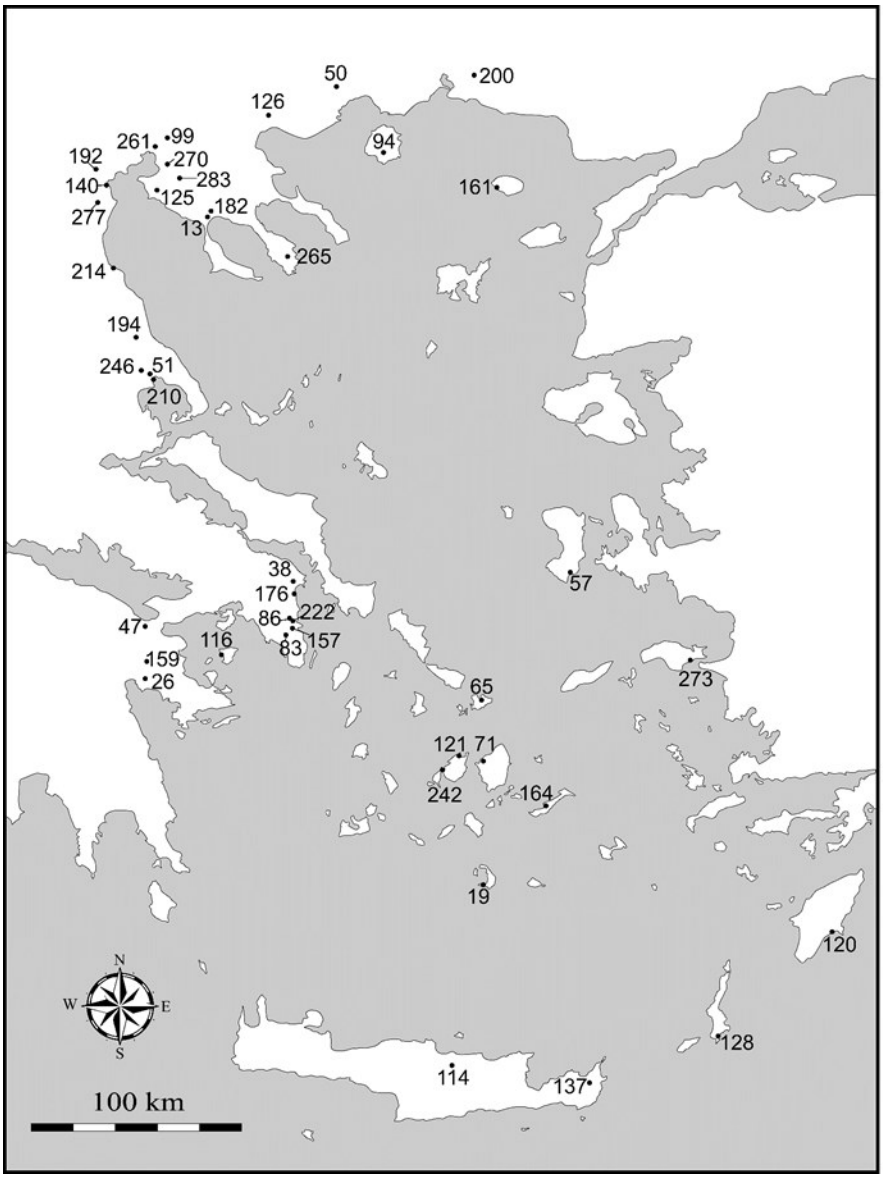

Figure 2.3. LN settlements catalogued. For site number concordances, see Appendix 1.

In the Argolid, habitation is known from Franchthi cave and LN activity is hinted at in a few additional places, though overall, few settlements satisfy the criteria for inclusion.[168] At Lerna, for example, there appears to have been a

[168] There are tentative suggestions of LN activity around the hill at Mycenae (Wace 1957, 197–198) and in caves close to Prosymna (Blegen 1937; Demoule & Perles 1996, 385).

break in occupation between MN and FN.[169] Habitation is more linked to caves during this period than coastal interaction, though it is also clear that at Franchthi there were external contacts of some antiquity.[170] Ultimately, the quantity of data is not sufficient to say anything more certain about the LN Argolid.

The Cyclades on the other hand had considerably higher coastality than any other LN region (LCP1306). A longstanding argument has been made about the placement of these settlements to maximise the contribution of seafood to local subsistence strategies, with Akrotiri, Grotta and Saliagos being key examples.[171] It seems that we can now extend this argument to include more island communities, as Emporio on Chios, Tigani on Samos and Koukoumia on Rhodes follow a similar pattern. The coastal configuration of these regions is at odds with the general patterns seen on the mainland and even on Crete, where the one major LN settlement – Knossos – is away from the coast inland.

This coastal configuration for LN island settlements can be explained as part of an island network to aid survival in newly colonised islands. Communication networks within the new territory and back to the zones of original departure would have been essential to ensure the survival of early settlements, especially in response to food shortage, but also towards the prosperity of communities in terms of intermarriage and information exchange.[172] In addition, the very fact that settlements were positioned on the coast suggests that there was little risk or concern for inter-personal violence from a seaborne direction, suggesting that the networks of contact were stable and not subject to volatility.

The decision to settle by the coast, close to recognisable sheltered bays would have been beneficial for other reasons as well. Practically, such spaces were useful for protecting sea craft in bad weather, though they also served as initial stop off point for settlers and could be inscribed by new settlers with significance. As most other contemporary settlements are in similar locales, they provide an easily understandable syntax for finding other similar settlements in the islandscape. Most of the islands settled in the LN were large and had access to freshwater sources.[173] It was possible, for example on Paros and Naxos, to inhabit the interior rather than the coast (Fig. 2.4). As an additional boon, where there is a shallow bay, there are often also pockets of arable land in the otherwise rocky islands, giving these locations greater desirability

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[169] Vitelli 2007, 115–116.
[170] Paleolithic: Carter 1998, 18; Perlès 1987, 142–145.
[171] Evans & Renfrew (1968, 79–80), backed up by the evidence from the wet-sieving program at the site (Renfrew *et al.* 1968).
[172] Boyd 1989, 641.
[173] Evans & Renfrew 1968, 5; Hadjianastasiou 1988, 11; Sampson 1997, 11; Broodbank 2000, 147.

Figure 2.4. The interior of the island of Naxos. By author.

Figure 2.5. The view of the Naoussa bay of Paros from Koukounaries, where the sheltered bay meets the low-lying arable land. By author.

to settlers, for example in the *Naoussa* bay on Paros (Fig. 2.5), around the *Chora* of Naxos and the bay around *Adamantas* on Melos.

The lack of similar settlements in the Dodecanese, except for Koukoumia, is a surprise, though there is a strong indication for the preference for caves during the Neolithic.[174] Whether similar LN settlements remain uncovered or have subsequently been destroyed by taphonomy or sea-level rise is unknown, though it is remarkable that there is not strong evidence for more LN settlement in the Dodecanese. The same could also be said for Crete, where coastal habitation has not been detected during the LN. Perhaps there were cultural or socio-political reasons for the avoidance of the coast in these regions.

2.3.2 Cemeteries

LN burial grounds are still as under-represented as they were two decades ago.[175] The lack of recognisable burial grounds may indicate that other forms of funerary practices were used, such as excarnation, however, with only one certain LN burial place, there is not enough evidence to make any assertions.

2.4 Final Neolithic

2.4.1 Settlements

The Final Neolithic period (FN) saw an almost doubling of the LN sites per century (10.25 SPC). The increase in settlement numbers led to an increase in settlement in areas not well represented in the LN (Fig. 2.7). The key driver of change in this period appears to be the fragmentation of the LN focus on arable regions to the occupation of more marginal areas, which has had various explanations, leading to a corresponding increase in coastality (Table

[174] Koumelo and Kalythies being two key examples (Sampson 1988c, 10–16).
[175] Cavanagh & Mee 1998, 6.

Table 2.3. Final Neolithic median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. A horizontal line denotes the same value as the preceding period. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

	Argolid (5)	*Attica* (21)	*Crete* (13)	*Cyclades* (9)
LCP median	1920	8183 ▲(+1313)	5544	1484 ▲(+180)

	Dodecanese (4)	*E. Aegean* (3)	*Euboia* (3)	*Macedonia* (7)
LCP median	1277	1190	1301	2737 ▼(-454)

	N.Aegean (6)	*Thessaly* (8)	*Insular* (37)	*Littoral* (45*)
LCP median	714	3304 ▲(+113)	1190 ▼(-571)	4238 ▲(+421)

	Overall (82)
LCP median	2046 ▼(-1038)

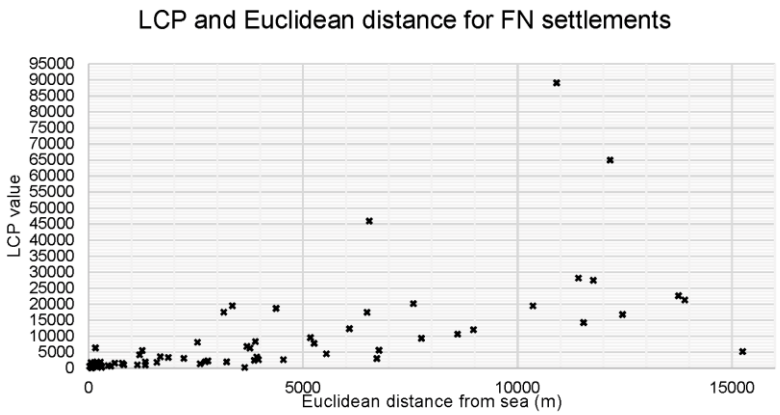

Figure 2.6. Scatter distribution of all settlements included in the FN LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

2.3).[176] It is clear that settlements on islands become more coastal in the FN (LCP1190) and those on the littoral mainland become less coastal (LCP4238).

Beginning with the Argolid, the LN pattern is reversed and trends towards higher coastality (LCP1920),[177] despite the presence of non-coastal settlements.[178] The fragmentation of the LN system led to the establishment of permanent settlements in the region, though overall numbers are still low. The discovery of FN phases at coastal Lerna and Haleis, as well as the more withdrawn Midea and Aspis-Argos suggest that the colonisation of the FN landscape was linked to local choices, a mix of access to coastal networks and arable land.

In Attica, there is a drastic increase in settlement numbers and coastality decreases further (LCP8183) to have the lowest coastality of any region or period in this analysis.[179] This shift can be accounted for by the general infilling of the landscape in the wider FN shift from conglomerate villages towards fragmentation and small-scale occupation of marginal locations, however, the pattern runs contrary to that seen further east in the north Cyclades-southern Euboia area. Sites such as Laimos-Vouliagmeni, Nea Makri and Agia Marna-Varkizan nevertheless indicate the beginning of coastal activity in the region. Attica may have been subject to two adjoining (perhaps at times overlapping) networks, one major network focused in the mountainous interior and arable lands, and another smaller one on the coast as connected to the northern Cyclades, if the spread of Attic-Kephala pottery is an indication.[180]

Crete is anomalous in comparison to the rest of the insular Aegean with considerably lower coastality than other islands (LCP5544). While there were some newly established settlements on the coast, such as at Petras Kephala, Pseria and Priniatikos Pyrgos, most settlements either overlooked the coast from defensive positions or were located inland. The clustering of settlements on the interior of the island lends weight to Crete as a self-sustaining 'quasi-continent', in which communities generated self-sufficiency without the need for outside interaction.[181] In explaining the focus on interior or defensive habitation, it has been suggested that there may have been migration to Crete from

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[176] One of these is the advent of a 'secondary products revolution' at towards the end of the LN (Sherratt 1981; Cherry 1984, 25–26), though this has been opposed (Demoule & Perles 1996, 389). An alternative has been a shift from spring-fed to rain-fed agriculture accompanied by an increase in pastoralism (Wells *et al.* 1990, 222).

[177] For example, Lerna is reoccupied (Banks 2015) and an FN phase is recognised at Haleis in the southern Argolid (Jameson 1969, 311–334; Pullen 2000, 133–187).

[178] Such as Aspis-Argos (**S31**).

[179] Settlements such as Megalo Rimbari (**S156**), Kouremenos Hill (**S123**) and Mavro Vouno Grammatikou (**S152**) are all on hilltops in the more mountainous areas of Attica.

[180] For Attic-Kephala as a concept, see Renfrew (1972, 75–77) and Dousougli (1992). There are similarities in the ceramics between Kephala on Kea (Coleman 1977, 71, nos.134–135) and in the Athens Agora (Immerwahr 1971, 23, no. 8)

[181] Broodbank 2000, 41. Settlements such as Lamnoni (**S131**), Petalota (**S206**) and Kavousi Azoria (**S101**) highlight this point. For concept of mini-continents, see Braudel (1972, 150–151) and see the similar "match-box" continent concept (Held 1989, 10).

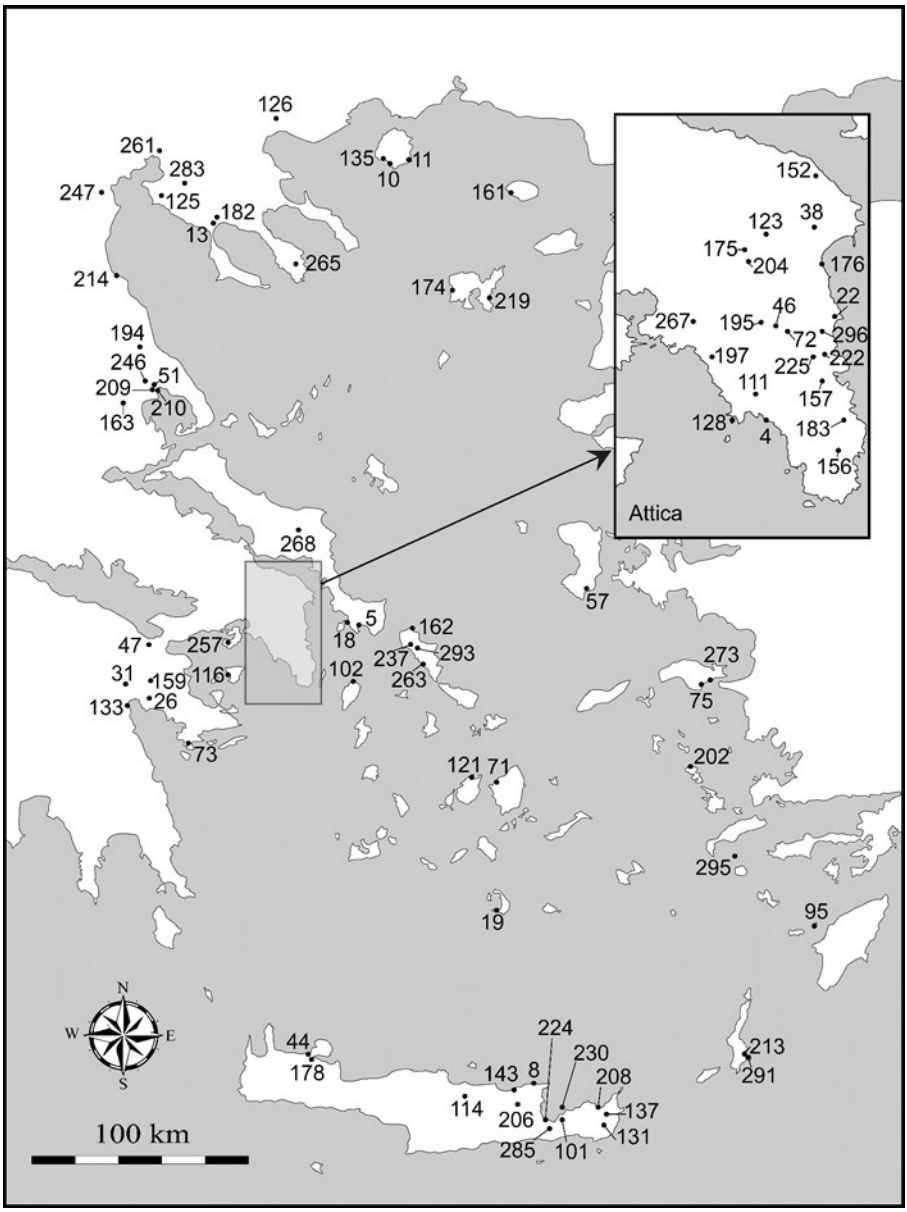

Figure 2.7. FN settlements catalogued. For site number concordances, see Appendix 1.

people outside of the island, to whom defensive locales were a logical step in unknown terrain.[182] However, a more recent and convincing argument centres on the link between interior, defensive sites and the contemporary establishment of coastal sites as part of a dichotomy between newcomers and pre–existing islanders, with newcomers settling beside the coast.[183] The mixed pattern on Crete presents a lower overall coastality for the region and a general movement toward the coast on Crete lags the rest of the Aegean.[184]

There is a concentration of coastal occupation (LCP1563) in the northern Cycladic area, especially at Strofilas on Andros and Kephala on Kea, though this could also include Agia Pelagia on southern Euboia.[185] The lack of inland settlements in the Cyclades suggests that a coastal focus is a key feature of Kephala culture settlements.[186] A key development is a focus of habitation on coastal capes, slightly elevated locales that overlook the coast and could be defended through the erection of an encircling wall. These locations indicate a desire to overlook the coast and interact with it, whilst also retaining some care for safety.[187] These types first appear in the north Cycladic-Euboia area in the FN, before spreading more widely from the beginning of the EBA onwards. Most of these settlements are not close to arable land, so we are likely seeing the adoption of pastoralism as a central survival strategy, supplemented by the sea, allowing settlements to exist in elevated locations. View-sheds make these locations perfect bases for raiding, either predating on unlucky seafarers or other coastal settlements.[188] In addition, increasing evidence places the first appearance of longboat technology during this period, rather than later.[189] The sea could have been a place of opportunistic gain and central to the maintenance of society and to pre-empt slightly, this could be have been

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[182] For defensive FN settlements on Crete, see Nowicki 2002. Some have argued for the arrival of people from either Anatolia or the Cyclades (Warren 1974, 42–43; Hood 1990, 367–375;), while others have suggested population growth in addition to smaller numbers of migrants to Crete (Watrous 1994, 703–704).

[183] Nowicki 2008, 225.

[184] However, the recent recognition of Attic-Kephala ceramic forms at Petras Kephala (Papadatos & Tomkins 2013, 365–381) may suggest that some parts of Crete were more in tune with Aegean contact networks than other parts or that incomers may have originated in the FN Aegean islands.

[185] The similarities between the northern Cyclades and Euboia during this time has implications for the status of Euboia, which is at times considered an extension of the Greek mainland, while at others an "island continent". The settlement pattern of the Karystia seems to follow that of the northern Cyclades and there is a debate to be had as to whether we should consider southern Euboia as part of the Cyclades in this and later periods. See Tankosić (2011) for a more in-depth analysis of the FN–EBA transition in southern Euboia.

[186] Broodbank 2000, 149.

[187] Examples include Strofilas (**S263**), Kephala (**S102**), Vriokastro (**S293**) in the Cyclades, to which may add Kastro Alimia on the tiny island of Alimia in the Dodecanese (**S95**).

[188] Koutsoukou 1993.

[189] Papadatos & Tomkins 2013; Nazou 2020.

materialised in the maritime themes represented in the rock-peckings found at Strofilas on Andros, discussed more in Chapter 5.[190]

The lack of FN settlements further south in the Cyclades poses a few problems. FN settlements are not known on Paros, Melos or Amorgos and only few settlements show evidence of continuity throughout LN–EB I.[191] This leads to the question of whether the Attic-Kephala ceramic culture, as a network focused on southern Euboia, northern Cyclades and eastern Attica was a contemporary and perhaps competing network to the LN Saliagos network. The coastal Saliagos type settlements could have been targets for raiding and the abandonment of LN coastal settlements could be linked to this, which may have accelerated the importance of seascapes to some communities in the FN Cyclades.

The North Aegean islands see an increase in settlement numbers and all are immediately on the coast. The location of these settlements differ significantly from those seen further south in the contemporary Cyclades, indicating that whatever concern for safety was present in the Cyclades was not replicated further north. Myrina, Mikro Vouni, Poliochni and Agios Antonios Potou are all immediately on the coast and suggest that there was a coastal facing network present in the northern Aegean that at this point did not spread further south.

The LN settlement patterns in Macedonia and Thessaly for the most part continue in the FN. In Macedonia, a subtle shift to the coast is noticeable (LCP2737), though no settlements can be classified as coastal, with the closest Agios Mamas, being a tell site overlooking a coastal plain. In Thessaly, there is evidence for nucleation at some sites, which appear to expand.[192]

The FN evidence suggests that the character of human-sea interaction shifted from that seen in the LN. Defensible settlements overlooking the coast are evident across the Aegean (Cyclades, Euboia, Crete, Dodecanese) suggesting that human-sea interaction may have taken on a more violent character than seen in the previous period. On the littoral mainland there are a variety of localised configurations, from an overall reduction of coastality in Attica, to a mixed though considerably more coastal pattern in the Argolid. The driving factor in the shift in settlement patterns in the FN is likely to have been the adoption of new foodways,[193] which seems to have had a particularly profound effect on life in the islands, leading to the gradual focus of settlement on defendable coastal capes.

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[190] Televantou 2008, 47–48.
[191] FN pottery has been recognised at Akrotiri on Thera (Sotirakopoulou 2008, 123–124) and in the Zas Cave on Naxos (Zachos 1999, 153).
[192] Gallis 1992, tables 5–7, 9, 11.
[193] Sherratt 1981; Cherry 1984, 25–26; Wells *et al*. 1990, 222.

2.4.2 Cemeteries

FN burials remain underrepresented though there is a slight increase in numbers from the preceding period. With only ten examples, however, it is difficult to assert anything conclusive. As with the LN there is not enough evidence to draw meaningful conclusions.

2.5 Early Bronze I

2.5.1 Settlements

An explosion in settlement numbers (40.67 SPC) occurred in EB I (Fig. 2.9).[194] This increase is a continuation of the gradual infilling of the landscape that began in the FN period (Table 2.4A). Overall, coastality remains much the same (Fig. 2.1:EB I) as it had in the FN (LCP2036). On average, insular regions become slightly less coastal (LCP1556), while on the littoral mainland the reverse trend is true (LCP3597).

More coastal settlements are established in the Argolid indicating a shift towards the coast (LCP1030). Sites such as Lerna, Asine and Labayanna attest to the importance of coastal networks, though there is also occupation of the interior.[195] Attica also sees a shift towards the coast, though the overall value is still indicative of lower coastality (LCP5544). A huge number of EH I settlements have been recognised in Attica, which attests to population expansion and fragmentation across the region. The overall pattern for Attica is still mixed, though there are more coastal settlements known, for example Agios Kosmas and Askitario. The discovery of metal litharge fragments at several settlements in Attica demonstrates the increasing significance of metal production and exchange, which is a likely explanation for increasing coastality,[196] both for exchange as well as the effective draught for the smelting process.[197] The establishment of settlement on the coasts of Euboia also attests to the increasing importance of the Euboian Gulf, with sites such as Manika and Eretria Magoula being immediately on the coast.[198] For the rest

[194] From this point onwards, regional terminologies are used to describe chronological phases in the Bronze Age, i.e. Early Minoan (EM), Early Cycladic (EC) and Early Helladic (EH). When referring to Aegean-wide developments, however, EB is used.
[195] Cycladic marble figurines and Cycladic pottery are known from Delpriza in the southern Argolid (Kossyva 2019) and the Apollo Maleatas sanctuary inland at Epidavros (Lambrinoudakis 2019).
[196] See Kayafa (2020, 193–201) for recent evidence.
[197] Stos-Gale 1993, 125.
[198] Sampson 1985; Sapouna Sakellaraki 1987.

Table 2.4. Early Bronze I median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

A. Settlement

	Argolid (9)	*Attica* (29)	*Boiotia* (3)	*Corinthia* (3)
LCP median	1030▼(-890)	5251▼(-2932)	2628	10242
	Cyclades (11)	*Crete* (28)	*E. Aegean* (6)	*Macedonia* (10)
LCP median	1159▼(-325)	3309▼(-2235)	554	3125▲(+388)
	N. Aegean (8)	*Saronic* (3)	*Thessaly* (5)	*Insular* (58)
LCP median	620	649	4577▲(+1273)	1373▲(+183)
	Littoral (62*)	*Overall* (120)		
LCP median	3597▼(-641)	1989▼(-57)		

B. Cemetery

	Argolid (3)	*Attica* (7)	*Crete* (19)	*Cyclades* (28)
LCP median	794	891	17401	3491

	Insular (48)	*Littoral* (10)	*Overall* (58)
LCP median	4025	843	3491

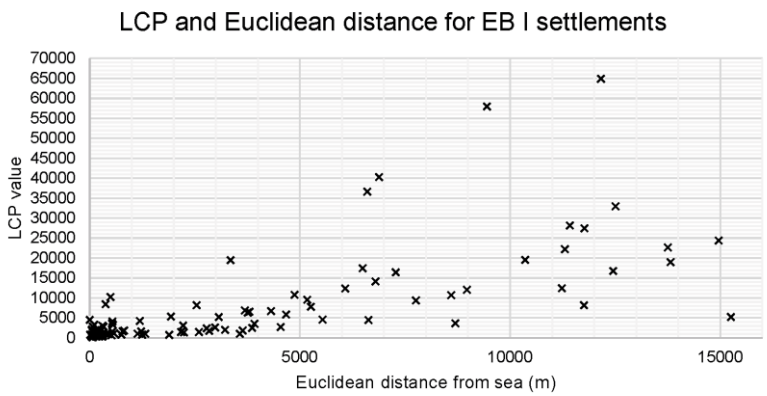

Figure 2.8. Scatter distribution of all settlements included in the EB I LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

of Euboia the EH I evidence is scant, suggesting either an under-reported habitation of the upland regions, such as at Tharrounia, or that there were not many EH I settlements on Euboia.

Cretan settlement patterns become slightly more coastal (LCP3309) and settlement numbers increase drastically. This variability suggests that there were differing attitudes towards the relationship with the coast. The FN trend continues overall in that defensive, upland locations are preferred though increasing EM I occupation around *Chania* and *Heraklion* suggest that coastal networks were becoming more significant on Crete.[199]

In the Cyclades, there is a shift to the coast (LCP1159), though this does not tell the whole story.[200] Several FN defensive sites were abandoned, with settlements shifting to low coastal peninsulas, such as at Agia Irini on Kea and Vathi on Astypalaia, while there is evidence for habitational continuity at Akrotiri and Grotta. Despite this, there are settlements established in defensive positions such as at Markiani on Amorgos and Spedos on Naxos. At Markiani, it is clear that imported pottery was not common, though the site appears to have had small-scale external contact evinced through imported obsidian.[201] EC I settlements were small and so it is likely that survival was ensured through small-world interaction networks, in which coastal access was an important feature of society.[202] This in many ways is similar to the pattern established in the LN and the uniformity across the Cyclades in EC I Grotta-Pelos culture shows that there was a great deal of cultural similarity across the archipelago, not entirely evident in the preceding FN. The EC I network appears to have been a stable, small-world intra-Cycladic network, where a lack of competition (and threat) fostered higher coastality.[203] This lack of threat can be posited in the general lack of defensive or fortified settlements and the existence of small coastal settlements.

In the north and east Aegean islands, there is an increase in settlement numbers with both regions having a coastal configuration. The ceramic connections between some of these sites, e.g. Thermi on Lesbos, Heraion on Samos and Poliochni on Lemnos, suggest a strong and stable north-east Aegean network in contact with the Anatolian coast.[204] While there is some evidence for

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[199] For Cycladic imports at EM I Poros-Katsambas (**S220**), see Wilson *et al*. (2004, 69; 2008, 261–270).

[200] Renfrew 1972, 157; Doumas 1972, 154.

[201] Obsidian is present at Markiani (**S149**) but not in abundant supply throughout the EBA, suggesting that the settlement was on the outside of Aegean exchange networks (Angelopoulou 2006). Obsidian has been recovered more commonly in tombs of EC I, see Carter 1998, 140–141.

[202] Broodbank 2000, 175–210.

[203] EC I appears to show a shift to inter-island Cycladic contact rather than longer-range networks (Broodbank 2000, 167).

[204] See Kouka (2002, 299) for the northeast Aegean island and west Anatolian "koine*"* of EB I. Similarities in ceramics have been noted between the black period of Poliochni and Liman Tepe in particular (Şahoğlu & Sotirakopoulou 2011, 257).

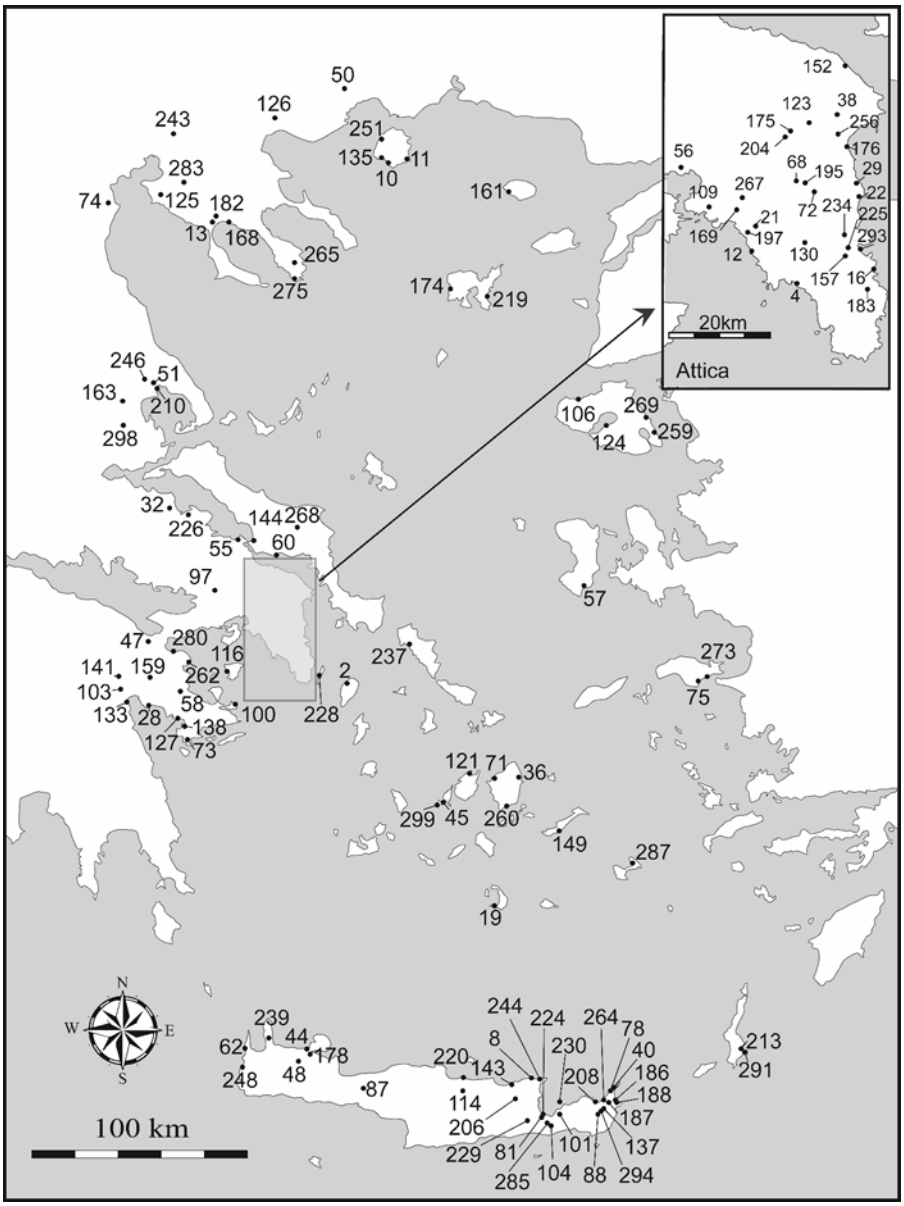

Figure 2.9. EB I settlements catalogued. For site number concordances, see Appendix 1.

settlement in the Dodecanese,[205] the resolution of the evidence is too low to fit the criteria of inclusion. Future excavation of known EBA settlements in the region will help to clarify local developments.

[205] Georgiadis 2012, 191–194.

Macedonia, while exhibiting lower coastality in EB I (LCP3125), sees an increase in coastal settlement, due to an overall increase in settlement numbers. Coastal settlements such as Toroni and Molyvopyrgo suggest that there may have been a concerted effort for Macedonian settlements to take advantage of sea-focused networks, possibly stimulated by the exchange of local mineral resources.[206] The Chalkidike region in particular, appears to have had fewer connections after this period with the Bronze Age Balkans and more with the insular Aegean.[207] The expansion and stability of the North-East Aegean network may have stimulated this shift, though it is clear that there are also inland settlements.

In Thessaly, the coast appears to have receded considerably from the once-coastal Dimini,[208] though habitation continues throughout at coastal Pevkakia. In the region, there is an overall reduction in settlement numbers. For most of the Bronze Age, Thessaly appears increasingly disconnected with Aegean developments, with the exception of the settlements on the Pagasitic bay coast. The lack of settlements in the study area suggests a shift further inland or site abandonment and nucleation at others.

Almost everywhere in EB I sees an increase in coastality suggesting that communities were becoming more engaged with coastal networks and therefore by extension the sea. An increasing interest in metals could account for this shift toward the coast, either to take advantage of coastal networks or as efficient places to carry out the smelting.[209]

2.5.2 Cemeteries

A feature of EB I is the marked increase in the number of cemeteries (Table 2.4B) in the catchment area (19.33 SPC). Most coastal cemeteries are in close association to another settlement (Fig. 2.10), such as those at Agios Kosmas and Asteria Glyphada in Attica. Several inland counterparts probably remain undetected, as several settlements are located inland during this time, leading to an under representation of EH I tombs inland.[210] The appearance of Cycladicising pottery in some burial grounds in Attica suggests external contact through the coast.[211] Evidence is scanty in the Argolid.[212]

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[206] Renfrew 1972, 53–54; Morris 2009, 5.
[207] Morris 2009, 3.
[208] Zangger 1991, 1–15.
[209] Tzachili 2008, 12–15.
[210] Rutter 1993, 767.
[211] Cycladic-type pottery was reported from the cemetery inland at Aigaleo (Asimakou & Paschali 2020, 325–330) and at Tsepi (Pantelidou Gofa 2008, 284–285).
[212] High in the uplands of eastern Argolid a small cemetery was excavated at Apollo Maleatas (**C40**), commingled remains of multiple skeletons were reported from Delpriza Kranidi (**C60**) and a single cist grave was discovered on an eroded beach at Agioi Anargyroi (**C7**) in south-eastern Argolid.

In southeast Paros there was a remarkable concentration of cemeteries in EC I. All are either directly on the coast, or on slightly elevated ground overlooking the coast.[213] Despite this, there is scant evidence of settlement.[214] It is possible that each of the few known settlements in the area established multiple cemeteries, or that people came to the area from other parts of the island to bury their dead. Despite this concentration of cemeteries in southeast Paros, there are also contemporary cemeteries in other parts of the island.[215] Naxos sees a similar divergence in burial location in EC I. Most cemeteries are located on or close to the coast,[216] though there is a concentration of cemeteries in the region around *Sangkri*, further inland.[217] No large settlement has yet been found in the interior to serve these cemeteries, though given the fertile nature of the interior valleys of Naxos, there ought to be one or several settlements in the vicinity, which may subsequently have been destroyed or remain uncovered. The placement of burial grounds indicates that there was an element of choice of where to live and bury the dead in large islands such as Naxos and Paros.

By contrast to the Cyclades, Cretan cemeteries were much less coastal (LCP17401). The Neolithic cave burial tradition continued into EM I.[218] The use of rock shelters for formal burial was also common, mostly in the central and eastern parts of Crete. The use of rock shelters and caves is not informative in determining a preference for coastal burial, as their locations are dependent more on local geology and concentrated in the mountainous areas of

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[213] Drios (**C65**), Pyrgos (**C183**), Galana Krimna (**C68**) and Glypha (**C70**) are coastal, while Panagia (**C161**) is set back a little from the coast. Galana Krimna is of a nonspecific EBA dating, and has been included as an EB I cemetery on the basis of several similar burial types in the vicinity. Mnimoria has been omitted due to uncertainties about its location, as were Messada, Kostos and Kamari (Renfrew 1972, 515 nos. 7, 9, 11, 14). The find spot Renfrew (1972, 515 no. 10) records as "Tsipidon" has been omitted as no tombs were discovered.

[214] A small settlement was posited at Pygros, though little remains to be sure (Tsountas 1898, 158, 168; Renfrew 1972, 515 no.13). Another settlement further west at Avyssos was suggested, though like Pyrgos, this is another settlement found with a small burial ground in close proximity (Tsountas 1898, 139, 175; Renfrew 1972, 515, no.6). EC I architectural evidence is generally scanty, suggesting that people in this period may have lived in wooden structures leaving little archaeological trace (Doumas 1972, 151–156.).

[215] Panagia (**C161**) is set back from the coast, while Lefkes (**C110**) is located in the centre of the island and Plastiras (**C175**) is coastal.

[216] Such as Kampos tis Makris (**C83**), Karvounolakkoi (**C85**), Keli (**C91**), Phyrroges (**C171**), Polichni (**C177**) and Akrotiri (**C27**).

[217] Including Aphendika (**C35**), Agioi Anargyroi (**C6**) and Tsikniades (**C206**). Omitted from discussion are Palati, Pherendaki, Melanes, Kameno Mitato, Agioso, Roon, Vardaki, Phionda, Kleidos, Bebekos, Xerakrotiro, Lygaridia and Moutsounas due to unclear phasing or an inability to locate the cemetery. See Renfrew (1972, 517–519, nos. 3, 5, 10, 12, 18, 19, 26, 27, 28, 29, 30, 34 and 35) for further references.

[218] For example at Agios Charalambos (**C10**) and Karydi (**C86**), both of which were inland. Burials are attested at both cave sites on the basis of stratified ceramics and human skeletal material. At the coastal cave at Agios Ioannis (**C13**) in western Crete, disturbed remains point toward a FN/EM I transitional use of the cave as a burial ground.

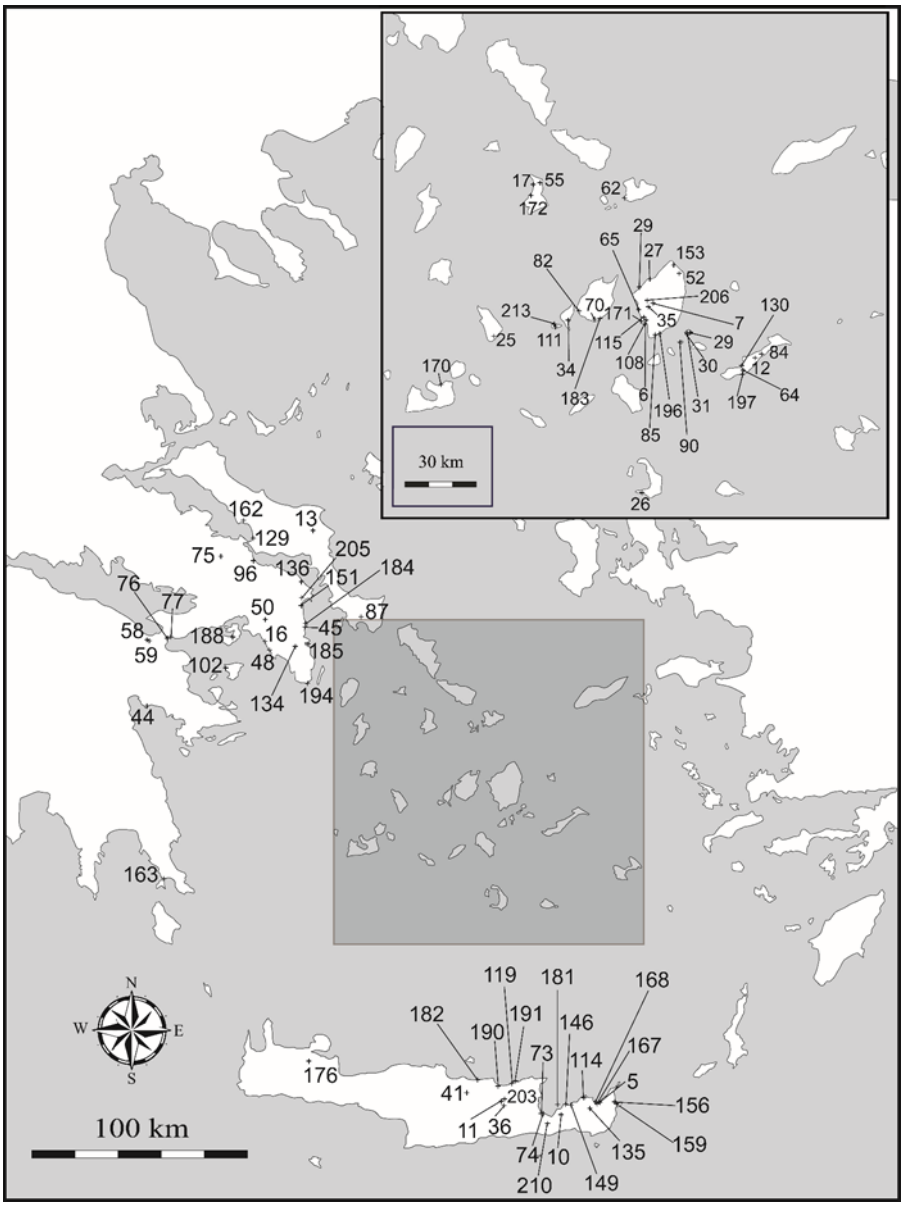

Figure 2.10. EB I cemeteries catalogued. For site number concordances, see Appendix 1.

Crete. More informative, however, is the appearance of higher numbers of extramural cemeteries. Most formal burial occurs further inland,[219] though there are coastal examples, predominantly along the north coast area.[220] Generally, on Crete, there is a range of motivations for the placement of cemeteries, ranging from the utilisation of inland movement routes, to the use of a more coastal position in relation to settlement.

2.6 Early Bronze I/II–IIA

2.6.1 Settlements

There is a slight reduction in the number of settlements (Fig. 2.1:EB I/II–IIA) of this period compared to the previous (32.22 SPC). A substantial number of these come from islands (Fig. 2.12). Settlement patterns of this period are more coastal than those of EB I (Table 2.5A), which ties in well with EB IIA being a period of 'international spirit', a medium-distance pan-Aegean exchange network, seemingly centred on the Cyclades.[221] EBA exchange networks appear to have played a key role in the functioning of communities,[222] and may have been as much to do with the promotion of social cohesion as economic gain.[223] Exchange networks appear to have moved a range of goods, including obsidian,[224] andesite,[225] and metals,[226] with metals appearing to be increasingly important as the EBA wears on.[227]

In the Argolid there is a slight reduction in coastality during this period, though many of the coastal settlements of EH I are still inhabited. It appears that there is a process of infilling of the landscape, which accounts for the reduction in coastality. Many settlements can be found on hilltops close to good agricultural land.[228] Important to note is that while the Argive plain is well represented in the analysis, a major area of occupation inland in the Nemea valley falls outside the study area and is indicative of the importance of inland, arable areas in addition to coastal areas.[229]

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[219] For example at Nea Roumata (**C152**) and Kephali Sphendyli (**C95**).
[220] Such as at Gournes (**C72**) and Gournia Sphougaras (**C74**). Legarra Herrero 2014, 141–144.
[221] Renfrew 1972, 451–455.
[222] van Andel & Runnels 1988, 237; Sampson 1988b, 5–10; Cosmopoulos 1991, 155–168; Broodbank 2000.
[223] Rutter 1993b, 19–37.
[224] Torrence 1986; Carter 2008, 225–235.
[225] Runnels 1985, 30–43.
[226] McGeehan-Liritzis 1983, 147; Stos-Gale & Macdonald 1991, 249–287; Day & Doonan 2007.
[227] Tzachili 2008, 12–15.
[228] Harrison 1992, 243–244; Mee & Taylor 1997, 42; Pullen 2008, 22–23.
[229] Key settlements such as Tsoungiza (Pullen 2011) and Zygouries (Pullen 1985) are therefore not included in this analysis.

Table 2.5. Early Bronze I/II–IIA median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. A horizontal line denotes the same value as the preceding period. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

A. Settlement

	Argolid (13)	*Attica* (31)	Boiotia (3)	Corinthia (4)
LCP median	2747 ▲ (+1717)	3372 ▼ (-1879)	2628 ▬	11133 ▲ (+891)
	Crete (15)	*Cyclades* (30)	*E. Aegean* (7)	*Euboia* (12)
LCP median	1609 ▼ (-1700)	1759 ▲ (+600)	631 ▲ (+77)	966
	Macedonia (8)	*N.Aegean* (7)	*Saronic* (9)	Thessaly (3)
LCP median	3125 ▬	588 ▼ (-32)	694 ▲ (+45)	277 ▼ (-4300)
	Insular (70)	*Littoral* (53*)	*Overall* (145)	
LCP median	970 ▼ (-403)	2677 ▼ (-920)	1442 ▼ (-547)	

B. Cemetery

	Attica (11)	*Corinthia* (4)	*Crete* (23)	*Cyclades* (35)
LCP median	1197 ▲ (+306)	10593	1653 ▼ (-15748)	1994 ▼ (-1497)
	Euboia (4)	*Insular* (59)	*Littoral* (23)	*Overall* (82)
LCP median	7032	1972 ▼ (-2053)	1262 ▲ (+419)	1663 ▼ (-1438)

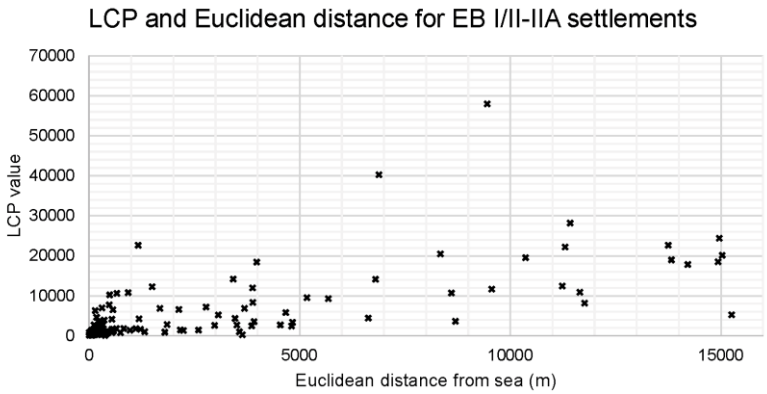

Figure 2.11. Scatter distribution of all settlements included in the EB I/II–IIA LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

In the Argolid there is a reduction in coastality during this period, while many of the coastal settlements of EH I are still inhabited. It appears that there is a process of infilling of the landscape, which accounts for the reduction in coastality. Many settlements can be found on hilltops close to good agricultural land.[230] Important to note is that while the Argive plain is well represented in the analysis, a major area of occupation inland in the Nemea valley falls outside the study area and is indicative of the importance of inland, arable areas in addition to coastal areas.[231]

Attica meanwhile continues its trend towards increasing coastality. This is a result of the abandonment of several inland FN/EH I settlements and continuity at coastal settlements, from which several display ceramic links with the Cyclades.[232] While this is true, there are still a considerable number of inland settlements particularly focused on the Mesogeia plain and the area around *Kifissia*, though certainly the pattern over time becomes more coastal.

On Euboia, several coastal sites emerge during this period (LCP966).[233] The trend is particularly strong, which suggests that new settlements were founded exclusively in coastal locations. It appears that EH II is another period during which Euboia leans more towards being more of an island than part of the Greek mainland, with a focus on island networks.[234] The concentration of Cycladic imports particularly at Manika is illustrative.[235] In particular, it appears that the Euboian strait increases in importance, as several settlements are located on each side of its shores.[236]

The main areas of EH habitation in Boiotia and Phthiotis lie outside the study area.[237] Coastal areas were apparently avoided and the main developments of the region took place inland, in arable valleys.[238]

On Crete there is an increasing shift towards the coast and by EM II, the pattern is considerably more coastal than that seen in the FN–EM I (LCP1609). A number of settlements are located beside the coast,[239] though

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[230] Harrison 1992, 243–244; Mee & Taylor 1997, 42; Pullen 2008, 22–23.
[231] Key settlements such as Tsoungiza (Pullen 2011) and Zygouries (Pullen 1985) are therefore not included in this analysis.
[232] See Nazou (2014, 158–159) for similarities in pattern-painted pottery between the Cyclades and Attica as well as the use of grog-tempered ceramic fabrics (2013, 214). See also Wiencke (2000, 618).
[233] Amarynthos (**S23**), Lefkandi (**S132**) and Manika (**S144**).
[234] Tankosić 2011.
[235] Sapouna-Sakellarakis 1987, 236, 263; Sampson & Hadji 2019, 164.
[236] Eretria (**S59**), Amarynthos (**S23**), Manika (**S144**) on the south coast of central Euboia and Askitario (**S29**) and Raphina (**S236**) on east coast of Attica.
[237] For example at Lithares (Tzavella-Evjen 1974), Eutresis (Caskey & Caskey 1960) and Thebes (Aravantinos 1986, 62).
[238] Harrison 1992, 243–244; Mee & Taylor 1997, 42; Pullen 2008, 22–23.
[239] Petras: Hill 1 (**S207**), Priniatikos Pyrgos (**S224**) and Mochlos (**S166**).

there is continued, though reduced, habitation of the mountainous interior.[240] Nucleation has been suggested for the coastal settlements of EM II, suggesting an increasing attractability of coastal habitation.[241] However, it has also been correctly argued that many fertile plains of Crete are in coastal areas so a shift to the coast does not necessarily mean a focus on just maritime networks, rather a mixed strategy between agriculture and external exchange could have been pursued.[242] The presence of extra-island imports, however, is a convincing case for the incorporation of Crete into coastal networks focused on the Aegean islands.[243]

Cycladic settlement patterns are less coastal than in EC I (LCP1759), though populations appear to have grown and settlements expand throughout the islandscape.[244] Several newly founded or refounded EC II settlements are placed in defensive locations, which requires further elaboration.[245] It has been argued that only a few large settlements controlled longboat seafaring.[246] In this type of network, the relationship between peoples via the sea may not always have been friendly and, despite the interconnectedness of the archipelago, it seems that some settlements occupied areas further inland.[247] Larger settlements, however, such as Dhaskalio, Agia Irini and Skarkos were coastal suggesting a lack of concern for defence at this time. The potential for tension or conflict in the system may have led to slightly reduced coastality, as smaller coastal settlements are unlikely to have been able to defend themselves in the face of assault by longboat crews, which can be observed in this analysis. This tension, however, appears to have had implications for the significance of the sea, leading some communities to invest heavily in the seascape as a place of importance, such as at Chalandriani.[248] This importance may have been amplified by the central role seemingly played by Cycladic seafarers in inter-Aegean contact, evinced through the recovery of Cycladic imported material culture in an arc from Crete to Euboia, including Attica, the Saronic Gulf and the Argolid.[249] This network could also

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[240] Debla (**S48**) occupies the uplands to the west of the island, Tylissos (**S279**) is in the more elevated area west of *Heraklion* and Psathi (**S229**) is located in the uplands south of *Agios Nikolaos*.
[241] Watrous 1994, 705; Hayden 2003a, 40–41.
[242] Georgiadis 2012, 183.
[243] Karantzali 2008; Papadatos 2008; Betancourt 2008; Catapoti 2011; Papadatos & Tomkins 2013; Betancourt *et al*. 2016.
[244] Angelopoulou 2016, 134.
[245] These include Koukounaries (**S121**) on Paros, Mantres tou Roussou (**S146**), on Amorgos and Panormos on southern Naxos. Each have access to sheltered bays though occupy elevated locations. This is in addition to the pre-existing occupation at Markiani.
[246] Broodbank 2000, 211–222.
[247] For example on Naxos at Avdheli (**S34**) and further inland around *Sangkri*.
[248] Broodbank 2000, 212.
[249] Argolid: pottery from Tiryns (Attas *et al*. 1987, 88) and Lerna (Caskey 1960, 292, pl. 69e), Thorikos (Nazou 2014, 321).

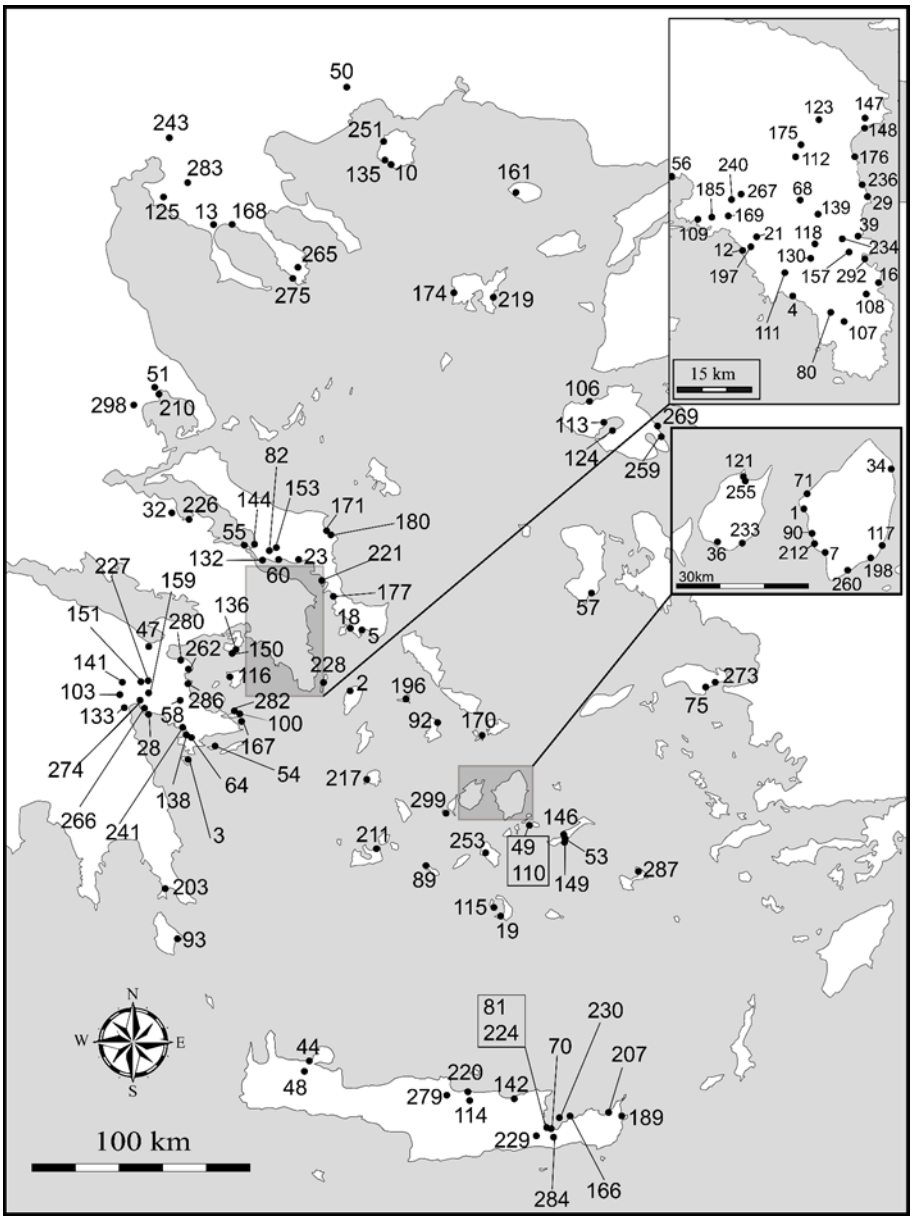

Figure 2.12. EB I/II–IIA settlements catalogued in this study. For site number concordances, see Appendix 1.

have extended further east, if Cycladic imports on the coast of Anatolia are any indication.[250]

The settlement patterns seen in the north and east Aegean islands continue unabated, where settlements were, as a rule, coastal. While there appears to have been some contact between these regions and the Cycladic 'international spirit' networks further south, settlements of this region appear to be interconnected but set apart from the networks further south. These sites, however, have been argued to have been key players in the movement of metals during this time, connecting central Anatolia perhaps with the southern Balkans.[251] The sea therefore was a source of network access without concern for safety in the northern and eastern Aegean in this period.

In Macedonia and Thessaly, settlement patterns continue to be mixed, with coastal settlement and inland settlement evident in both regions. There is a decrease in settlement in Macedonia from earlier in FN/EB I, suggesting nucleation at those settlements remaining.[252] In Thessaly, there is little change from the preceding period, where habitation is concentrated solely on the coast of the Pagasitic Gulf.[253]

A final comment can be made about the Saronic Gulf. In EH II, several small settlements are founded in the islands of the Saronic, as well as in the regions bordering it.[254] This attests to the significance of coastal networks in this region and in particular the Saronic Gulf, connecting southern Attica, the Corinthia and the Argolid with the Cyclades.[255]

EB I/II–IIA is a flashpoint period in Aegean prehistory which witnessed the largest intra-Aegean contact network known so far. This network appears to have stimulated a shift to the coast for most regions, particularly in the southern Aegean, while the northern Aegean appears to be largely unchanged from EB I. The exception here is in the Cyclades where the monopolisation of maritime activity by a few places may have led to a reduction of coastality.

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[250] For the Cycladic islanders as the "middle-men", see Renfrew (1972, 451–455). For Cycladic imports found in EB II settlements on the western coast of Anatolia, see Şahoğlu (2011, 172–174).
[251] Broodbank 2000, 293; Stos-Gale 1992; Nakou 1997.
[252] Grammenos 1997, 281–282.
[253] Sites such as Volos (**S290**), Pevkakia (**S210**) and Dimini (**S51**) have evidence of contemporary habitation.
[254] There are several settlements in an arc in and around the Saronic Gulf, such as Agios Kosmas (**S12**) and Eleusis (**S56**) in Attica, Stiri (**S262**) and Vagia (**S280**) in the Corinthia, Lykopoulou on Salamis (**S136**), Kolonna on Aegina (**S116**) Kavos Vasili (**S100**) and Variarnia (**S282**) on Poros and Modi (**S167**) off the coast of Poros.
[255] Georgiadis 2012, 185.

2.6.2 Cemeteries

Burial grounds in EB I/II–IIA are considerably more coastal than in EB I (Fig. 2.13). This shift is more a result of the considerable increase in coastal cemeteries on Crete (Table 2.5B), than developments elsewhere, which appear to continue in a similar vein from EB I.

In Attica, EH II burials are known further inland, such as at the acropolis of Athens and at Markopoulo Kopreza, though the majority can be found in coastal locations. The rock-cut chamber tomb cemetery at Asteria Glyphada, located on a rocky promontory surrounded by the sea on all sides, is a good example of the types of spaces preferred for burial.[256] The discovery of a large pit containing a variety of vessels and funerary paraphernalia gives the impression of funerary rituals taking place within a coastal space, perhaps significant given the Cycladic pottery found in tombs both inland and in coastal places,[257] and this may be mirrored in the practices represented in other coastal burial grounds as well.[258]

Intriguing are the cemeteries Sounio and Raphtopoulo, where in the former eroded cists were reported and, in the latter, it seems a small offshore islet was used for the burial of the dead.[259] No EBA settlement has been located at Sounio, yet it is a prominent navigational point for sailing around Attica and this may have informed the choice to bury the dead in this location, a space inscribed with mnemonic meaning as part of maritime movement routes. The bay around *Porto Rafti* is deep and the Raphtopoula islet was not connected to the mainland in EB I–IIA.[260] The use of an offshore islet, therefore, required interaction with the sea in the performance of funerary practices and suggests that these locations could be considered important enough to receive the dead. The transport from the settlement towards the islet by boat may have been a significant journey of physical and metaphysical significance to the deposition of the dead.

The establishment of a cemetery at Agia Photia on the north coast of Crete in EM I/II is the beginning of a trend towards the greater use of coastal space for burial. By the start of EM IIA, house tombs are constructed on the northern coast and the majority of cemeteries are now located in coastal places close to

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[256] Other examples include Agios Kosmas (**C15**), Askitario (**C45**) and Nea Makri (**C151**).
[257] For example at Aigaleo (**C22**) (Asimakou & Paschali 2020, 325–330), Asteria Glyphada (**C48**) (Kaza-Papageorgeou 2020, 311, fig. 3) and Agios Kosmas (**C15**).
[258] The cemetery at Agios Kosmas was divided into two parts, each located beside the entranceway to the settlement, directly next to the sea (Mylonas 1959). At Askitario, the cemetery is unexcavated and could be located on a rocky spur on the coast (Weiberg 2007, 246).
[259] Theocharis 1955, 283–290.
[260] A possible EH I or EH II cemetery on the islet of Raphtopoula (**C185**) is suggested by surface sherds and cist slabs (Theocharis 1955a, 287; 1955b, 115; Weiberg 2007, 233). Here the cemetery is located around 1.3km to the east of the Vourleza-Porto Rafti settlement (**S292**), to which it likely served.

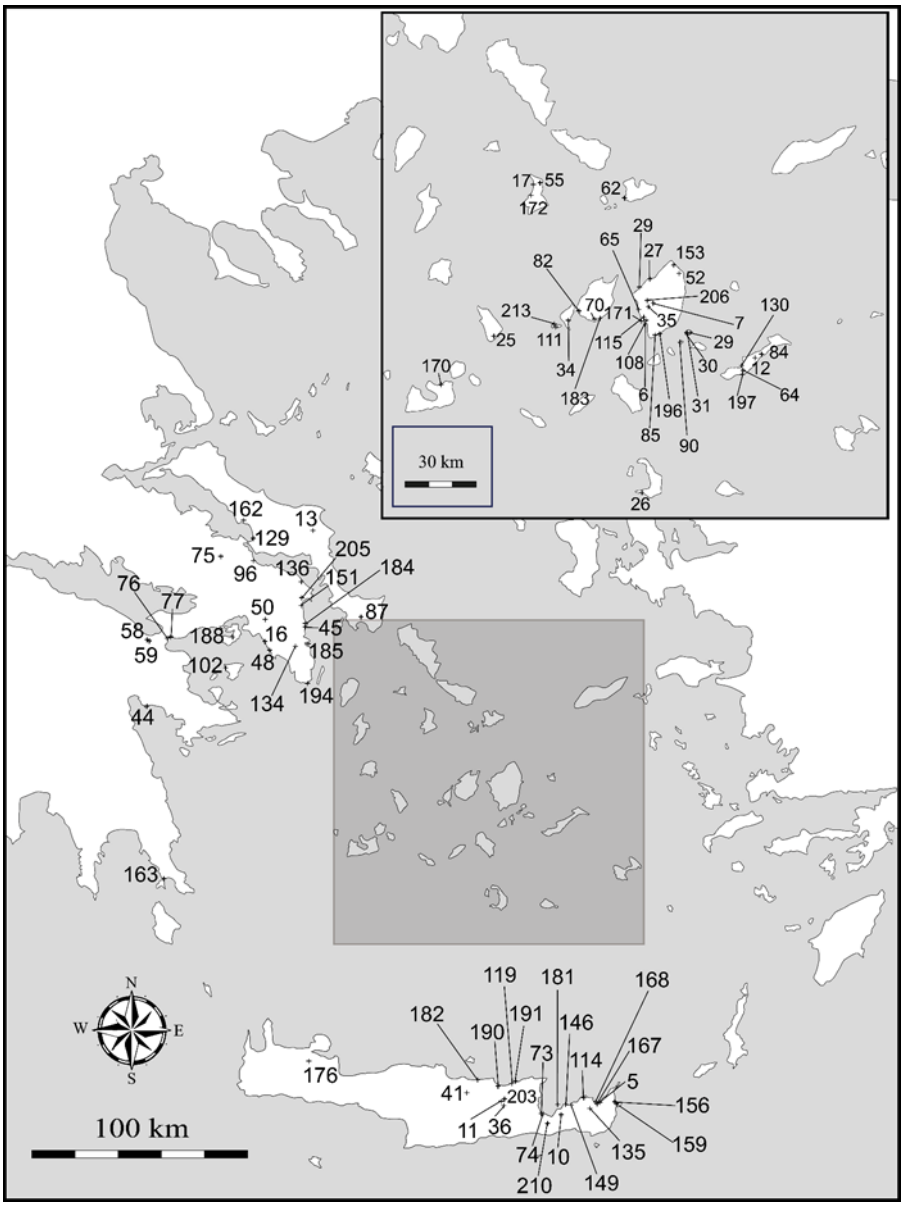

Figure 2.13. EB I/II–IIA cemeteries. For site number concordances, see Appendix 1.

the settlements.[261] House tombs are often placed in more prominent coastal locations in comparison to the settlements they serve.[262] The placement of house tombs within the catchment area betray an intentionality for these burial spaces to be visible from access routes, of which sea routes were increasingly important, as has been suggested by the analysis for settlements on EM II Crete. Their size and visibility indicate the importance of the dead within the cognitive space of EM IIA north coast Cretan communities and the connection to routes of movement is significant.

In the Cyclades, EC IIA burial grounds were more coastal than in the previous period (LCP1994).[263] Generally, coastal cemeteries are found on lower ground below the settlements that they serve,[264] accounting for the increase in coastality. On Naxos,[265] there are inland cemeteries, and the cemeteries of Amorgos are not especially coastal.[266] As in EC I, there seems to be a divergence in the placement of cemeteries, where coastal cemeteries are preferred, but not the only option in the placement of the dead. The Chalandriani cemetery is worthy of comment. It is by far the largest in the Cyclades in any period and its location is significant. The cemetery directly overlooks the sea and extends down towards it from an elevated position closer to the suspected settlement.[267] The use of the burial ground continues when the main area of habitation shifts to the fortified settlement at Kastri. Given the placement of the cemetery, and the material culture of a maritime nature in some tombs (Chapter 5), there was an intention to place the dead closer to the sea than the living,

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[261] Examples are found at Sissi (**C191**), Gournia North Cemetery (**C73**), Mochlos (**C146**) and Petras Kephala (**C168**) to name a few. Two distinct house tomb cemeteries were excavated at Palaikastro, at the Gravel ridge (**C156**) and Ta Ellinika (**C159**) burial places on the northeast coast of Crete.

[262] At Mochlos (**C146**), Pseira (**C181**), and Sissi (**C191**) the EM house tombs face the sea. The house tombs in the vicinity of Palaikastro at the Gravel Ridge and ta Ellinika are also located closer to the coast than the settlement, giving them prominent positions in what is likely to have been a busy harbour. At Gournia, there is a slightly different use of space as, although the North Cemetery is coastal, it is not as close to the coast as the rock shelter cemetery at Sphoungaras.

[263] Few EC I cemeteries continue into EC I/II, though the potentially regional nature of the "Kampos" group may be chronologically misleading. See Renfrew (2008, 2).

[264] For example at Agiassos (**C5**), Akrotiri (Naxos) (**C26**), Karvounolakkoi (**C85**), Aplomata (**C39**), Spedos (**C196**) and Ormos Apollonos (**C153**) and Phyrroges (**C171**) on Naxos, and at Drios (**C65**) and Pyrgos (**C183**) on Paros. The decline in cemetery numbers on Paros following EC I is notable. On Syros, Agios Loukas (**C16**), Pidima (**C172**) and Chalandriani (**C55**) are all coastal. In the Erimonisia, the large EC I/II cemetery at Agrilia (**C28**) is located on the higher ground c.600m northeast of the modern village on Ano Koufonisi. Contemporary cemeteries at the Tzavaros (**C30**) and Skopelitis plots (**C29**) of Ano Koufonisi were coastal.

[265] Agioi Anargyroi (**C6**), Tsikniades (**C206**), Aphendika (**C35**), Avdheli (**C52**), Lakkoudes (**C107**) and Lakkoudhes A (**C108**).

[266] Dokathismata (**C64**) is on the elevated interior of the southern part of the island, on a prominent spur with long-range views of the sea only to the north. Agios Georgios (**C11**) is on the high ground to the centre-north part of the island, not far from the Kapsala (**C84**), located in a similar location. Not far from Markiani is the cemetery at Stavros (**C197**), which like the settlement is in a highly elevated location, though with long-range views over the sea.

[267] Obscured by the modern *Chalandriani* village.

which may have meant that the dead were visible features of the islandscape for every crew of seafarers that embarked and disembarked at Chalandriani.

Elsewhere the patterns are less clear. The large cemetery at Manika on Euboia is the most notable, coastal cemetery in EH IIA. To the extreme south of the Peloponnese, the chamber tombs close to the submerged settlement at Pavlopetri may date to EH IIA, though this is not certain.[268] A cluster of coastal EH IIA cemeteries is evident in eastern Corinthia,[269] and intramural burials are recorded at some coastal sites, such as Asine and Kolonna.[270] Elsewhere many cemeteries are located inland.[271] North of Boiotia, the evidence for cemeteries of this period is lacking. Perhaps in Thessaly, Macedonia and Thrace burials in the coastal zone were actively avoided with usage focusing on the interior of the mainland, outside the scope of this analysis.

2.7 Early Bronze IIB–III

2.7.1 Settlements

In this chronological grouping settlement numbers (Fig. 2.15) continue to drop (29 SPC). Coastality increases yet again, with both the littoral mainland and insular regions representing a more coastal settlement pattern across the board (Table 2.6A). This period in particular has been correlated with the 4.2 ka climatic event,[272] which may have caused disruption at several places in the eastern Mediterranean including the Aegean. Another development is the so-called Kastri/Lefkandi I ceramic group or Anatolian Trade Network, which appears to have had strong links with Anatolia and stimulated a series of cultural changes at various places in the northern and central Aegean.[273] Traditional interpretation has interpreted changes during EH IIB–III as a result of migration/invasion,[274] though scholarly consensus has shifted to see the

[268] Harding *et al*. 1969, 125–132.
[269] At Isthmia (**C76**), which yielded eroded deposits of EH II pottery and human bone, and at Kalamaki (**C77**), where early road construction destroyed EH IIA tombs.
[270] Most of which are infant burials.
[271] Such as at Agios Georgios Aulonariou (**C12**), where a built rectangular ossuary containing 20–30 skeletons was found, at Hypaton (**C75**) where rock-cut chamber tombs of a similar type to Manika were located. Also at the Temple of Apollo at Corinth (**C59**), where rock-cut tombs were excavated and also the large "well" deposit at Corinth Chelitomylos (**C58**), where - in a similar fashion to Agios Georgios Aulonariou - a homogeneous deposit of EH IIA pottery and 20–30 individuals were found.
[272] Mayewski *et al*. 2004; Finné *et al*. 2011; Ehrmann *et al*. 2007.
[273] Şahoğlu 2005, 339–361.
[274] Caskey 1960, 299–302; Vermeule 1964, 29–31; Renfrew 1972, 116.

Table 2.6. Early Bronze IIB–III median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. A horizontal line denotes the same value as the preceding period. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

A. Settlement

	Argolid (9)	*Attica* (15)	*Boiotia (3)*	*Crete* (17)
LCP median	1030 ▼ (-1717)	2434 ▼ (-938)	1012 ▼ (-1616)	970 ▼ (-639)
	Cyclades (13)	*E.Aegean* (4)	*Euboia* (5)	*Macedonia* (7)
LCP median	1871 ▲ (+112)	833 ▲ (+202)	880 ▼ (-86)	2726 ▼ (-399)
	N.Aegean (6)	*Thessaly* (3)	*Insular* (44)	*Littoral* (43*)
LCP median	682 ▲ (+94)	277 —	892 ▼ (-78)	1030 ▼ (-1647)
	Overall (87)			
LCP median	979 ▼ (-463)			

B. Cemetery

	Argolid (3)	*Attica* (3)	*Crete* (22)	*Cyclades* (8)
LCP median	895 ▼ (-302)	1197 —	1584 ▼ (-69)	2923 ▲ (+929)
	Dodecanese (3)	*Insular* (34)	*Littoral* (7)	*Overall* (41)
LCP median	4500	2274 ▲ (+302)	895 ▼ (-367)	1966 ▲ (+303)

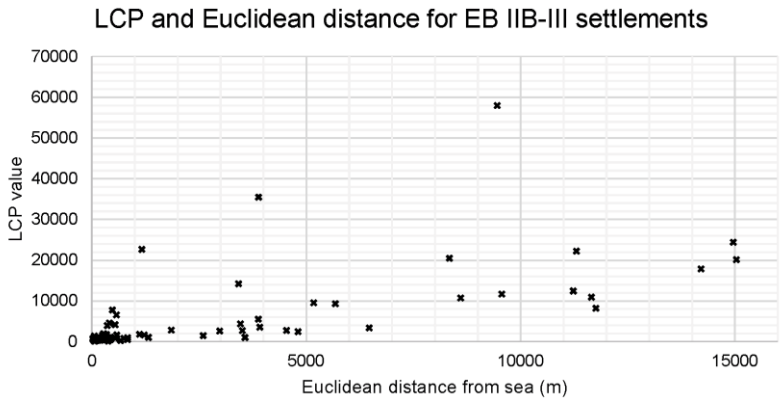

Figure 2.14. Scatter distribution of all settlements included in the EB IIB-III LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

changes as more complex and regional than previously suggested.[275] That several mainland settlements are fortified at some point in EH II, however, suggests wider competition and the potential for violence.[276]

In the Argolid, coastality increases making it among the more coastal regions during this time. Corridor Houses, large rectilinear buildings flanked by corridors of a suspected communal or political significance (and similar large structures), are reported or suspected at several settlements in the EH IIB Argolid,[277] and increasing complexity develops alongside greater coastality for the region. The presence of a fortification wall with towers at Lerna and the naturally defensive position at Tiryns suggest that although interaction with sea networks was important, there was a concern for safety. This can be best encapsulated by the fact that the bastion towers at Lerna curve around the House of Tiles to the seaward side of the settlement, a hint that the threat could come from the coast as well as inland.[278] The fall of Corridor House society in the Argolid at the end of EH IIB is not followed by the abandonment of settlements, suggesting that the changes that precipitated their discontinued use may have been internal rather than external, though outside Corridor House settlements, habitational places appear smaller and there is a slight decline in overall numbers in EH III.[279]

In Attica, settlement numbers decrease from previous periods, suggesting the abandonment of several inland settlements, such as those around *Kifissia*.[280] Coastality increases (LCP2434), indicating that populations shifted closer to the coast. While this may have been a period of climatic disruption, it is open to debate how far this will have affected communities in the region, though the abandonment of settlements in the more arable interior such as around northeast Attica and the *Mesogeia* may be telling. An alternative explanation may be that access to coastal networks became more important or that disruption as a result of the Corridor House phenomenon may have played a role in encouraging the abandonment of the interior of Attica in favour of the coastal regions.

Coastality on Crete continues to increase and is linked to the abandonment of several inland sites, while coastal settlements expand and become more substantial.[281] The developments on Crete are the exact reverse of those seen

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[275] Rutter (1993, 764) for example sees EH III ceramics as a hybrid of EH IIB "Lefkandi I" and earlier EH II wares. Forsen (1992) highlighted the lack of synchronicity in the changes seen in various regions during this transition.
[276] Konsola 1986, 13; Whitelaw 2000, 144.
[277] Such as the House of Tiles at Lerna (**S133**) and the Rundbau at Tiryns (**S274**).
[278] Caskey 1958, 128, fig. 1.
[279] Rutter 1993, 123.
[280] EH IIB–III phases have not yet been reported during recent excavations at Kouremenos Hill (**S123**) at Agios Stephanos, at Kifissia (**S112**) or Nea Erythraia (**S175**).
[281] For example at Pseira (**S230**), Sissi (**S249**), Gournia (**S70**), Poros Katsambas (**S220**), Priniatikos Pyrgos (**S224**), Petras (**S207**), and Mochlos (**S166**).

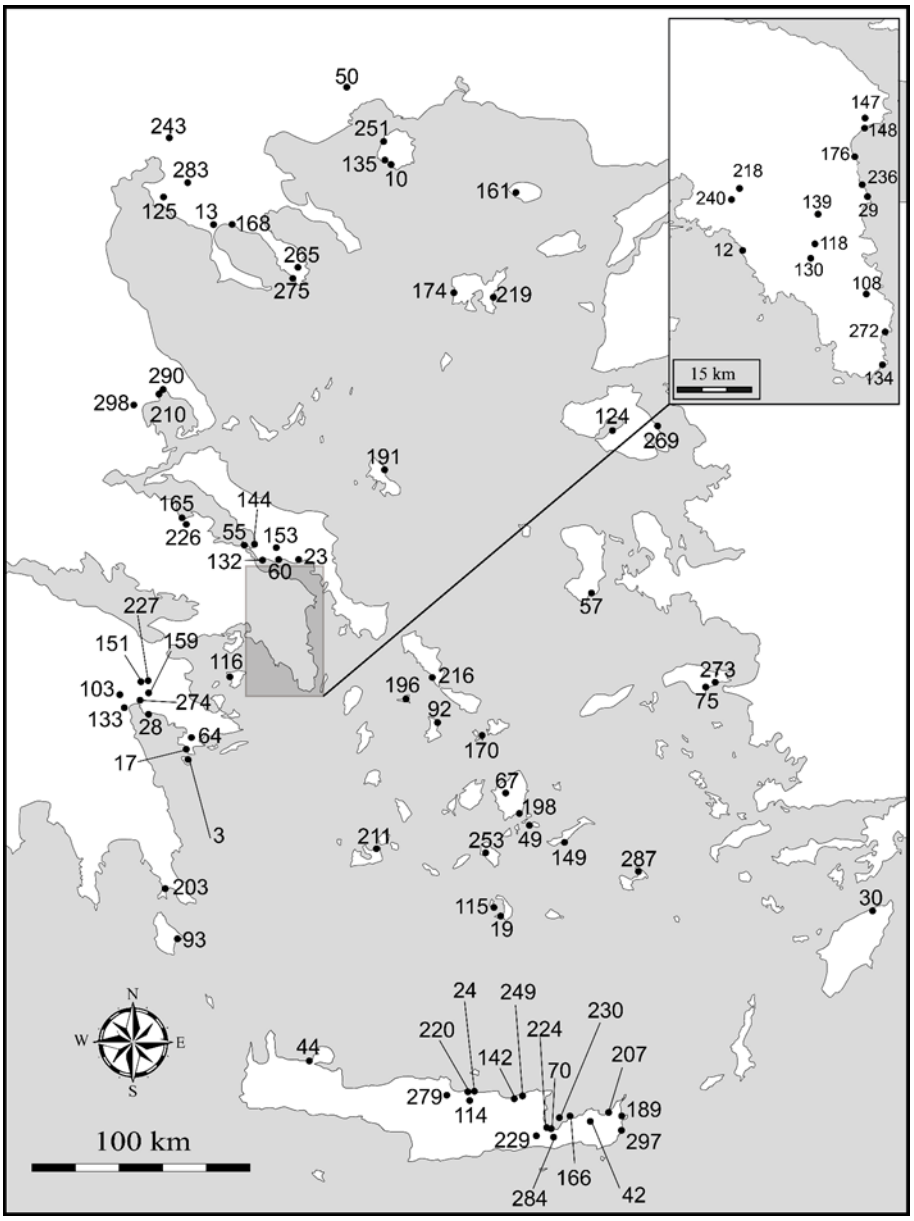

Figure 2.15. Map of EB IIB settlements. For site number concordances, see Appendix 1.

in contemporary Cyclades. The abandonment of upland, defensive settlements suggests greater integration between populations as there is a reduced need for defence. This shift may have been stimulated by Crete's incorporation in Aegean maritime networks at the start of EM IIA and the continuation of the process of newly founded coastal settlements that began in earnest in EM IIA. Coastal settlements such as Mochlos and Malia appear to have been important

centres during this time, which is attested through the richness of grave offerings from these settlements.[282] Maritime networks may have been of increased importance to EM IIB–III society,[283] supported by the recovery of imports.

In the Cyclades there is a reduction in the total number of settlements (down from 6.89 to 4.33 SPC) and coastality is lower than in preceding periods (LCP1891). While there is some continuity, defensive locations are now the preferred settlement type (Figs 2.16–2.17).[284] The concern for defence is further emphasised by the fact that several settlements receive fortification walls during this time.[285] This is further strengthened by the recovery of stores of slingshots at some fortified settlements.[286] One is tempted to perceive the changes as reflecting a period of uncertainty, rather than a shift in how people interacted with the sea. The change might be correlated with the 4.2 ka event, which is likely to have effected island settlements particularly severely. The collapse of the EC IIA 'international spirit' network by itself is likely to have a profound effect on Cycladic settlements, though in conjunction with climatic stress the effects may have been multiplied. This appears to have led populations to shift to defensive locations, which may have been a result of competition over increasingly scarce resources.

Changes in the Cyclades are not mirrored in Euboia. While there is a corresponding reduction in settlement numbers, the settlement pattern becomes increasingly coastal. Processes at work in the Cyclades did not appear to affect Euboia as severely and the continuity of habitation at several coastal settlements suggests that interaction with the 'Kastri' network was not as disruptive as elsewhere.

In the north and east Aegean islands there is continuity in coastal habitation, suggesting the continued lure of coastal networks. By the end of EB II, however, it is clear that Skala Sotiros on Thasos, Poliochni on Lemnos, Palamari on Skyros and the Heraion of Samos were fortified, probably as a result of network derived competition and conflict.[287] Similar to the 'international spirit' in EB IIA, the Anatolian Trade Network is at its floruit in EB IIB–IIIA with the north and eastern Aegean islands as principal maritime nodes, connecting via Anatolia to the Great Caravan Route.[288] It may have led to monopolisation by some communities and potential threat of violence, as seen in the

[282] Davaras 1975.
[283] Vavouranakis 2011c.
[284] Such as Kastri-Chalandriani (**S92**), Markiani (**S149**) and Panormos (**S198**) and Mount Kynthos (**S170**).
[285] Angelopoulou 2016–2017, 131–150.
[286] Such as Kastri (Tsountas 1899, 120; Doumas 1990, 90) and Panormos (Angelopoulou 2014, 33).
[287] Tiné 1997c, 20.
[288] Efe 2007.

Figure 2.16. Kastri on Syros. The settlement occupies the top of the rocky spur to the centre of the photograph. (by author)

Figure 2.17. Panormos on Naxos. The small fortified settlement directly overlooks the sea towards the Erimonisia from an elevated location. (by author)

earlier EB IIA Cyclades. Many of the north and east Aegean island settlements take on a proto-urban character suggesting increased complexity.[289]

By the end of EB IIB, Macedonia and Thessaly appear increasingly disconnected from developments elsewhere, though major coastal settlements such as Pevkakia in Thessaly and Toroni in Macedonia continue to participate in Aegean networks.[290] In these regions, settlement numbers begin to decrease and it is likely that many places are abandoned and settlements shift to areas outside the study area. The sustainability of some coastal places may be an indication of diverging pathways in these regions, a division between those by the coast, keeping up with external developments through maritime networks and those further inland, focused on land-based networks.

EB IIB–III was a period of discontinuity for many places, though disrupture appears to have hit some areas harder than others. There is a reasonable degree of continuity in the Argolid in terms of coastal habitation, and Crete hardly seems affected at all. In the Cyclades, many settlements were either abandoned or fortified. Newly established fortified settlements include Panormos and Kastri, while habitation continues at previously fortified Markiani.[291] These shifts could have been influenced by limited resources, such as fresh water or food, which in addition to the potential of longboat raiding, may have led to a situation in which internecine violence prompted the abandonment of settlements and the appearance of new fortified ones, synchronous with the collapse of a multi-regional exchange network. The identification of fortification systems at a wide range of places outside of the Cyclades is also suggestive of wider disruption during this time. Noticeable, however, these changes did not affect the northern Aegean islands as much as those to the south, nor did they affect Crete either.

2.7.2 Cemeteries

Cemetery numbers decrease (SPC 13.67), as does burial coastality (Table 2.6B). The few identifiable burial grounds can tell us little with any certainty (Fig. 2.18). In a sharp break with EB IIA, many cemeteries in Attica are abandoned. The cessation of burial in these places mirrors the discontinuity seen in settlements in the same region. An exception is the inland *tumulus* at Aphidna.[292] Elsewhere on the mainland cemeteries of this period are rare.[293] Intramural burial appears to begin at some settlements of the Argolid, such as

[289] Kouka 2013, 577.
[290] Morris 2009, 5; Maran 2007, 168.
[291] Marangou 2006, 86-87.
[292] The tumulus at Aphidna (C38) has been variably dated to either MH I or EH II, though an EH III date is preferred here.
[293] Rutter 1993, 766. Exceptions include EH III intramural burials from Agia Marina in Boiota (C2) and an EH III tumulus at Atalanti (C49).

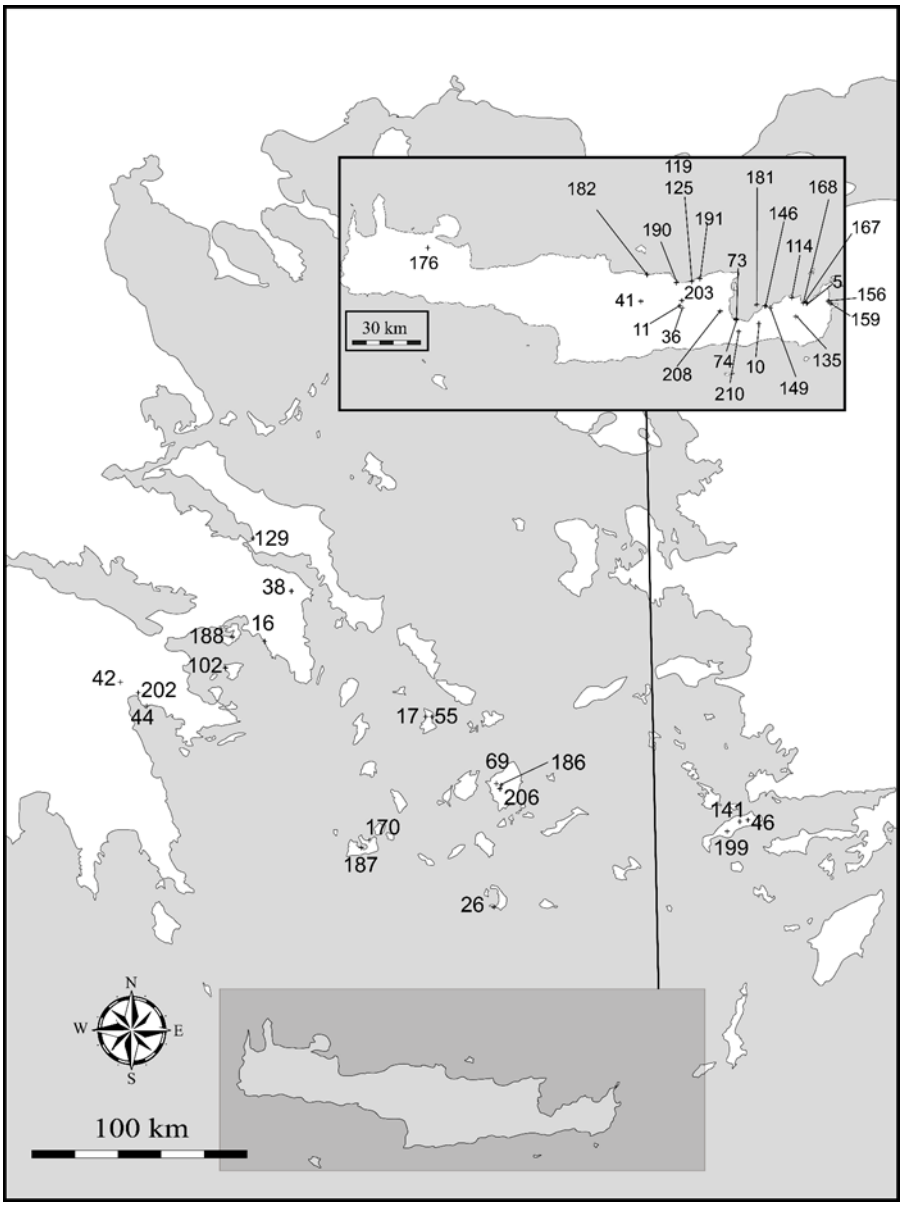

Figure 2.18. EB IIB–III cemeteries catalogued. For site number concordances, see Appendix 1.

at Asine and Tiryns, and marks the start of a long-term trend towards the burial, particularly of children, in settlement zones rather than in extramural cemeteries.[294] Burials on the Aspis hill at Argos also begin toward the end of this chronological group.[295]

For the insular regions of the Aegean, the picture is altered from previous periods. In the Cyclades, there is a drastic reduction in the number of delineated burial grounds (7.78 SPC down to 2.67) and there is no clear spatial pattern amongst the burial data.[296] More so than with Attica, the abandonment of so many cemeteries at the end of EC IIA is indicative of discontinuity and a cultural shift starting in EC IIB. By contrast, on Crete there is much continuity. Many EM IIA burial places were continuously used in EM IIB-III. In this period Cretan cemeteries account for the majority of known burial places in the study area, despite several examples falling out of use at the beginning of EM IIB.[297] EB III *pithos* burials inland on Kos[298] and contemporary intramural burials from Palamari on Skyros constitute the first EBA island burials in the study area outside the Cyclades and Crete.

2.8 Middle Bronze I

2.8.1 Settlements

There is general continuity of coastality (Table 2.7A) in MB I from the preceding period (Fig. 2.1:MB I). Settlement numbers, however, continue to drop (24 SPC), most likely as a result of nucleation (Fig. 2.20).[299] Generally, and perhaps particularly so in the Cyclades, this period sees the continuation of a downward trend and by the start of this period, the Anatolian Trade Network collapses in the northern Aegean.[300] The intense extroversion observed for the societies of the northern and eastern Aegean from EB IIB–III is replaced by introversion and this interpretation could also be extended to most regions of the Aegean in MB I, with the exception of Crete.[301] On Crete, processes towards state-formation accelerate.[302] Another major development by the beginning of this period is the widespread adoption of the sailing ship, which may have been an underlying factor behind change.[303]

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[294] McGeorge 2018, 1–20.
[295] Pullen 1985, 119.
[296] Chalandriani (**C55**), Rivari (**C187**) and Spedos (**C196**) were coastal, yet Galanados (**C69**), Rhodinadhes (**C186**) and Tsiknades (**C206**) were inland.
[297] Legarra Herrero 2014, 149.
[298] Messaria (**C141**), Tavla (**C199**) and the burials at the Askloupi (**C46**).
[299] Bintliff 1977, 131–135.
[300] Şahoğlu 2005, 354–355; Kouka 2013, 577.
[301] Kouka 2013, 578.
[302] Herrero 2016, 349–367.
[303] Broodbank 2000, 247, 251, 256–258; Maran 1998.

The continuity of settlement in the Argolid makes the EH III–MH I settlement pattern similar to that of the previous period and external contacts are still evident, particularly with Kolonna.[304] In Attica, there is a slight increase in coastality, though several coastal settlements appear to have been abandoned in EH III, such as Agios Kosmas and Askitario.[305] Increased evidence for habitation around the acropolis at Athens indicates that some activity had shifted further inland, though settlement at Plasi and at Limani Pasa show that new coastal settlements were also established in this period. A decrease in settlements beginning in EH IIB culminates in this phase,[306] which has been suggested to be a result of nucleation.[307]

In areas north of Attica, there are too few settlements adhering to the selection criteria to make any conclusive statements. Once again, the focus of habitation in MH Boeotia lies outside of the study area, suggesting a sustained, long-term avoidance of the coast.[308] Coastal habitation continues around the Pagasitic Gulf of Thessaly and in the Chalkidike region of Macedonia and the reduction in settlement numbers in these regions may be indicative of nucleation at these coastal settlements as well. Kolonna is fortified during this period and emerges as an exceptional settlement in the region for centuries to come.[309]

There is a coastal-focus to the settlement pattern on Crete, with mountainous, elevated positions avoided in favour of settlement in lower, arable lands or coastal places. The pattern may be a result of state-formation processes between EM III and MM I, in which the later palatial sites see an increase in population due to nucleation in advance of the formation of the Protopalaces. Traces of abandonment and destruction layers at some EM III settlements are an indication of societal transformation, which may have included violence in some instances.[310] By the beginning of this period, external contacts shift from the Aegean to the eastern Mediterranean, which is validated by Near Eastern

[304] Zerner 1986, 64–66; 1988, 1–5; Maran 1992, 179–199. Cycladic imports are also known, such as a duck vase (Caskey 1957, pl. 42, d)
[305] Papadimitriou 2010, 245.
[306] Forsen 1992, 181–182; Maran 1998, 86–88; Karantzali 1996, 175–183; Apostolopoulou-Kakavogianni 2001, 35–44.
[307] Bintliff 1977, 131–135; Apostolopoulou-Kakavogianni 2001, 35–44.
[308] For example Thebes (Dakouri-Hild 2001, 103–118) and Orchomenos (Sarri 2010).
[309] Dickinson 1977, 33; Rutter 1993, 776; Felten 2007, 11–34; Gauss *et al*. 2011, 76–87.
[310] Watrous *et al*. 1993, 224; Watrous 1994, 717–718; 2001, 223

Table 2.7. Middle Bronze I median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. A horizontal line denotes the same value as the preceding period. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

A. Settlement

	Argolid (8)	*Attica* (10)	*Boiotia* (3)	*Crete* (21)
LCP median	934 ▼ (-96)	2421 ▼ (-13)	1012 —	846 ▼ (-124)
	Cyclades (10)	*Euboia* (9)	*Macedonia* (5)	*N.Aegean* (5)
LCP median	1423 ▼ (-448)	3255 ▲ (+2375)	1049 ▼ (-1677)	588 ▼ (-94)
	Thessaly (5)	*Insular* (43)	*Littoral* (41*)	*Overall* (84)
LCP median	2417 ▲ (+2190)	825 ▼ (-67)	1460 ▲ (+430)	970 ▼ (-9)

B. Cemetery

	Argolid (5)	*Attica* (3)	*Crete* (49)	*Cyclades* (5)
LCP median	895 —	2484 ▲ (+1287)	1584 —	2707 ▼ (-216)
	Insular (55)	*Littoral* (13)	*Overall* (68)	
LCP median	1653 ▼ (-621)	2484 ▲ (+1589)	1831 ▼ (-135)	

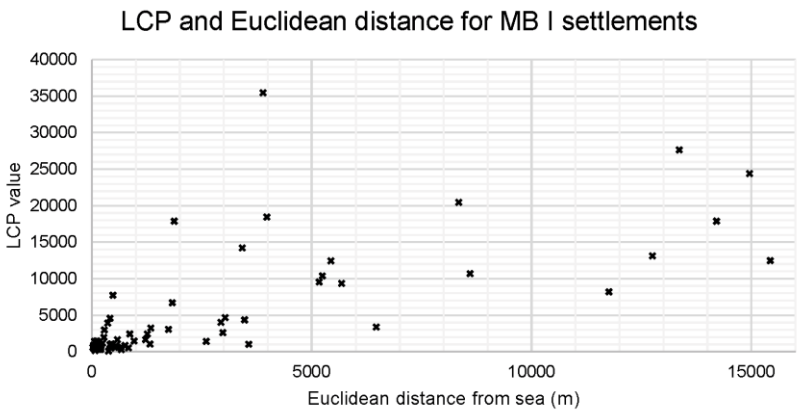

Figure 2.19. Scatter distribution of all settlements included in the MB I LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

and Egyptian imports.[311] Several coastal settlements increase in size, while there also appears to be an increased occupation of lower lands. Crete has been argued to play a key role in the first use of sailing ships in the Aegean, which may also be a contributing factor towards the coastal distribution of settlement patterns, as well as increased external contact and internal complexity.[312]

The Cyclades sees a reversal from the previous period towards increased coastality (1423LCP). There is a general reduction in settlement numbers and a convincing case can be made for a shift toward a nucleated settlement pattern across the archipelago.[313] The beneficiaries from this nucleation are, as a rule, coastal communities.[314] If a drought event took place between EC IIB–III, then recovery could have led to the increased nucleation of people at coalescent settlements on more well watered, fertile islands, such as Melos, Naxos, Paros, while dryer islands such as Syros and Amorgos appear to be avoided, and settlements there abandoned.[315] This process may have included the movement of climate refugees and the preference for coastal settlements hints that this movement was not in response to threat of violence, rather some other factor, such as a drought.[316] The fact that coastal sites were preferred suggests that these places were perceived as hospitable and sea-focused networks may have been part of the resilience response toward instability and climatic disturbance. Indeed a majority of preferred locations in this period can be found beside deep bays, suitable for sailing ships.[317] Evidence for longer distance interaction in this period ceases and it appears that the islands of the Cyclades were in contact only with each other, in contrast to previous periods.[318] Nucleation at some settlements may have also driven internal competition between groups, which may be evident in the iconographic representation of a few marine themes in ceramic consumption (Chapter 5), suggesting that this too may have been a period in which the sea took on an extra significance to individuals and groups.

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311 Phillips 2006; 2008; Cherry 2010; Legarra Herrero 2011.
312 Marcus 2002, 403–417; Wachsmann 1998, 99; Yule 1980, 165–166; Broodbank 2000, 249–264.
313 Schallin 1993, 70.
314 For example, Phylakopi (**S211**), Paroikia (**S201**), Akrotiri (**S19**), Mikre Vigla (**S160**), though the coastal settlement at Agia Irini (**S2**) appears to have been abandoned for the duration of EB III–MB I.
315 Markiani (**S149**), Kastri-Chalandriani (**S92**) and Mount Kynthos (**S170**), for example, are all abandoned at the end of the preceding period.
316 Fortified settlements as seen in EB IIB–III or a shift inland are more likely responses to violence, while nucleation is usually a response to stress. See Hansen *et al*. (2002, 273–295) on climatic stress as a cause of settlement nucleation and the rise of the Maya civilisation.
317 Broodbank 2000, 326.
318 See for example Melian imports at Paroikia on Paros (Papagiannopoulou 1987, 181) and in the Agios Loukas tomb on Syros (Tsountas 1899, 79).

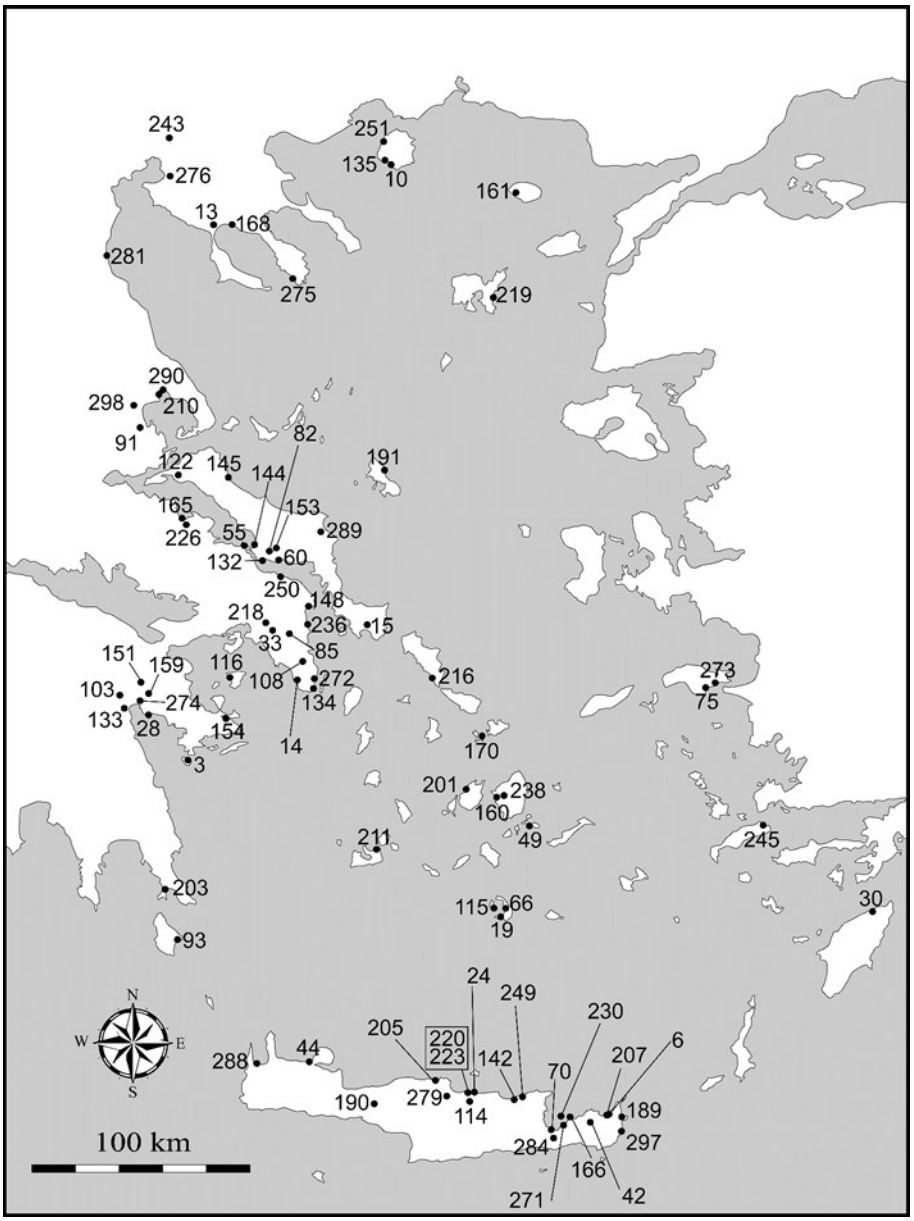

Figure 2.20. Map of MB I settlements. For site number concordances, see Appendix 1.

Euboia in contrast sees a sharp reversal of the trend from the previous period and although habitation at some coastal settlements continue, there is increased evidence for MH I habitation further inland.[319] It seems that different pathways emerged at the start of the MH in which some communities continue to pursue coastal living to tap into maritime networks, while some settlements are set further inland, safe from the coast and may have been taking advantage of networks focused on the interior of Euboia.[320] Settlement numbers, however, are likely to have been higher than reported here as few have been published and surface scatters of pottery are excluded.

In the north and east Aegean islands, coastality remains high as it has throughout, though there appears to have been serious socio-political change at the end of EB III.[321] The implosion of the Anatolian trade network and signs of decline at major centres are suggestive.[322] The maintenance of these coastal centres, as well as the abandonment of some settlements at the end of EB III indicate that there may have also been a process of nucleation at work in this region, with coastal centres the preferred option. Little evidence for the early MBA in the Dodecanese has been identified leading to question whether the area was depopulated during this period or whether future exploration will rectify the situation.[323]

The MB I sees nucleation at most places of the Aegean, with the exception of Crete where settlement numbers continue to increase. The introduction of the sailing boat and the social reorganisation that took place after the collapse of the Anatolian Trade Network, the Corridor Houses and climatic stress on the islands in the preceding period all lead towards a nucleated settlement pattern with small-scale maritime networks. This is suggestive of the fact that coastal settlements afforded adaptable and resilient ways of living in the face of change.

2.8.2 Cemeteries

Pre-existing EB IIB–III trends continue into this phase (Table 2.7B). Burials in the Argolid are confined exclusively to intramural spaces,[324] while in Attica there is a further reduction in the number of burial grounds.[325] Few burial

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[319] At settlements such as Kalogerovrysi (**S82**), Megali Lakka (**S153**) and at Vigliatouri-Oxylithos (**S289**).
[320] Krapf 2017, 151.
[321] Şahoğlu 2005, 354–355.
[322] Kouka 2013, 577.
[323] Papagiannopoulou 1985, 85–92; Marketou 1998, 63; *contra* La Rosa 2001, 53; Vitale 2005, 87. Though recent survey work on Kos appears to confirm that the earlier part of the MBA is not well represented (Georgiadis 2012, 6).
[324] Intramural burials are known from Lerna and Asine, while an increase in burial can be noted on the Aspis hill at Argos (Pullen 1985, 119).
[325] These include burials in the grave circles at Vranas (**C133**).

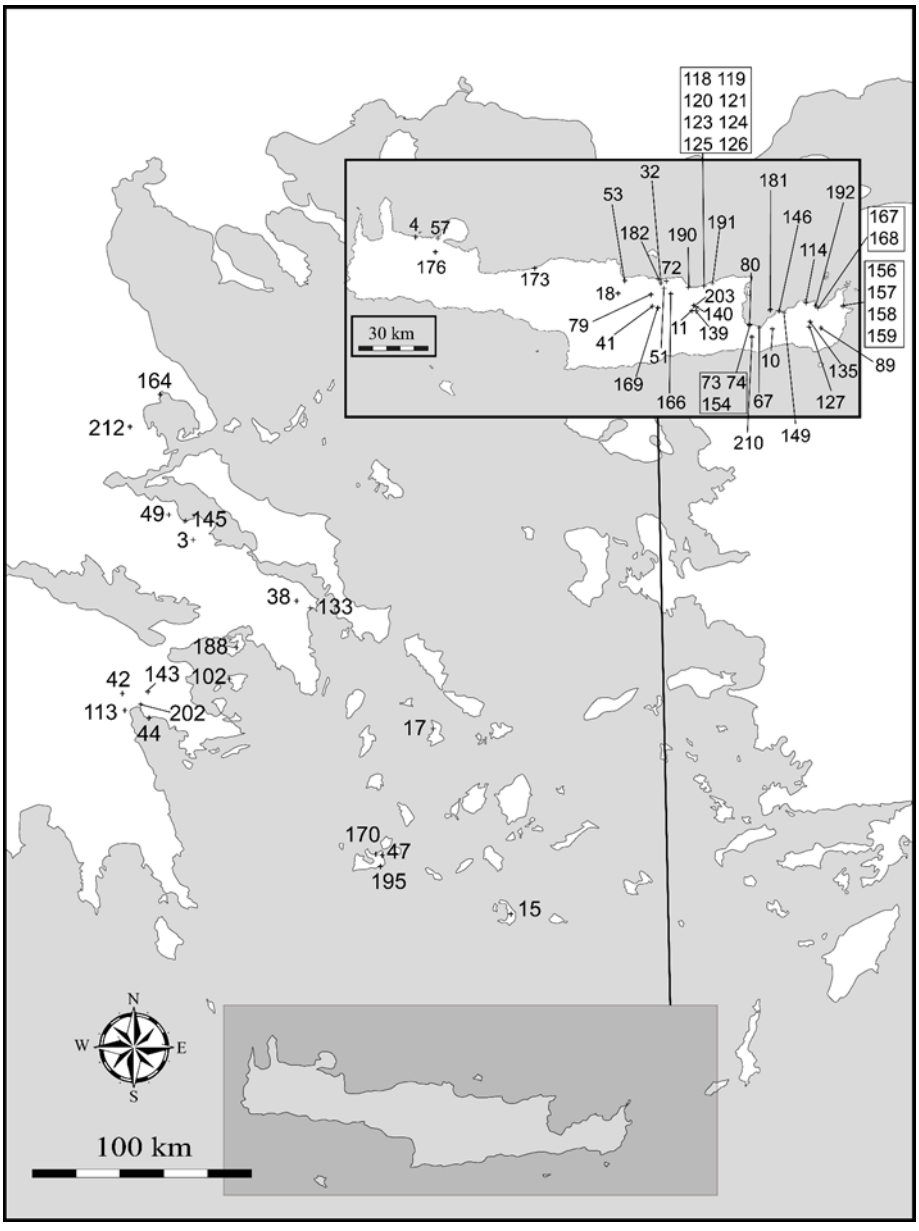

Figure 2.21. Middle Bronze I cemeteries catalogued. For site number concordances, see Appendix 1.

grounds are recognised north of Attica and generally, extramural burials remain rare on the Greek mainland until the end of MH III (Fig. 2.21).[326] The Cyclades also witnessed a continued reduction of cemeteries[327] and some are now intramural.[328] From other islands, there are no published burial grounds. It is possible that, as with the Greek mainland, there is a shift towards intramural burial, which may have been subsequently destroyed by later habitation.

In marked contrast to the rest of the Aegean, the number of burial grounds on Crete increases and constitutes over half of all burial grounds in the entire catchment area. There is variation in the mortuary practices in terms of coastality and the type of tomb type used. Burial coastality is low for MM I, though there is a mixed pattern with both coastal and inland cemeteries. There is also variability between various regions. Some are located beside the coast in west Crete, though more archaeological exploration of the interior may change this perspective.[329] Central Crete sees a trend towards burial grounds on the interior.[330] This is exemplified by the extensive cemeteries around Archanes. There is also an expansion in cemetery numbers along the north coast of Crete,[331] particularly around Malia where, just before the emergence of the Protopalace, there is a suite of coastal cemeteries in association with the settlement. In eastern Crete, there is a continuity of earlier burial tradition, which includes a good number of burial grounds closer to the coast, yet this can also be explained by the close spatial association between settlement and cemetery in this period.[332]

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[326] Nordquist 1987, 91–106.

[327] Rock-cut tombs like those seen at Phylakopi were noted at Spathi (**C195**) and Asprochorio (**C47**) on Melos, where some grave goods have affinities with Phylakopi I pottery. One grave at Agios Loukas (**C17**) on Syros contained Phylakopi I and MH pottery, indicating that part of the cemetery was later reused. Further rock-cut chamber tombs were uncovered at Agios Ioannis o Eleemon (**C15**) on Thera, dating to a transitional phase between EBA and MBA.

[328] At Akrotiri, the deep soundings revealed rock-cut pits filled with MBA settlement debris (Doumas 2008, 167-168). They have been variously interpreted as storage pits (Sotirakopoulou 2008, 131-132) and, more convincingly, EC III-MC I chamber tombs based on similar types at Manika (Doumas 2008, 168). The lack of skeletal material is not uncommon for tombs of the Cyclades and later infilling could have destroyed undisturbed contexts (See EC IIA-B Tsikniadhes on Naxos, Philaniotou 2008, 202). At Phylakopi, late EC-MC I burials may have been covered by the later settlement (Brodie *et al*. 2008, 413), and the recovery of large quantities of complete or almost complete Phylakopi I fine wares suggests a tomb origin.

[329] Burial grounds are noted at Agia Marina Gerospilia (**C4**) in a rock shelter, close by the coast, while a MM I *pithos* burial was noted in modern Chania (**C57**).

[330] MM I *pithos* burials were noted at Agios Myronas (**C18**), Pigi (**C173**), Meliskipos (**C139**) and in the cave at Meskine (**C140**). House tombs received burials at Kalivotopos (**C79**) and unexcavated cemeteries were noticed at Phrachto (**C169**), Athimari (**C51**) and Pera Vigla (**C166**).

[331] Legarra Herrero 2014, 154.

[332] Coastal rock shelters are noted at Evraika (**C67**) and Siteia (**C192**). Other rock shelter burials are inland at Katelionas (**C89**) and Maronia (**C135**), while inland house tombs can be found at Vasiliki (**C209**) and Mandalia (**C127**). A house tomb at Kalo Chorio (**C80**) has been noted while at Palaikastro on the east coast, there is an expansion and increase of coastal burial grounds. The Palaikastro Gravel ridge (**C156**) and Ta Ellinika (**C159**) house tombs continue in

2.9 Middle Bronze II

2.9.1 Settlements

There is more than a doubling of settlements (48.5 SPC) in the Aegean during the relatively short MB II period, including both new establishments and re-occupation of old settlements (Fig. 2.25). There is little change in overall coastality from the previous period (Table 2.8A), suggesting that coastal interaction remained important (Fig. 2.1:MB II). Central to this period is the consolidation of the first states of the Aegean around the Protopalaces of Crete. Elsewhere trends continue in a similar manner from the previous period with the exception of Kolonna on Aegina, which may be the only candidate for a proto-state outside Crete.[333]

The Argolid sees a slight reduction in coastality in MH II. While there is scant evidence of earlier activity at Mycenae, habitation becomes more evident from the middle of the MH period onwards.[334] The main settlements are those beside the coast though both Asine and Lerna do not exhibit the same complexity or significance as Kolonna. It is clear, however, that these settlements were more substantial and better connected than contemporary inland sites during this period.[335]

In Attica, habitation becomes increasingly apparent around the acropolis of Athens and there is evidence for MH habitation in the Mesogeia plain at Pallini and Kantza, as well as at Dionysos near Mt. Penteli. Generally, most settlements are close to or on defendable locations, with some being coastal and some inland, something of a mixed pattern between agriculture and external communication.[336] The coastal settlements of these regions provide evidence of small scale external contact in MH II, with Aeginetan pottery detected at inland and coastal sites in both west and east Attica,[337] indicating the increased importance of maritime networks throughout the first half of the MH.[338]

Kolonna on Aegina appears to have been a key player during the MH and something of an anomaly. Ceramics from the island are known from inland Boeotia, Euboia, Thessaly, Attica and the Argolid[339] suggesting that Kolonna

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use from the EM period, while the new Patema (**C157**) and Sarantari (**C158**) house tombs receive burial.

[333] Rutter 1993, 776; Niemeier 1995.

[334] Alden 2000. Rowe (1954, 248–253) has dated a "fortification" wall to the MH for example.

[335] Rutter 1993, 780.

[336] Papadimitriou 2010, 245.

[337] From Eleusis (Cosmopoulos *et al*. 1999, 131–136.), Athens (Mountjoy 1995, 69) and Brauron (Mommsen 2003, 13–30).

[338] Minoan imports are known from: Asine (MM IA–II: Frödin & Persson 1938, fig. 192:1,4) and Lerna (MM IA–II: Caskey 1956, 160, pl. 43C; Caskey 1957, pl. 43C). Cycladic imports are known from: Athens (Hansen 1937, 554, Fig.10); Brauron (Davis 1977, 272); Tiryns (Weisshar 1982, 440–466, fig. 73). Aeginetan imports are known from Lerna (Caskey 1956, pl. 43B).

[339] Gauß & Knodell 2020, 242-262.

Table 2.8. Middle Bronze II median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. A horizontal line denotes the same value as the preceding period. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

A. Settlement

	Argolid (9)	*Attica* (9)	*Boiotia (3)*	*Crete* (27)
LCP median	1030 ▲ (+96)	3029 ▲ (+608)	1012 ▬	848 ▲ (+2)
	Cyclades (9)	*Dodecanese* (7)	*Euboia* (10)	*Macedonia* (5)
LCP median	1112 ▼ (-311)	916	2147 ▼ (-1108)	1049 ▬
	Thessaly (6)	*Insular* (52)	*Littoral** (44)	*Overall* (96)
LCP median	2964 ▲ (+547)	891 ▲ (+66)	1451 ▼ (-9)	961 ▼ (-9)

B. Cemetery

	Argolid (7)	*Attica* (9)	*Crete* (43)	*Thessaly* (4)
LCP median	1030 ▲ (+135)	1472 ▼ (-1012)	2098 ▲ (+514)	4044

	Insular (46)	*Littoral* (27)	*Overall* (73)
LCP median	1876 ▲ (+223)	1695 ▼ (-789)	1674 ▼ (-157)

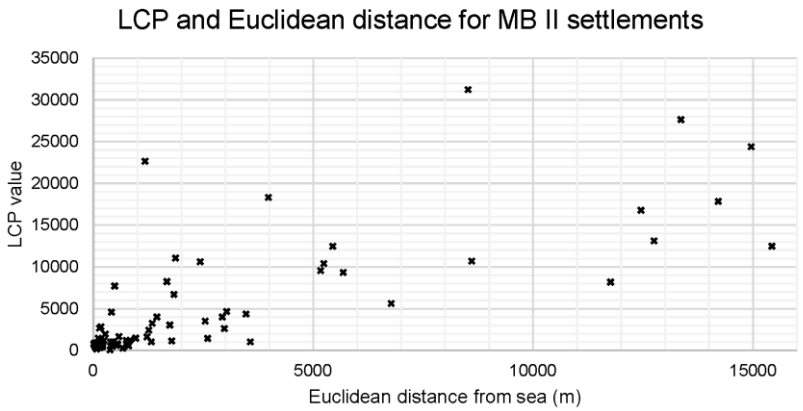

Figure 2.22. Scatter distribution of all settlements included in the MB II LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

was a hub for MH contact networks and might even have exerted control over parts of them in and around the Saronic Gulf.[340] To pre-empt, the identification of maritime imagery on potsherds from the settlement may indicate that these networks may have encouraged a local investment in seascapes as a place of significance (Chapter 5). The explanation for this may be the placement of Kolonna, at a point where Cycladic, Cretan, Attic-Euboian and Peloponnesian networks converge. Such tension may have driven the community at Kolonna to act as maritime middlemen in the region,[341] though their influence may have also been military, judging from the iconography.

Crete again sees continuity and the emergence of the first palaces appears to have had little impact on the coastality of settlement patterns (LCP848).[342] The presence of MM II ceramics outside the island are an indication that maritime networks expanded and became increasingly driven by Cretan enterprise.[343] It is important, however, to stress the significance of agricultural regions in addition to the potential for external contact. While both Mochlos (Fig. 2.24) and Malia were important prepalatial settlements, it is at Malia, not Mochlos that a palace was constructed. The incorporation of a large arable area in addition to the potential of external contact led to the establishment of a Protopalace at Malia and the decreasing significance of Mochlos, where access to arable land was limited.[344]

There is increased coastality (LCP1112) in the Cyclades and few settlements are inland.[345] Noticeably, the large island of Naxos is comparatively poorly represented in the MBA, contrasting with the lively focus of settlement in both coastal and inland regions in the EBA.[346] The recovery of imported MM II ceramics at Agia Irini, Akrotiri and Phylakopi,[347] are indicative of the increased importance of longer-range networks driven by sailing ships and the onset of the 'Western String' route connecting Crete with metal sources at Lavrion.[348] This equates to the first contact stage in the long-term process of Minoanisation in the Cyclades and, contrary to perceived wisdom, Minoan imported pottery appears to have been more numerous in this period than later.[349] The presence of a considerable quantity of mainland imports at Agia

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[340] Gauß & Weilhartner 2020, 129-147.
[341] Klebinder-Gau & Gau 2015, 67–91.
[342] Note that the MB II chronological grouping includes MM IB Crete.
[343] Knappet & Nikolakopoulou 2005.
[344] Whitelaw 2004, 236–237.
[345] Exceptions include Rizokastellia (**S238**) on Naxos and Panagia I Antilousa (**S196**) on the small island of Gyaros.
[346] The only settlements being Mikre Vigla (**S160**) and potentially Rizokastellia (**S238**). It may have been possible, however, that Grotta (**S71**) was the main settlement of the island in the mid MC, though its deposits may be obscured by later LC settlement.
[347] Papagiannopoulou 1987, 265.
[348] Schofield 1982.
[349] Broodbank 2004, 76–77; Abell 2016, 77.

Figure 2.23. Agia Irini on Kea. The settlement occupies the low coastal mound to the centre of the image (by author).

Figure 2.24. Mochlos on Crete (by author).

Irini (Fig. 2.23),[350] as well as the presence of Minyanising wares and MH imports at Phylakopi, should not be ignored either.[351] The presence of imported pottery and the coastal setting of most MC settlements indicates that maritime interaction was a more viable source of change than a focus on the interior on the islands. There is also a great deal of evidence for intra-Cycladic contact during this period,[352] suggesting that network contact was a fundamental *raison d'être* for the functioning of these communities, which predated Minoanisation in the region.

For the first time in this analysis, settlement patterns in the Dodecanese become discernible. These settlements are, as a rule coastal.[353] Their emergence at this juncture, rather than any time before, may suggest their formation was stimulated by Cretan maritime contact, with the settlements serving as suitable harbour sites for maritime network interaction, a configuration termed the 'Eastern String model', connecting Crete with the western coast of Anatolia and potentially Cyprus and the Levant.[354]

In the north and east Aegean islands settlement numbers continued to drop and increased nucleation is evident at several coastal settlements. As in the Cyclades, the earliest evidence for Minoan contact are MM II imports at Mikro Vouni,[355] though Minoan contact appears with greater intensity slightly later at other north and eastern Aegean islands.[356] There has been a case made for a special relationship between Samothrace and Crete beginning in MM II which, given the positioning of Samothrace close to Bosphorous, may be an indication of Minoan interest in the Hellespont or beyond.[357]

Previous trends largely continue in Thessaly, though imported Minoan and Aeginetan wares at Pevkakia attest to its incorporation into maritime networks.[358] The MBA is difficult to detect in Macedonia outside of the coastal settlements, due to the lack of recognisable ceramic synchronisms with the regions further south,[359] and it may be the case that the inland regions were mostly depopulated.[360] It is clear that Agios Mamas participated in MBA networks due to the recovery of Grey Minyan pottery, though it is one of few

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[350] Abell 2016, 83.
[351] Barber 2008, 77, 162–164; Barber *forthcoming*.
[352] For example, evidence for Melian imports are known from Agia Irini, Paroikia, Akrotiri, Siphnos, Naxos and even Aegina, while Kean ceramics are known from Phylakopi (Papagiannopoulou 1987, 258).
[353] Such as Seraglio (**S245**), Akandia (**S17**), Lakos (**S129**) and Pigadia (**S213**).
[354] Davis *et al*. 1983.
[355] Girella & Pavúk 2015. Also notable is the introduction of Minoan type loomweights, stone vessels (Matsas 1995) and administration systems (Matsas 1991).
[356] Girella & Pavuk 2019, 18–22.
[357] Girella & Pavuk 2019, 23.
[358] MM imports are known from Pevkakia (*ArchDelt* 28 (1973): 340, pl. 303C) and single example from Volos (Rutter & Zerner 1984, 82, Appendix III:6).
[359] Krapf 2019.
[360] Gori 2015.

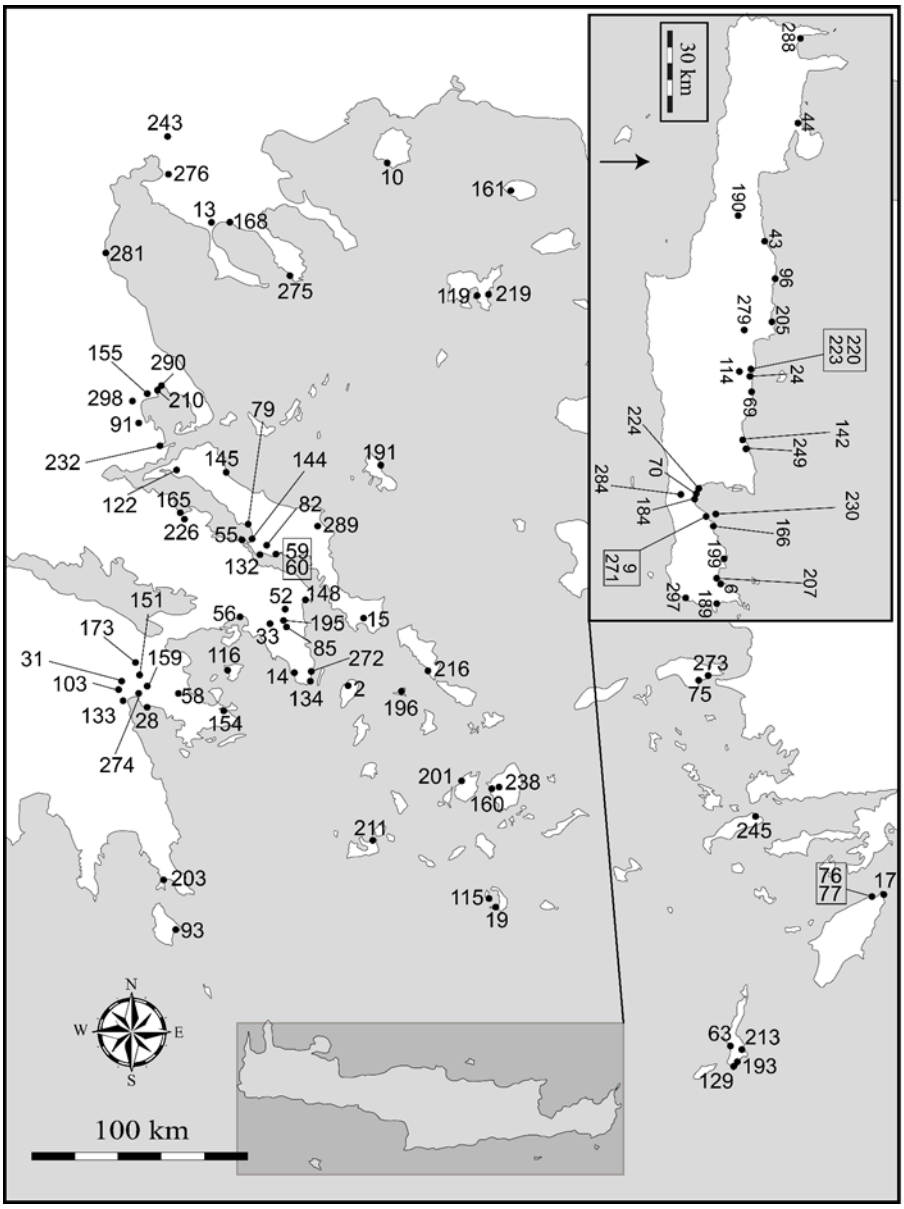

Figure 2.25. Map of MB II settlements. For site number concordances, see Appendix 1.

sources of evidence for this period in Macedonia.[361] Other than a small number of coastal settlements, other contemporary major settlements can be found considerably further inland, outside the scope of this study.[362]

There is a subtle seaward shift in MH II (2147 LCP) on Euboia, though settlement patterns show continuity from the previous period at large. The Euboian strait is the focus of continued coastal habitation and the recovery of imported wares from Aegina and the Cyclades indicates the importance of maritime network contact.[363] The continued stability of the coastal settlements of central Euboia may have been a result of the lack of settlement and suitable anchorage across the water between the Marathon bay and Oropos in northeast Attica, which may have created a favourable situation for these settlements.[364] That this sea lane was important is shown to by the spread of Aeginetan ceramics in Boiotia, Attica and Thessaly,[365] though the spread of Keian ceramics further south in the Karystia, particularly at Agios Nikolaos Mylon, may suggest a Cycladic focus for southern Euboia and a Central Greek focus for central Euboia.[366] This period therefore may see another example of parts of Euboia becoming more connected to island developments than those of the mainland.

The nucleated settlement pattern established at the beginning of MB I continued into MB II and there is evidence of longer-range contact at several outlying areas of the Aegean. These maritime networks appear to have played a key role in drawing habitation to the coast, particularly in the islands where this becomes the dominant pathway for most communities. In most places, there is continuity, if not very subtle decreases in coastality, with the exception of the Cyclades.

2.9.2 Cemeteries

Burial in MB II is characterised by continuity from earlier periods (Fig. 2.17). In Attica, more burials are found on coastal plains, with the emergence of extramural cemeteries being noticeable, though intramural burial does continue.[367] A noteworthy burial is the shaft grave at Kolonna on Aegina, located

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[361] Hänsel & Aslanis 2010.
[362] Such as at Kryopigadi (Karamitrou-Mentesidi & Lokana 2011, 310–317) and Polemistra (Chondroyianni-Metoki 1998, 33–34).
[363] Aeginetan wares were present at Amarynthos and Manika (Papagiannopoulou 1987, 299).
[364] Krapf 2017, 151.
[365] Rutter 2001, 126–127, fig. 12.
[366] Krapf 2017, 151; Tankosić & Mathioudaki 2011, 127.
[367] At Vranas (**C133**) two large MH II tumuli were constructed. Closer to Plasi, a tumulus was constructed inland from the settlement at Klopa (**C131**), a monumental grave covering a cist burial. It is unknown whether the tumuli at Vranas served Plasi or some other settlement in the vicinity. Given the tendency for tumuli and grave circles to be in close proximity to their settlements, it is plausible that Vranas should be connected to a settlement in closer proximity than Plasi. Several MBA cist and pit graves attest to MH occupation of the area around the Athenian acropolis (Immerwahr 1971, 52–53; Knigge 1976, 4–6; Pullen 1985, 127) and intramural graves

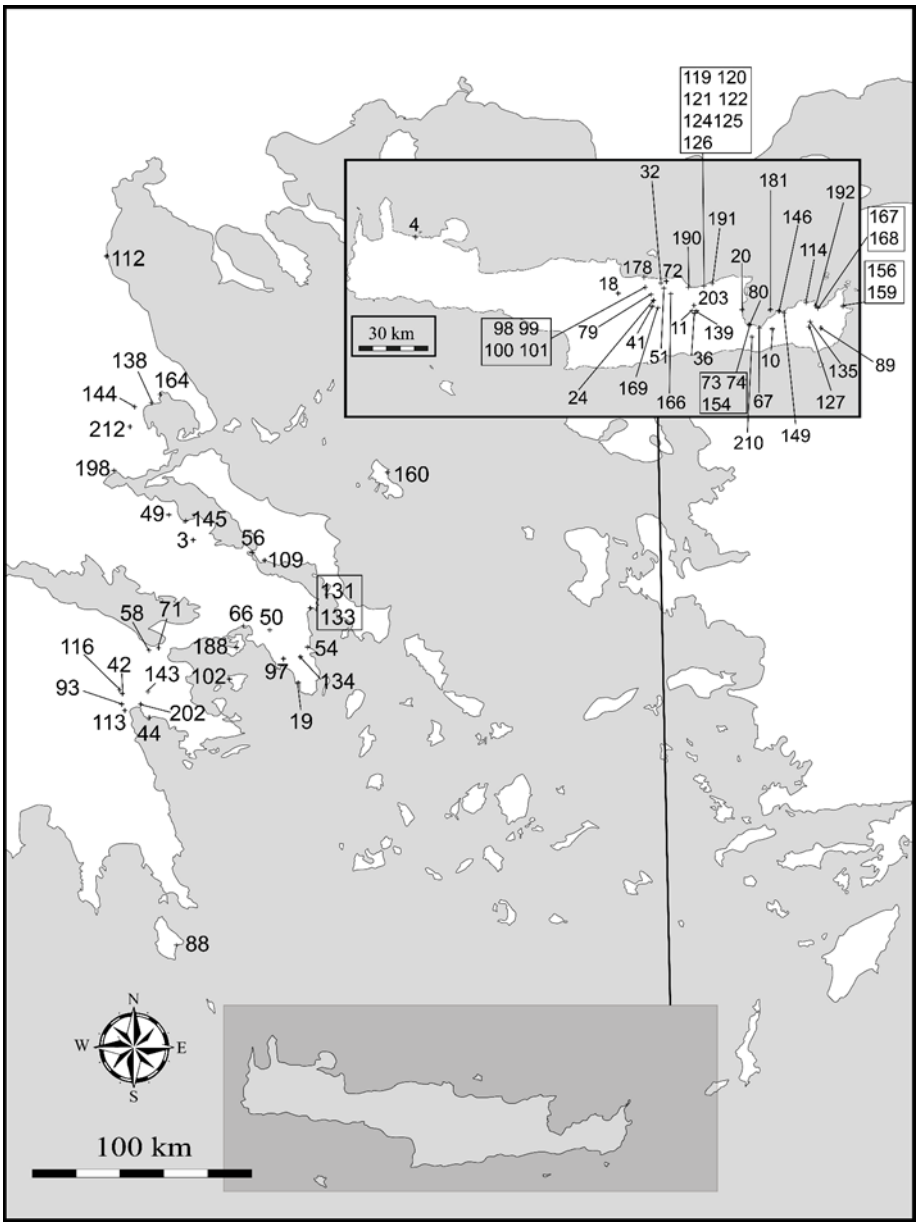

Figure 2.26. MB II cemeteries catalogued. For site number concordances, see Appendix 1.

were uncovered at Brauron (**C54**), Agios Nikolaos (**C18**), Agioi Theodoroi (**C8**) and Kiapha Thiti (**C97**).

close to the gate of the MH fortification walls, overlooking both the bay and entrance to the settlement.[368] In the Argolid, intramural burial dominated.[369] Burials also appear in previously unrepresented regions such as in the Corinthia,[370] Thessaly,[371] Macedonia[372] and Euboia[373] with the reuse of settlement space appearing to be common across the littoral mainland regions of Greece during this time.[374]

In the Aegean islands (except Crete), burial grounds are not present (Table 2.8B). This is in stark contrast to the situation in the EBA. This *lacuna* is noteworthy given the predominance of EC cemeteries. While EC communities were small, the number of contemporary cemeteries is striking.[375] MC settlements were larger than EC counterparts, though it seems reasonable to assume that the total populations of the islands were similar, with the EC population dispersed and the MC population nucleated. Despite this, the MC dead are elusive. The scarce funerary remains in the MC Cyclades consist of a few intramural burials and the odd scanty remains of chamber tombs. For the EC period, there are at least 30 cemeteries (Table 2.9A) included in this study.[376] Most are small and contain 10–20 burials, though there are several larger examples, in particular Chalandriani, which consisted of around 1000 burials.[377] As EC communities were small, a significant proportion of the population must have received burial. In terms of total burials, we come to an estimate of at least 2150 burials, which over roughly a millennium (3300–2250 BCE), gives 2.04 burials per year. For the MC period, however, including intramural burials and possible MH tombs (Fig. 2.9B), there are no more than 50 burials, between EC III and MC III (2250–1700 BCE), giving 0.09 burials per year, a 95% drop from EBA numbers. How should such a

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[368] Kilian-Dirlmeier 1997.
[369] Examples are known from Asine (**C44**), Lerna (**C113**), Tiryns (**C202**), Midea (**C143**) and Kephalari Magoula (**C93**). There were, however, extramural burials from the slopes of Aspis hill at Argos (**C42**).
[370] For example at Gonia (**C71**), where several MH cist graves were cut into settlement remains.
[371] Cist tombs of a MBA date were discovered at Mikrothives (**C144**) and on a hill overlooking the coast at Megali Velanidia. (**C138**).
[372] A tumulus was noted on the coastal plain at Leptokarya (**C112**) into which several MH II–III tombs were dug.
[373] A remarkable MBA double-chamber tomb is known from at Lefkandi (**C109**), which cut immediately into earlier settlement remains.
[374] There are, however, some extramural cemeteries such as the MH II cist tombs at the West Cemetery of Eleusis (**C66**). The "Temple of Apollo" at Corinth (**C59**) also had some MH II burials in an extramural cemetery, while at Stylida in Phthiotis (**C198**) rescue excavation uncovered some MH graves in a large extramural cemetery.
[375] Broodbank 2000, 176–180.
[376] Though given that there are several excluded due to scanty detail, it is likely that this number could be considerably larger.
[377] The higher end of the figure put forward by Broodbank (2000, table 5) is likely due to the reporting of extensive cultivation in the area which has probably destroyed many tombs (Hekman 2003, 56).

Table 2.9A. Early Cycladic cemeteries and a breakdown of internments.

	Cemetery	*Island*	*Chronology*	*Internments*
1	Akrotiri	Naxos	EC I	c.23
2	Kampos	Naxos	EC I	c. 90 graves
3	Lakkoudhes	Naxos	EC I	26
4	Lakkoudhes A	Naxos	EC I	6
5	Rhodhinadhes	Naxos	EC I	c.4
6	Ag. Anargyroi	Naxos	EC I–IIA	c.44
7	Karvounolakkoi	Naxos	EC I–IIA	82 graves
8	Phyrroyes	Naxos	EC I–IIA	120 graves
9	Tsikniades	Naxos	EC I–IIB	122 graves
10	Aphentika	Naxos	EC IIA	170 graves
11	Avdheli	Naxos	EC IIA	Robbed. c.3
12	Dokathismata	Amorgos	EC IIA	c.20 graves
13	Kapros	Amorgos	EC IIA	c.20 graves
14	Kapsala	Amorgos	EC IIA	11 graves
15	Stavros	Amorgos	EC IIA	6 graves
16	Agios Loukas	Syros	EC IIA–III	94 graves
17	Chalandriani	Syros	EC IIA–B	+1000
18	Avyssos	Paros	EC I	c.2
19	Glypha	Paros	EC I	c.4
20	Mnemoria	Paros	EC I	c.1
21	Panagia	Paros	EC I	23 graves
22	Plastiras	Paros	EC I	? Robbed c. 13
23	Pyrgos	Paros	EC I	58 graves
24	Kamari	Paros	EBA	c.1
25	Galana Gremna	Paros	EBA	28 graves
26	Krassadhes	Antiparos	EC I	50 graves
27	Agrilia	A. Kouphonisi	EC I/II	72 graves
28	Zoumaria	Despotikon	EC I	34 graves
29	Livadhi	Despotikon	EC I–IIA	c.27
30	Akrotiraki	Siphnos	EC I	c.11
31	Vathi	Siphnos	EC I	c.2
32	Rivari	Melos	EC IIB–III	c. 5 graves

Table 2.9B. Middle Cycladic cemeteries and a breakdown of internments.

	Cemetery	*Island*	*Chronology*	*Internments*
1	Agios Ioannis	Thera	ECIII/MC early	? c.5
2	Ailas	Naxos	MC late	c.4
3	Ayia Irini	Kea	MC late–LC I	c.25
4	Akrotiri	Thera	MC	Intra-mural. c. 1?
5	Phylakopi	Melos	ECIII/MC?	Intra-mural. c. 4?
6	Paroikia	Paros	ECIII/MC?	Intra-mural. c. 4?
7	Skarkos	Ios	MC late–LC I	c.10

reduction be explained? It is clear that the graves do not remain undetected in the landscape given the extensive archaeological exploration in the Cyclades and the detection of EC cemeteries. It also seems unlikely that they should have eroded away, as MBA burials in cists, rock-cut chambers and pits have

survived elsewhere in island environments, such as Crete. A possible solution to the missing Cycladic dead may lie in the practice of sea burial. Such a treatment of the dead is impossible to prove, though given the fact that most MC settlements were coastal and so few adult burials survive in the mortuary record, it is a possibility that should be considered and has found favour in the interpretation of other Aegean burial *lacunae*.[378]

There is continuity on Crete from MM I, though the practice of cave burial is gradually abandoned.[379] There is an increase in cemeteries in the Knossos valley,[380] coinciding with the floruit of the Protopalace at Knossos, where the inhabitants of the settlement may have wished to emphasise their ties to the land surrounding the settlement. Despite this, there is an overall decline in the use of cemeteries, with some abandoned during this chronological grouping, the most notable being Mochlos.[381] For those present, there is a mix of both coastal and inland burial during MM II.[382] The previously dominant practice of communal burial lessens by MM II and new burial practices emerge.[383] Worthy of discussion are the *pithos* cemeteries located at Sphoungaras and Pacheia Ammos on the coast of the Mirabello bay,[384] as well as house tombs at Malia and Sissi.[385] Given the importance of the sea as evinced through Minoan contact networks, as well as the prevalence of marine imagery in eastern Crete at this time, (Chapter 5) the placement of the burials, close to or on beaches, may have been symbolically significant, connecting the dead, funerary practices and the sea. Indeed this period has also been earmarked as one in which sea burial may have been practiced on Crete also and the placement of tombs so close to the coast would appear to show a link between death and the sea.[386]

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[378] For example in the Neopalatial period on Crete, see below.
[379] The use of caves beyond MM I is linked more to cult practices, rather than mortuary practices (Tyree 2001, 39–49).
[380] MM II chamber tombs were found at Ailias (**C98**), Gypsades (**C99**), Mavrospelio (**C101**) and the Hutchinson tomb (**C100**). Curious is the absence of EBA burials in the Knossos region, though sustained use of the area may have destroyed or obscured them from discovery.
[381] Legarra Herrero 2014, 158.
[382] MM II burials are noted from the coast at Agios Nikolaos (**C19**) and the *pithos* burials inland at Aitania (**C24**) and Anopoli (**C32**) could be from this period. The EM I cemetery at Gournes is reused in this period (**C72**), with a house tomb being constructed in the coastal zone.
[383] Wiener 2013, 157.
[384] The individuals were buried in a contracted position and placed upside-down (Seager 1916, 7–9; Wiener 2013, 157; Herrero 2014, 159).
[385] Schoep 2009, 45, fig. 3.1.
[386] Nilsson 1927, 625–626; Marinatos 1993, 231; Dietrich 1997, 26; Rehak & Younger 2001, 403; Hatzaki & Schuster Keswani 2012, 310. Legarra Herrero (2014, 159) sees a shift to *pithos* burial, which may not be as easily detectable as previous burial types.

2.10 Middle Bronze III–Late Bronze I

2.10.1 Settlement

The MB–LB transition is a boom period in terms of settlement intensity (53.5 SPC) though coastality decreases somewhat (Table 2.10A). Several regions see a slight drop in coastality and it becomes evident that the gap in coastality narrows between the littoral mainland (LCP1472) and that of the insular Aegean (LCP1188). This period sees the start of the Neopalatial period on Crete accompanied by increased 'Minoanisation' (adoption of Minoan culture and/or practices) across the Aegean,[387] particularly focused in the south, as well as more frequent Minoan contact with the Greek mainland.[388] On the mainland, the Shaft Grave phenomenon is an important development of this period, with the formation of a Mycenaean identity evident at various places on the Greek mainland.[389] It appears that various networks converge and compete, for example the Minoan networks, the Aeginetan networks and the growing maritime networks of the Greek mainland.

In both Attica and the Argolid, there is an increase in coastality and many of the major centres are found on the coast. Kolonna, Lerna, Asine and Eleusis all appear to be substantial settlements during this time.[390] A notable trend is the focus on defensive settlements skirting the region around the Saronic Gulf in MH III (Fig. 2.28).[391] The rise in these types of settlements may be a response to an aggressive maritime power, with Kolonna on Aegina being the likeliest candidate.[392] A military ideology at Kolonna may have persisted from MH II and resulted in the neighbouring populations moving to defendable locales. An alternative explanation, however, may be that these settlements could have been founded by Kolonna in an attempt to further strengthen a grip on the Saronic shores, perhaps blocking other competing powers in the process,[393] something that has also been posited as the stimulus for the reoccupation of Agia Irini on Kea at this time.[394] The infilling of some of the interior

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[387] Rehak & Younger 1998, 100.
[388] Branigan 1981; Schofield 982; Broodbank 2004; Berg 2007; Davis & Gorgogianni 2008; Weiner 2013.
[389] Feuer 2011, 507–536; Boyd 2015, 200–220.
[390] For example, two shaft graves are found in the Lerna settlement (Lindblom *forthcoming*)
[391] Sklavos and Kanakia in southern Salamis (**S84**), Kiaphi Thiti in southern Attica (**S111**) and Megali Magoula Galatas (**S154**) are all located in either elevated or defensive positions in MH III.
[392] With the earliest warrior tomb dated to MH II (Kilian-Dirlmeier 1997) and contemporary evidence for military/sea iconography from the settlement.
[393] Tartaron (2015, 36–37) hints at a possible competition between Mycenae and Kolonna in the Saronic Gulf, though this is more likely an LH I–II phenomenon, though competition could have begun even at this earlier stage.
[394] Crego (2010, 841-845).

Table 2.10. Middle Bronze III–Late Bronze I median LCP values by region. Red arrows indicate an increase in LCP median values from the previous period, indicating settlements were less coastal, while Green arrows indicate a reduction in LCP median values from the previous period, suggesting that settlements were more coastal. A horizontal line denotes the same value as the preceding period. The number of settlements this median is based on is listed in parenthesis next to the region. Where regions have fewer than three settlements, their LCP medians are not listed here. * For the purposes of this analysis, Euboia is considered part of the littoral mainland, rather than an island.

A. Settlement

	Argolid (10)	*Attica* (7)	*Boiotia* (3)	*Crete* (31)
LCP median	934 ▼ (-96)	1472 ▼ (-1557)	1012 —	1286 ▲ (+438)
	Cyclades (12)	*Dodecanese* (12)	*Euboia* (7)	*Macedonia* (5)
LCP median	1619 ▲ (+507)	1273 ▲ (+357)	3255 ▲ (+1108)	1049 —
	Saronic (12)	*Thessaly* (7)	*Insular* (64)	*Littoral* (42)
LCP median	1580	2417 ▼ (-547)	1188 ▲ (+297)	1472 ▲ (+21)
	Overall (106)			
LCP median	1328 ▲ (+367)			

B. Cemetery

	Argolid (10)	*Attica* (6)	*Crete* (25)	*Cyclades* (3)
LCP median	2159 ▲ (+1129)	1120 ▼ (-352)	2098 —	1775
	Thessaly (5)	*Insular* (31)	*Littoral* (26)	*Overall* (57)
LCP median	6796 ▲ (+2752)	1775 ▼ (-101)	1530 ▼ (-165)	1775 ▲ (+101)

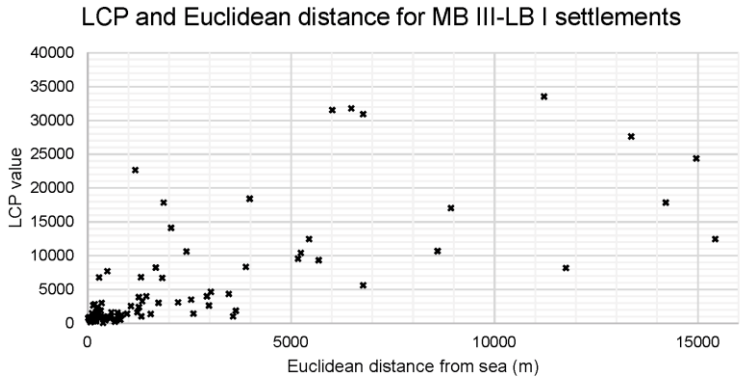

Figure 2.27. Scatter distribution of all settlements included in the MB II LCP analysis. Their LCP values are plotted against their Euclidean distance from the sea.

parts of Crete means there is more of a mixed settlement pattern between coastal and inland settlements. A new development is the appearance of small hamlet/villa sites, some of which are coastal.[395] The timing of this corresponds to the emergence of the new palaces, some of them located on the coast. This appears to be mirrored on some Cycladic islands, where the longstanding nucleated settlements of the MBA are joined by smaller satellite settlements representing a wider dispersion into the islandscape at the MBA–LBA transition.[396] The establishment of the new palaces at previously existing coastal settlements such as Palaikastro, Zakros and Gournia (as well as likely at Chania), indicate something of a reorganisation of priorities for Minoan society, the inclusion of a more intensive exploitation of and interaction with the sea, in addition to the land-based focus of palatial communities. Cycladic, Milesian and southeast Aegean imports at MM III Knossos may indicate the role of Knossos as a central player in Neopalatial Crete but also new strategies of interaction with the Aegean.[397] However, while the search for metals may have been the fundamental drive (i.e. Western and Eastern String models), it appears that seascapes penetrated more deeply into practices and behaviours during this period, reflected in the focus of settlement in coastal zones in the islands and on Crete, as well as in material culture and iconography (Chapter 5).

There is much continuity from the preceding period in the Cyclades and settlements such as Phylakopi and Akrotiri had considerable cultural exchange with Crete, though Minoan imports begin to be found at less metropolitan settlements as well.[398] By the end of this period, Cretan technology and practices were adopted at all major Cycladic settlements.[399] Despite the proliferation of Minoanising ceramics, actual imports appear to be less common than in the

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[395] For example Katevati (**S96**), Papadiokambos (**S199**) and Alevriko (**S20**).

[396] Raos (**S235**) and Ftellos (**S66**) on Thera and Troullos (**S278**) on Kea are close-by the larger settlements at Akrotiri and Agia Irini respectively. No such settlement on Melos has yet been found close to Phylakopi, though recent rescue excavations at Koufi may clarify any relationship (Barber *pers. comm*).

[397] Knappett & Nikolakopoulou 2005; 2008. For Cycladic imports see MacGillivray 1984; Sotirakopoulou 2010, 834–835. For imports from the Dodecanese and Miletos, see Knappett *et al*. 2013, 16.

[398] For example at Paroikia on Paros (Papagiannopoulou 1987, 181) and in a tomb inland in Naxos at Ailias (*ArchDelt* 17 (1961–2): A, 104–149).

[399] Weaving (Cutler 2012), pottery (Berg 2007; Hilditch 2008) and administration (Palaima 1982, 15–22).

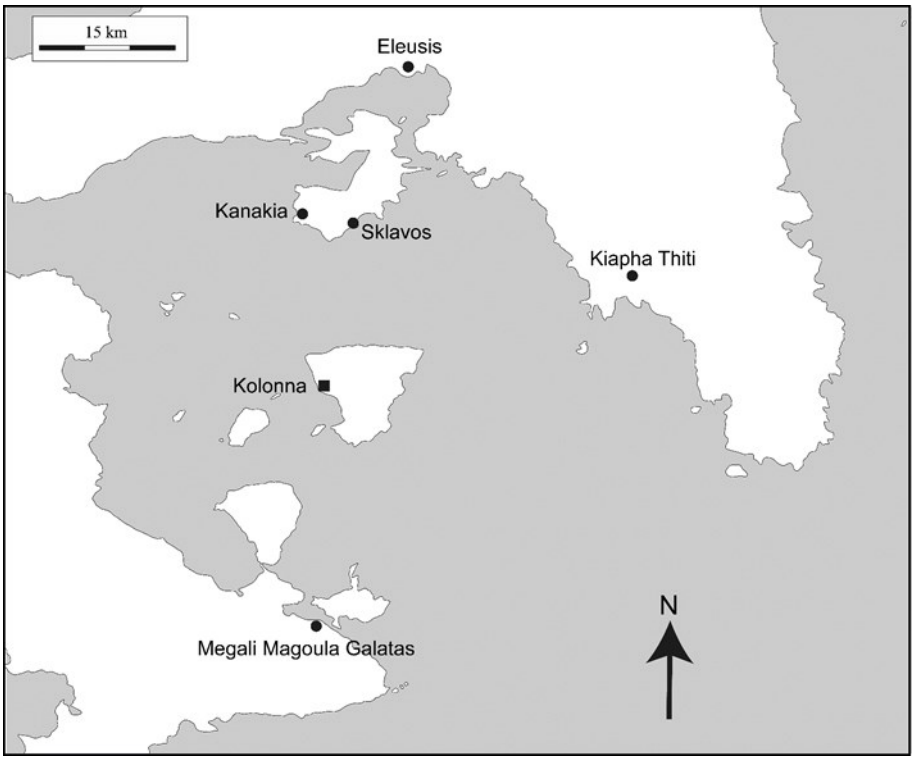

Figure 2.28. Map of sites around Saronic Gulf.

preceding period and Melian/Theran imports were more numerous than mainland or Cretan imports at some settlements at the end of MC–LC I.[400] The fortification walls at Agia Irini and Phylakopi in this period indicate increasing social complexity, but also the increasing risks that maritime network contact entailed.[401]

Settlement numbers increase in the Dodecanese, doubling with every successive period from the start of the MBA. There is a greater cultural affiliation with Crete and the region becomes more Minoan in character.[402] Settlements such as Seraglio on Kos, Pigadia on Karpathos and Ialysos on Rhodes follow the pattern established in the Cyclades in MB II, the settlement of coastal places in parts of islands, which serve as ideal nodes in contact networks.

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[400] For example at Agia Irini (Abell 2016, 83).
[401] The first fortification wall at Agia Irini is dated to Phase IV, roughly equivalent to MH II, with a more substantial wall in Period V in MC late (Davis 1986, 104–105). There has been differing opinions on the dating of the fortification at Phylakopi with Barber following Atkinson in arguing for a late MC date (Atkinson 1904, 30–35; Barber 1974, 50), though recently this was called into question as it appears that the main fortification can now be dated to LC III, with an earlier wall in LC I (Renfrew *et al*. 2007, 64; Earle 2019, 219). In any case, whether the fortification is MC late or LC I, it falls in the chronological range utilised here.
[402] Vitale 2016, 77; Broodbank 2004, 48.

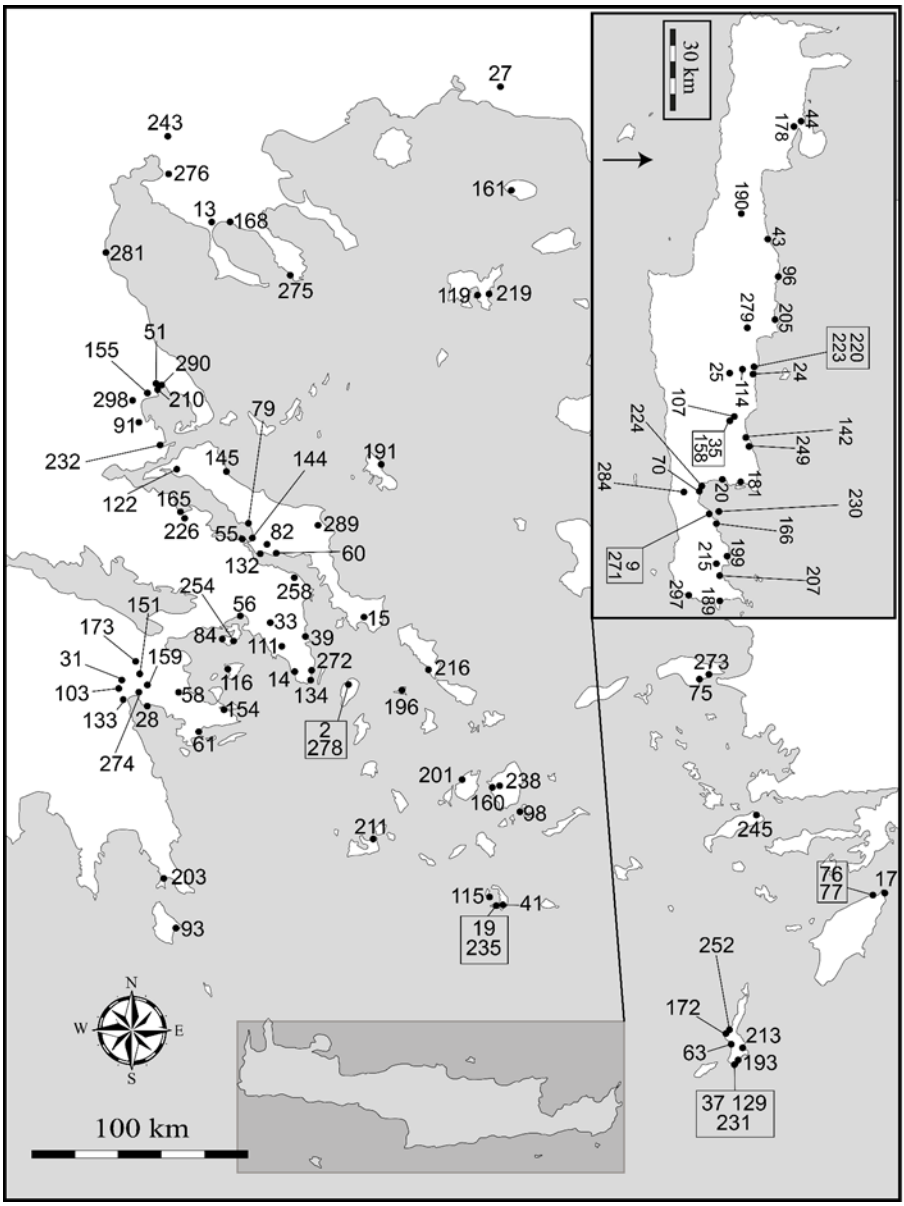

Figure 2.29. Map of MB III–LB I settlements. For site number concordances, see Appendix 1.

More settlements are evident in the study area of Thessaly during this period, representing something of a revival in archaeological visibility after the reduced evidence for habitation from EH III–MH II,[403] and this can also be extended to the zones outside the study area.[404] A concentration of occupation is evident around the Pagasitic Gulf in Thessaly, though the relationship between settlements such as Pevkakia, newly refounded Dimini and Volos is unclear. Given the role of Pefkakia throughout the EH and MH as a conduit for external contact, it may have been the seaport, while Volos and Dimini may have competed for prominence.[405] Given the presence of good quality arable land set a little further inland, the choice to inhabit (and in the case of Dimini, reinhabit) these locales is a strong indicator of the pull of the coast.

In the islands of the north and east Aegean there is again continuity in coastality and, like the islands of the Cyclades and Dodecanese, they appear to be participants in a Minoan dominated network. Minoan imports are reduced at Mikro Vouni in this period, though there is greater evidence of Minoan interaction at Poliochni on Lemnos.[406] By contrast, at Koukonisi on Lemnos most imported wares are Helladic, dating to MH III–LH I.[407] While contact with maritime networks appears to be the dominant trend, there appears to have been some agency for the settlements involved, in the choice with which networks to participate in.

Coastal Thrace generally appears to have been avoided from LN–MBA. The early LBA evidence from Asar Tepe is the first and only evidence of Thracian settlement in the study area. The majority of Thracian settlements are considerably further inland and settlements on the Thracian coast are underrepresented.[408]

The MB III–LB I grouping is one of mass network integration in most parts of the Aegean, largely driven by communities on Crete. Many insular regions see subtle reductions in coastality, which is contemporaneous with increased Minoanisation, though more likely a result of an increase in settlements in the Cyclades, Dodecanese and on Crete. The increase in coastality in Attica, however, likely reflects a greater extroversion in this period, which could have been stimulated by external interest in its metalliferous resources.

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[403] Relevant here is the relatively recent discovery of an MH house complex at Tsigenina close to Lake Karla (Agnoussiotis & Adrymi-Sismani 2009, 137–147), which was unfortunately known too late to the author to be included here.

[404] MH activity is known from Argissa (Hanschmann 1981), Agrilia (Vanderpool 1955, 227), Tsangli (Wace & Thompson 1912, 113–114) and also at Trikala (Daux 1958, 754).

[405] Papadimitriou (2006, 104) also argues this for LH II–III Thessaly.

[406] There is also some contemporary evidence for Minoan imports on the coast of Anatolia, at sites such as Troy (Pavúk 2005, 272, pl. LXVa), Çeşme (Şahoğlu 2007, 317–328, fig. 10) and Miletos (Kaiser & Raymond 2015, 147–161).

[407] These include Grey ware (Petrakis & Moutzouridis 2010), Aeginetan Matt-Painted and Bichrome (Boulotis 2009, 182–183).

[408] See Nenova 2018, 60, figs 3.1, 4.1, where all major sites are inland outside of the study area of this analysis.

2.10.2 Cemeteries

Crete sees a noticeable reduction in the total number of burial grounds, while the MC late–LC I burial record in the Cyclades continues to be almost non-existent (Fig. 2.29).[409] The inland cemetery at Ailas on Naxos may highlight the potential for the discovery of more use of the interior parts of the Cycladic islands, though otherwise cemeteries are still under represented.[410] On Crete, there is continuity at some burial grounds and several MM III–LM I chamber tombs are clustered in the coastal area around *Heraklion*,[411] though there are inland burial grounds as well.[412] Several places of burial are noted in the Argolid, where the practice of intramural burial continued, though there is an emergence of extramural cemeteries adjacent to parent settlements, located often inland and close to the entrance routes into the settlement.[413] The same pattern is repeated in Attica, where few MH III–LH I burial grounds have been excavated.[414] The presence of coastal *tumuli* in Macedonia highlight the increased use of coastal areas,[415] though elsewhere in the central and northern Aegean, intramural burial is most common.[416]

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[409] There are burials at Agia Irini (**C1**), while the EC II settlement at Skarkos on Ios was reused as a burial space (**C193**).

[410] Papagiannopoulou 1991, 304.

[411] A house tomb was constructed on the coastal plain at Malevezi (**C117**), west of modern Heraklion. In Heraklion proper, several chamber tombs of an MM III–LM I date have been excavated at Poros-Katsambas (**C178**), indicating the increased significance of this area in the Neopalatial period.

[412] An MM III *tholos* was reported in land in the uplands at Kalergi (**C78**), close to a likely contemporary settlement. Also at Agios Myronas (**C17**) and Archanes Phourni (**C41**).

[413] The most pertinent developments can be seen at Mycenae, where Grave Circle B occupies a ridge on the entrance to the town and Grave Circle A is closer, directly beside entrance to the town (See Boyd 2015, 433–447 for a detailed study of the mortuary sequence at Mycenae). Elsewhere in the Peloponnese, burials of an MH III–LH I date were excavated at Nauplio (**C150**), close to the later Paximidi fortress and at Dendra (**C61**), a tumulus was established dating to MH III–LH I, which served elites from Midea and would continue to do so into the Late Mycenaean period. Argos (**C42**) sees increased use for burial in the extensive MH–LH cemetery. A small cemetery was uncovered at Myloi Oikopedon Manti (**C148**), likely to be one of the cemeteries serving Lerna, while in the region around Prosymna (**C180**), Blegen uncovered several late MH–LH I burials. At Megali Magoula Galatas (**C137**), extramural *tholoi* were constructed overlooking the coast, though only Tholos 3 is MH III–LH I (Konsolaki-Yiannupoulou 2010, 72–73).

[414] Those that have include Plasi-Marathon (**C132**), where the settlement is abandoned in MH III and subsequently used as a burial ground at the end of that period. A lavish "warrior tomb" is constructed in MH III/LH I at the place that would later be the Archaic sanctuary. Other contemporary burials are known from the Vranas tumulus (**C133**) and also at Thorikos (**C201**).

[415] For example at Leptokarya (**C112**) and Pigi Athinas (**C174**).

[416] Intramural burials are known at Dimini "Toumba" (**C63**), Pevkakia (**C164**) and Sesklo Kastraki (**C189**). At Zerelia (**C212**), Wace *et al*. (1907, 214–216), assign a LH III date to the tombs, though Cavanagh & Mee (1998, 37), argue for an MH dating based on the lack of grave goods. The presence of a "wheel-made jug of grey-black ware" probably refers to a variety of Minyan ware, so a tentative MH dating could be advocated.

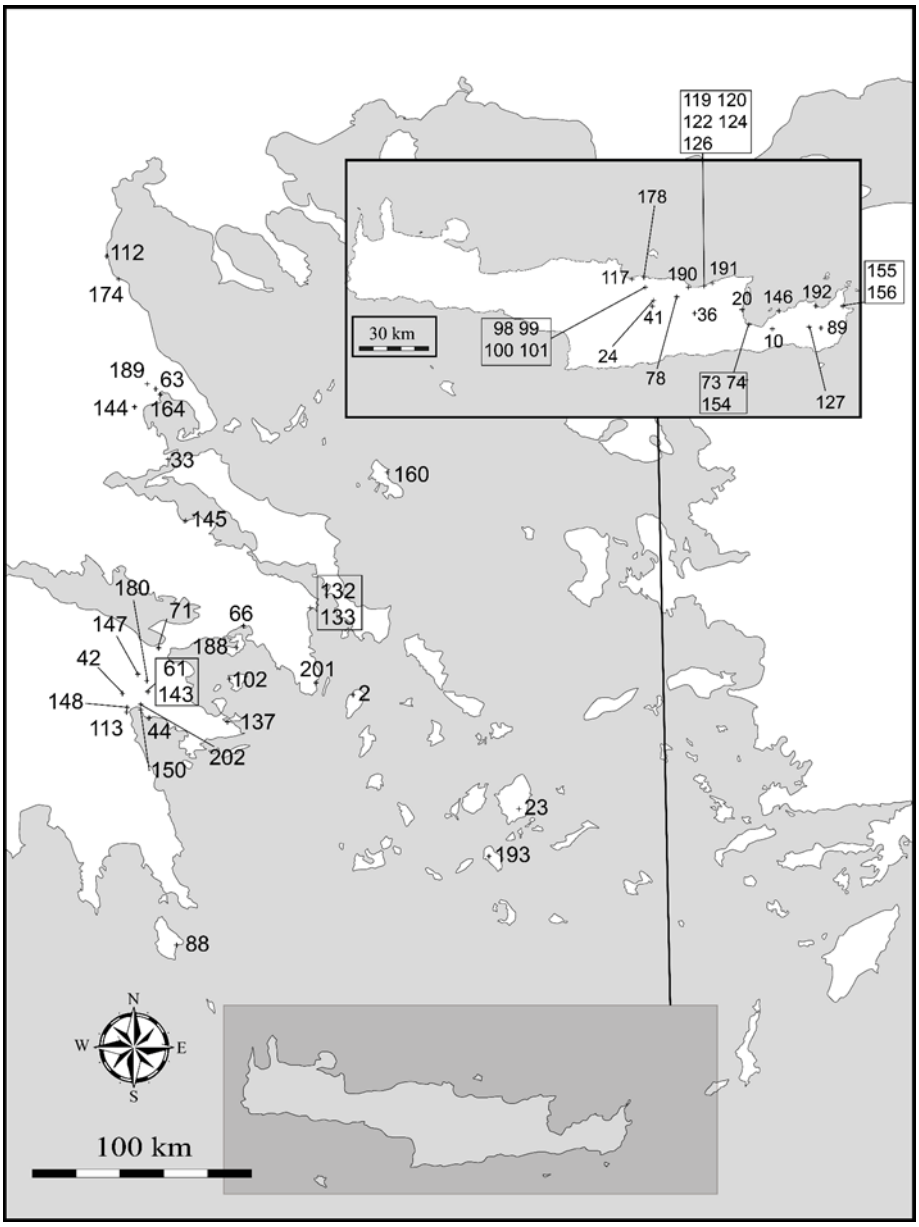

Figure 2.30. Middle Bronze III–Late Bronze I cemeteries catalogued. For site number concordances, see Appendix 1.

Table 2.11. Complete dataset consisting of the LCP median averages per region per chronological group for settlements. Green arrows indicate a drop in the LCP value, which indicates greater ease of access to the coast, while red arrows indicate an increase in the LCP median suggestive of a greater effort in travelling to the coast. The numbers in parentheses beside the LCP medians are the total number of settlements that the LCP median is based upon. They are colour coded, to highlight when there is a greater sum of data, which adds greater certainty to the LCP median or when there is less data, in which the LCP medians have less certainty. White indicates no data, maroon little certainty (1–4 cases), yellow is fair certainty (5–9 cases), while dark green is high certainty (10+ cases). "ND" denotes no data available conforming to selection criteria.

Region	LN		FN		EB I		EB I/II–IIA		EB IIB–III		MB I		MB II		MB III–LB I	
Argolid	6308	2	1920▼	5	1030▼	9	2747▲	13	1030▼	9	934▼	8	1030▲	9	934▼	10
Attica	6870	7	8183▲	21	5251▼	29	3372▼	31	2434▼	15	2421▼	10	3029▲	9	1472▼	7
Boiotia	ND	0	ND	0	2628	3	2628—	3	1012▼	3	1012—	3	1012—	3	1012—	3
Corinthia	19522	1	19522—	1	10242▼	3	11133▲	4	ND	0	ND	0	ND	0	ND	0
Crete	10963	2	5544▼	13	3309▼	28	1609▼	15	970▼	17	846▼	31	848▲	27	1286▲	31
Cyclades	1306	6	1484▲	9	1159▼	11	1759▲	31	1871▲	13	1423▼	10	1112▼	9	1619▲	12
Dodecanese	2247	1	1277▼	4	1277—	2	ND	0	524	1	583▲	2	916▲	7	1273▲	12
East Aegean	1373	2	1190▼	3	554▼	6	631▲	7	833▲	4	833—	2	833—	2	833—	2
Euboia	ND	0	1301	3	1075▼	3	966▼	12	880▼	6	3255▲	9	2147▼	10	3255▲	7
Laconia	ND	0	ND	0	ND	0	487	2	487—	2	487—	2	487—	2	487—	2
Macedonia	3523	13	2737▼	7	3125▲	10	3125—	8	2726▼	7	1049▼	5	1049—	5	1049—	5
N. Aegean	9038	2	714▼	6	620▼	8	558▼	7	682▲	6	588▼	5	834▲	4	834—	2
Saronic	199	1	199—	1	649▲	3	649—	9	199▼	1	199—	1	199—	1	1580▲	3
Thessaly	3191	6	3304▲	8	4577▲	5	277▼	3	277—	3	2417▲	5	2964▲	6	2417▼	7
Thrace	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	17039	1
Total	3084	43	2046	82	1989	120	1442	145	970	87	923	84	923	96	1230	106

Table 2.12. Complete dataset consisting of the LCP median averages per region per chronological group for cemeteries. Green arrows indicate a drop in the LCP value, which indicates greater ease of access to the coast, while red arrows indicate an increase in the LCP median suggestive of a greater effort in travelling to the coast. The numbers in parentheses beside the LCP medians are the total number of settlements that the LCP median is based upon. They are colour coded, to highlight when there is a greater sum of data, which adds greater certainty to the LCP median or when there is less data, in which the LCP medians have less certainty. White indicates no data, maroon little certainty (1–4 cases), yellow is fair certainty (5–9 cases), while dark green is high certainty (10+ cases). "ND" denotes no data available conforming to selection criteria.

Region	LN		FN		EB I		EB I/II–IIA		EB IIB–III		MB I		MB II		MB III–LB I	
Argolid	ND	0	1504	2	794▼	3	895▲	1	895—	3	895—	5	1030▲	7	2185▲	10
Attica	ND	0	5873	2	891▼	7	1197▲	11	1197—	3	2484▲	3	1472▼	9	1120▼	6
Boiotia	ND	0	2628	1	ND	0	17012	2	ND	0	12145	2	ND	0	ND	0
Corinthia	ND	0	ND	0	ND	0	10593	4	ND	0	ND	0	12494	2	5465▼	1
Crete	ND	0	22640	2	17401▼	19	1653▼	23	1584▼	22	1584—	49	2098▲	43	2098—	25
Cyclades	ND	0	552	1	3491▲	28	1994▼	35	2923▲	8	2707▼	5	ND	0	1775	3
Dodecanese	ND	0	ND	0	ND	0	ND	0	4500	3	ND	0	ND	0	ND	0
East Aegean	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0
Euboia	ND	0	64935	1	ND	0	7032	4	837▼	1	ND	0	1161	2	ND	0
Laconia	ND	0	ND	0	ND	0	84	1	ND	0	ND	0	ND	0	ND	0
Macedonia	ND	0	3432	1	ND	0	ND	0	ND	0	ND	0	1215	1	1531▲	2
N. Aegean	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0
Saronic	ND	0	ND	0	199	1	199	1	199—	1	199—	1	199—	1	199—	1
Thessaly	ND	0	ND	0	ND	0	ND	0	ND	0	4122	2	4044▼	4	6796▲	5
Thrace	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	ND	0	17039	1
Total	ND	0	2542	10	3491	58	1608	82	1966	41	1584	68	1695	73	1775	57

2.11 Coastality and survey evidence

The GIS analysis of coastality above has outlined key developments in the spatial relationship between locales and the sea in the study area (See Tables 2.11–12 for complete overview). The analysis, however, has had a range of selection criteria, which led to the exclusion of artefact scatters and ephemeral traces of habitation or burial. To complement and nuance the picture and address the issue of representability, case studies based on survey data are analysed below in the same manner to further validate or challenge assertions put forward so far. This promotes a shift from a macro to a meso perspective and allows for an interrogation of whether the results conform or diverge from those already presented and to give a fuller picture of coastality in the catchment area.

In order to maintain compatibility with the previous analysis, the selected surveys need to fall within the catchment area, with an even mix between coastal and inland areas, contain clearly defined divisions within various phases of prehistoric occupation, have comparable methods, and cover in similar levels of detail the same chronological range (i.e. Neolithic – Bronze Age).

While several surveys fulfil these criteria, [417] the surveys chosen were the *Methana Survey Project* (MSP),[418] The *Southern Argolid Survey* (SAS),[419] the *Halasarna Survey Project* (HSP)[420] and the *Gournia Project* (GP).[421] Except for abiding to the conditions outlined, these surveys further elucidate settlement patterns of regions covered with less attention, such as the Saronic Gulf (MSP), the southern Argolid (SAS) and the Dodecanese (HSP), while the more intensive landscape data from east Crete in the GP serves as an important comparison for the patterns on Crete as a whole.[422] The landscape data obtained was subjected to the same GIS analysis using LCP's, though in this

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[417] These include, for example, the *Vrokastro Regional Survey Project, Malia Plain Survey, Pseira Island Archaeological Survey, Zakros Archaeological Survey* and *Kavousi-Thripthi Survey* on Crete, the *Kythera Island Project*, *Antikythera Survey Project* and *Melos Survey* in the Aegean islands and the *Almiros and Sourpi Plains Survey*, *Sithonia Survey* (regrettably this was known to the author too late to incorporate extensively here) and the *Southern Euboea Exploration Project* on the Greek mainland.

[418] Mee & Forbes 1997.

[419] Jameson *et al*. 1994.

[420] Georgiadis 2012.

[421] Watrous *et al*. 2012.

[422] Several surveys did not adhere to the selection criteria, such as the *Eastern Korinthia Archaeological Survey* (not continuous to coast), *The Bays of East Attica Regional Survey* (only coastal areas surveyed), *The Mazi Archaeological Project* (only inland surveyed), *The Kotroni Archaeological Survey Project* (only inland surveyed), *The Oropos Survey Project* (lack of definition between prehistoric finds), *Agia Photia Survey* (did not extend to full 15km inland), *Berbati-Limnes Survey* (only inland surveyed), *Keros Island Survey* (unpublished at time of writing), *Knossos Urban Landscape Project* (only inland surveyed), *Northern Keos Survey* (did not extend to full 15km inland), *Southern Keos Survey* (did not extend to full 15km inland),

instance, smaller sites such as ceramic and obsidian scatters were included as well as cave sites.

For the area covered in the GP, there are some comparable trends to Crete as a whole (see Appendix 2A: Table 22A). There are few FN sites, though those present are inland. In general, this trend continues until EM IIB–IIIA, when there is an increase in coastality corresponding with the rest of the island, though it is less pronounced in the survey area. A decrease in the total number of sites in both EM IIB–IIIA and EM IIIB–MM I in the GP survey area corresponds to greater nucleation seen elsewhere on Crete, which is synchronous with the beginning of state formation. However, unlike the general trend for Crete, the EM IIIB–MM I period and onwards sees a reduction in overall coastality in the region, where many sites are found in less coastal areas. The fact that there is a rapid increase in settlement numbers onwards from MM II especially, may correspond to the movement of communities from the palatial centres to villa and hamlet sites which, combined with the low coastality of MM II and MM III–LM I, shows that many of the new sites were established inland. Being such a large island, a survey focusing on one part of Crete can hardly be indicative of the whole island, though geographical distribution of sites seems to show diachronic occupation of both interior and coastal areas, for example the clusters of sites around *Epano Chorio*, but also by the coast at *Pacheia Ammos*.

The HSP allows for the filling of a few gaps in the Dodecanese (see Appendix 2A: Table 20A). On a small island such as Kos, most sites on the island would be represented by lower LCP values, so the values for both the LN and FN indicate a preference for inland or more elevated spaces, despite their low values. The HSP survey in particular is hampered by the difficulty to determine the exact dating of several sites, though those sites that are listed more generally as "Neolithic" were, on average, as coastal as the sites that could be dated more narrowly, showing a more general trend in the Neolithic. In the EBA, there is a marked increase in coastality on the island, though this may be skewed in part by the coastal focus of the intensive survey area. In comparison to the Neolithic, there are more sites noticeable in the EBA, though again a majority could not be assigned to particular phases. From MB II to MB III–LB I there is a reduction from two settlements to just one (Seraglio). What this tells us is that there is a high chance that most, if not the entire population,

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Saronic Harbors Archaeological Research Project (only coast surveyed), *Ziros Survey* (only inland surveyed).

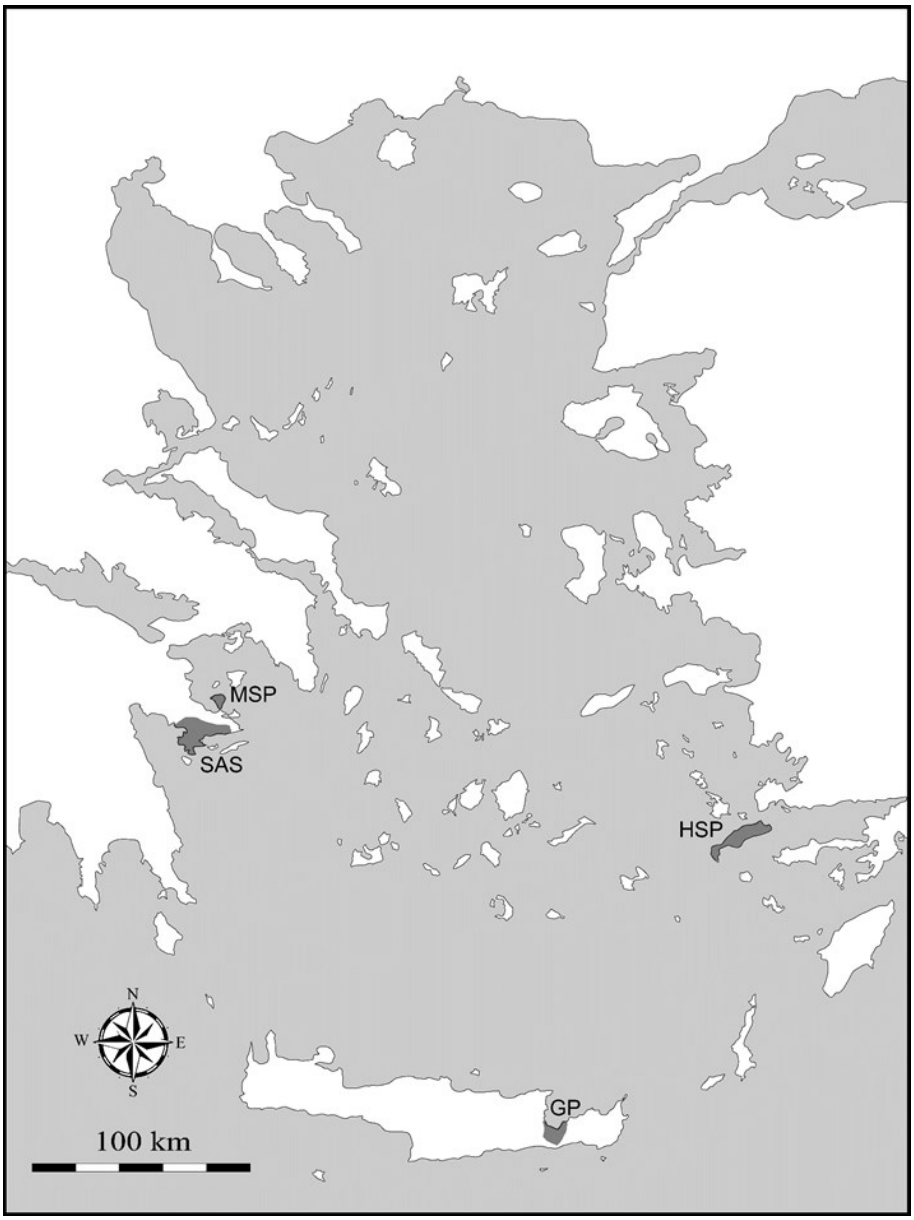

Figure 2.31. Surveyed areas included in analysis.

resided at the nucleated coastal settlement of Seraglio. It means that the sea would have played a key role and the location of the settlement, beside the coast, may have made it a preferred location for nucleation, especially in the wake of the climatic disruption of the EB III. This trend mirrors that of the contemporary Cyclades, where many islands harbour one nucleated settlement and further strengthens the argument that coastal settlements in the MBA were

stable places and that interaction with the seascape may have encouraged this stability.

The SAS site pattern differs from the wider trend in the Argolid (see Appendix 2A: Table 21A). The settlement pattern is not coastal in LN–FN while from the start of EH I onwards it is considerably more coastal than in the rest of the Argolid. An increase in sites in the FN corresponds with slightly higher coastality, though overall most sites were non-coastal, likely focused on inland pastoralism. By the start of EH I, the number of sites more than double. The increase in coastality suggests that many of these new sites were placed in coastal or near-coastal areas contrasting with previous patterns. The EH I trend continues mostly unchanged in EH IIA, though in EH IIB–IIIA there is a reduction in the number of sites, which occur in other regions as well, though this could also be as a result of difficulty in isolating EH IIB–IIIA ceramically.[423] However, site numbers stay consistent into the MBA, when there is a further increase in coastality in all phases, though especially in EH IIIB–MH I. This contrasts markedly with the overall pattern for the rest of the Argolid and perhaps indicates a different strategy pursued in the wake of climatic change. In terms of the trends, it appears that the southern Argolid responded in a manner more akin to the islands than the rest of the Argolid, where nucleated, coastal settlements were preferred.[424] The survey included elevated, inland regions which appear to have been avoided entirely after the beginning of EH I, with sites tending to be clustered around the coast (such as Labayanna coast, Kilada bay and Porto Cheli bay) or inland arable plains (such as the area around modern Fournoi and Kranidi).

The proximity between the southern Argolid and Methana allow for effective comparison (see Appendix 2A: Table 19A). The Neolithic was almost entirely absent in the MSP, with only one FN site identified, found in the elevated interior of the island.[425] As with the SAS, site numbers increased drastically in EH I, and on Methana coastality also increased for the duration of the EH I and EH IIA phases. Considerably fewer EH IIB–III sites were evident than in the preceding phase, though this could again be due to the difficult EH III ceramic horizon. Those sites that could be recognised, however, exhibited a slight reduction in coastality, leading tentatively to the conclusion that sites

[423] Rutter 1993, 772.
[424] Especially the Cyclades see Schallin 1993, 70.
[425] Though survey focused more on the coastal areas, so there is potential for the existence of more sites further inland (Mee & Forbes 1997).

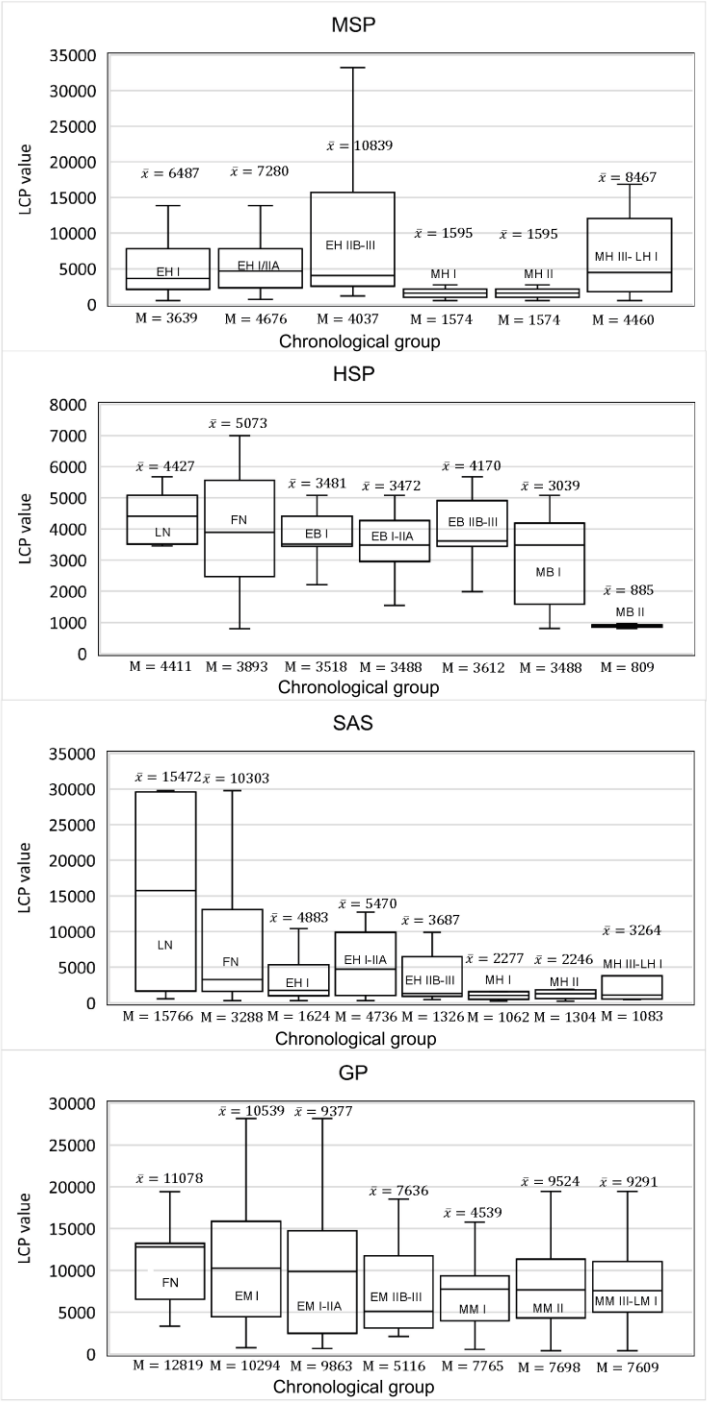

Figure 2.32. Box plots for survey areas and time period comparisons.

were in more elevated or defensible regions during this time. Akin to the pattern seen in the South Argolid, however, is the increase in coastality in MH I where the few settlements noted were exclusively beside the coast until MH II. Once again, this confirms the process of nucleation observed in various regions of Greece during this time, which seems to have favoured a more coastal distribution for nucleated settlement. Where the MSP and the SAS deviate, however, is in the MH III–LH I patterns, when on Methana there is a significantly lower coastality than in the earlier phases of the MH. The trend here is more in line with the general focus of settlement in elevated or defensive spaces as seen in the rest of the Saronic Gulf, which may have been a result of seaborne aggression, perhaps influenced by small world Saronic contact with Kolonna on Aegina.

The use of these surveys as case studies has allowed for effective comparison with various regions in the overall analysis. Generally, trends previously noted are validated by the surveys analysed here (Fig. 2.32). The Neolithic, in general did see lower coastality, while across all regions, settlement numbers increase in the EBA, around which time coastality also increases. This increase in site numbers starting in EB I may be a result of an increase in population, though the longer character of the phases of the EBA may mean that many sites may be settled and abandoned *within* the same ceramic phase and thus account for the drastic increase in numbers as seen across several regions.[426] This, however, does not have any implication for the validity of the coastality values, as even if sites are abandoned, it seems that new settlements are still formed in coastal areas.

The EB IIB–III transition proved to be problematic for mainland surveys. Ceramic definition may partially be blamed, though it seems indisputable that there was a reduction of sites during this time, which in some areas was associated with a less coastal way of living. Across several regions MB I saw a further reduction in coastality, apart from the regions covered by the MSP and SAS, which appear to follow a trend akin to those seen in the Cyclades, with a focus on coastal, nucleated settlement. That this high coastality continued into MB III–LB I in the South Argolid, when it did not on Methana, suggesting that the southern Argolid was far removed from the burgeoning expansion of neighbouring proto-states such as Kolonna, unlike Methana.

The trends seen on Kos may not be wholly representative for the rest of the Dodecanese, though it is unlikely that Kos is entirely unique in its site-distribution throughout the LN–LB I. The focus of activity before the MBA appears to be in semi-coastal, inland or elevated positions. The fact that activity in the Dodecanese becomes more archaeologically visible in MB–LB may be a result of the littoral focus in property development and subsequent rescue archaeology. The HSP is therefore a vital account of what *may* be the trend for

[426] A practice of transhumance would also account for the increase in site numbers.

the other islands of the Dodecanese, though archaeological exploration focusing on inland areas of these islands are necessary to confirm this suggestion.

The variety evident in the GP and on Crete more generally may be explained through its status as an island continent, in which the island is of a sufficient size to allow for a wide variety of ways in occupying the land. The sites of the GP are somewhat less coastal than the rest of Crete, though there is a clear shift to higher coastality in EM IIB–III, in accordance with the rest of the island. The lack of coastal occupation from MM II onwards is somewhat puzzling, though the role of Gournia may be important. Clearly a substantial proportion (comparatively) of the population covered by the GP survey would have lived in Gournia or in one of the neighbouring, presumably affiliated, settlements. Its status as a palatial settlement may have led to it having a territorial influence in the region and it seems that the areas closer to the coast, around *Pacheia Ammos* were avoided for settlements. The clustering of settlements further south around *Kato Chorio* and in the more elevated regions therefore may have been a result of avoiding the authority of Gournia, leading to a more inland focus of settlement during the periods in which, for the rest of Crete, there appears to be a greater focus on the coastal areas of the island.

2.12 Discussion: wider implications

Having broken down the coastality GIS evidence into chronological periods in the previous sections, here is presented a discussion of the key points that bear out from the analysis.

2.12.1 Coastal longevity

A first statement can be made about longevity and coastal settlements.[427] There are inland exceptions,[428] though there is stronger evidence for continuity at coastal settlement. Over the *longue durée*, successive generations of people and building phases show that coastal settlements were either adaptable and resilient places to inhabit in their own right, or made affordances to more

[427] For example: Lerna (Neo–LBA), Asine (EBA–LBA), Tiryns (EBA–LBA), Kolonna (Neo–LBA), Akrotiri (Neo–LBA), Phylakopi (EBA–LBA), Grotta (Neo–EBA, LBA), Agia Irini (Neo–EBA, MBA–LBA), Mikro Vouni (Neo–LBA), Poliochni (Neo–LBA), Palamari (EBA–LBA), Thermi (EBA, LBA) and Pevkakia (Neo–LBA) being examples.
[428] Such as Knossos (Neo–LBA and later), Sesklo (Neo–LBA) and Mycenae (Neo?–LBA).

Figure 2.33. Coastal settlement Kolonna on Aegina was occupied throughout the chronological focus of this study (by author).

adaptable and resilient living, with more alternatives then inland populations. These places weathered climatic, technological and socio-political changes.

Take for example the technological development of the sailing boat in the Aegean in at the end of the EBA.[429] Several coastal sites predated this development but maintained relevance as habitational spaces after its adoption. Where previously paddled boats encouraged small-scale mobility, the sailing boat increased the sea-travel range and by extension, the range of possibilities and may have multiplied the benefits and risks involved in coastal habitation.

In contrast to the long-lived nature of many coastal settlements, settlements occupying locations that are more defensive are generally one phase or short-lived settlements.[430] These settlements argue against any cultural structures tying communities to a specific *place*, if there were, the significant effort invested in their construction and fortification would mean that the settlements ought to have been occupied longer.

[429] The traditional dating for the appearance of the sail is EM III, based on its first iconographic appearance on Crete (Broodbank 2000, 341–345).

[430] Panormos (EC IIB), Kastri-Chalandriani (EC IIB), Kavousi Azoria (FN), Kastro Alimnia (FN) are all in occupation for a century or two at the most.

2.12.2 Practical considerations

Several settlements serve as safe harbours against prevailing winds and currents, allowing ships to stop at points protected from both the *meltemi* and *sorocco* winds,[431] usually situated around bays and gulfs, where the sea winds are rarely strong, such as in the Argolic, Pagasitic and Saronic gulfs (Fig. 2.34). For settlements on the islands, the winds would have been stronger and more volatile, making local safe harbours more significant after the introduction of the sail. These locations include Phylakopi on Melos and Agia Irini on Kea, while Akrotiri on Thera would have been protected against only the *meltemi*, and exposed to the *sorocco*, while Grotta on Naxos would have been exposed to the *meltemi* but protected from the *sorocco*. At these harbours, seafarers could wait out ill winds and take advantage of favourable winds, making them essential nodes of contact networks. Some areas of the Aegean become effectively wind tunnels, where winds would have been high and sailing may have been treacherous at certain times of year. The Erimonisia, Amorgos, south Naxos and the northern Cyclades are all exposed to one or both of the major prevailing winds of the Aegean, leaving sailors with few safe harbours to take refuge in, the exception being the bays around Agia Irini on Kea and Panormos on Naxos, perhaps accounting for the abandonment of settlements in these places after the introduction of the sail.

Another practical feature is that FN–EBA coastal settlements are located on capes and exposed shores prior to the adoption of the sail.[432] In these places, seaward access could be gained via paddling, which would have been possible (if difficult) even in head winds. In these places, the major obstacle would have been the currents rather than the winds. After the adoption of the sail, however, maritime movement in these spaces would have been untenable, as sailing ships would have been unprotected against strong winds, even if currents were favourable. In practical terms, the physical performance of seafaring using paddled boats, where the currents are the more important concern, is considerably different to that of sailing boats where the winds are more important. For the former, the individual is at sea-level amongst the waves,

[431] The *meltemi* (or etesian winds) is a strong northerly, north-easterly or north-westerly wind which blows between May and October in the Aegean (Allaby 2020). The *sorocco* (sometimes *sirocco*) is a dusty southerly wind in the Mediterranean region with an origin in the Sahara desert, prevalent in spring and autumn (Dunlop 2008).

[432] Dhaskalio on Keros, Agios Kosmas in Attica, Kephala on Kea, Agia Pelagia in southern Euboia and Strofilas on Andros to list only a few.

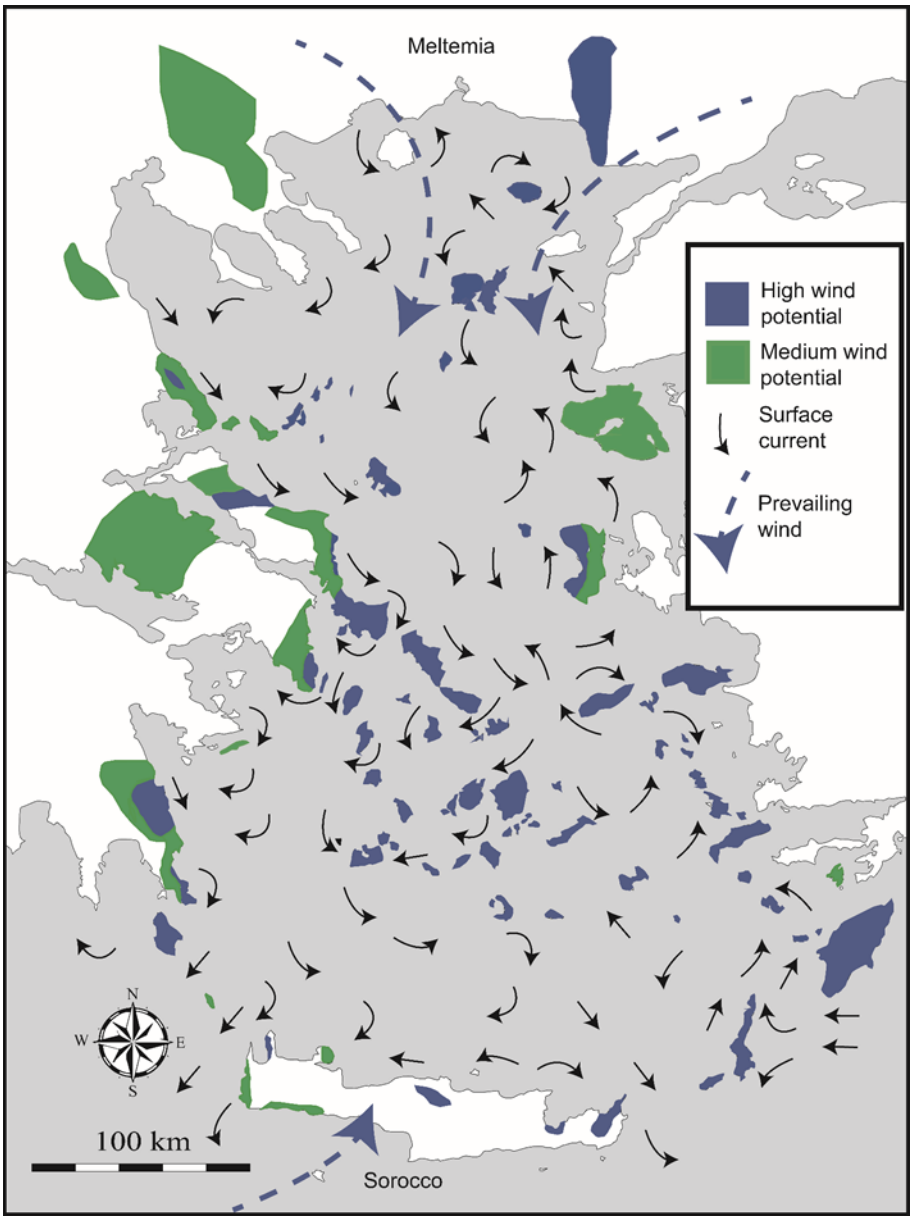

Figure 2.34. The directionality of summer surface currents, areas of higher wind potential and the origin and directionality of the main prevailing winds. Surface current data adapted from Bathrellos *et al.* 2009, fig. 20. Wind potential data adapted from Kabouris & Hatziargyrou 2006, fig. 1.

while in the latter, set above the waves. Perhaps perception of the sea changed from a place of currents, to a place of winds across this transition.

Some locales gain particular importance after the adoption of the sails. In these places, long-lived, stable and larger settlements gain prominence, such as Agia Irini and Phylakopi, which were suitable locations to be both protected against the wind, but close to strong wind 'jumping off' points facilitating travel. This is in addition to the long-lived settlements located in areas with a much lower wind potential, such as the Argolic, Saronic and Pagasitic gulfs.

2.12.3 Death and coastality

Another outcome of this analysis is that there appears to be almost no general link between the spatial positioning of cemeteries and the sea. Coastal cemeteries are rare, and when present, they are usually in close association with coastal settlement. There are exceptions, such as Asteria Glyphada in Attica and Chalandriani on Syros, where the burial grounds are located closer to the coast than their parent settlement. This lack of burial coastality is asserted even though there are intramural burials at several coastal settlements. In these instances, the spatial relationship between the area as a place of burial and the sea should be relegated in favour of the relationship between the settlement and its use as a burial place. An exception could be made for MM II–III Crete, where coastal burial and the possibility of sea burial, as well as in the Cyclades, hints at the possible significance of the sea in mortuary practices during this time.

A rare occurrence is the use of offshore islands for burial.[433] This appears to have been the case in EH I/IIA Attica at Raphtopoula, as well as at Malia on Crete, where the Ilôt du Christ and Agia Varvara islets were used as burial places.[434] Though rare, these instances suggest that the burial of the dead may sometimes have taken place on small offshore islets, though its prevalence does not appear to be high. Greater investigation of the smaller offshore islets of the Aegean is needed to confirm its prevalence.

2.12.4 'Conscientious objection'

Some settlements are not in close contact with the coast. That this is the case on the Greek mainland should not come as a surprise, where access to inland

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[433] Further work on surveying the small, offshore islets common in various areas of the Aegean, such as the *Small Cycladic Islands Survey* (https://smallcycladicislandsproject.org) will prove valuable in determining how common this practice was.

[434] The Ilôt du Christ islet may have been accessed through a shallow causeway, while the Agia Varvara islet appears to have been accessible only by boat or swimming. For Agia Varvara (**C118**), there were also burials in the rock shelter facing the islet, which sets it in distinction from the Ilôt du Christ islet (**C122**).

networks was possible, though on islands it is more surprising. Take for example Debla on Crete. This small EM I–IIA settlement was located on the uplands south of modern Chania, at high elevation and secluded in a rough landscape. The inhabitants of the settlement are unlikely to have had any meaningful interaction with the sea, save for indirect interaction with coastal communities on the same island. Imported obsidian, for example likely arrived at the settlement as a result of intra-island networks rather than direct access.[435] It is all the more remarkable given that the second phase of occupation at Debla in EM II, is the same period in which other communities on Crete were establishing more substantial, coastal settlements, of the like seen at Gournia, Zakros, Malia and Chania. In explaining the positioning of a settlement like Debla, we must look towards animal husbandry and secondary products.[436] Life in such an exposed location would have been impossible before secondary animal products and the area would not have been particularly lucrative for grain-based agriculture.

This pattern can be seen across Crete during the FN–EM I period at other sites such as Magasa Vigli, Karydi and Karavelas, among others. Attica provides a another contemporary example. In EH IIA, there are several coastal sites across the region on both the south coast, such as Agios Kosmas and the east coast, such as Askitario. Yet at the same time, there is contemporary occupation of the Mesogeia plain, such as Koropi, Lambrika and Merenda, where there appears to be a focus on agriculture and metalworking.[437] What these examples show is that although living beside the coast was a viable and popular option, it is not the *only* option. Communities could choose agricultural or pastoral lifeways without any great degree of human-sea interaction.

2.12.5 Networks

A recurring theme throughout this analysis is that micro and macro-scalar networks, as well as environmental stability, appear to be significant drivers of coastality. Periods and regions, which meet these parameters, in addition to an internal social dynamic pushing towards network integration, are those with higher coastality. Coastality increases through time on Crete from FN until LM I as greater network incorporation and internal processes pushed communities toward extroversion in extra-island contact, which is reflected in a more coastal settlement pattern. Initially this appears to be intra-Aegean contact during FN–EM IIB (Fig. 2.35*:*1), though from EM III to MM II contact appears more regular with the eastern Mediterranean (Fig. 2.35*:*3), before an

[435] Warren & Tzedhakis 1974, 322–333.
[436] Sherratt 1981 261–306; Watrous 1994, 704.
[437] Andrikou 2020, 5–6.

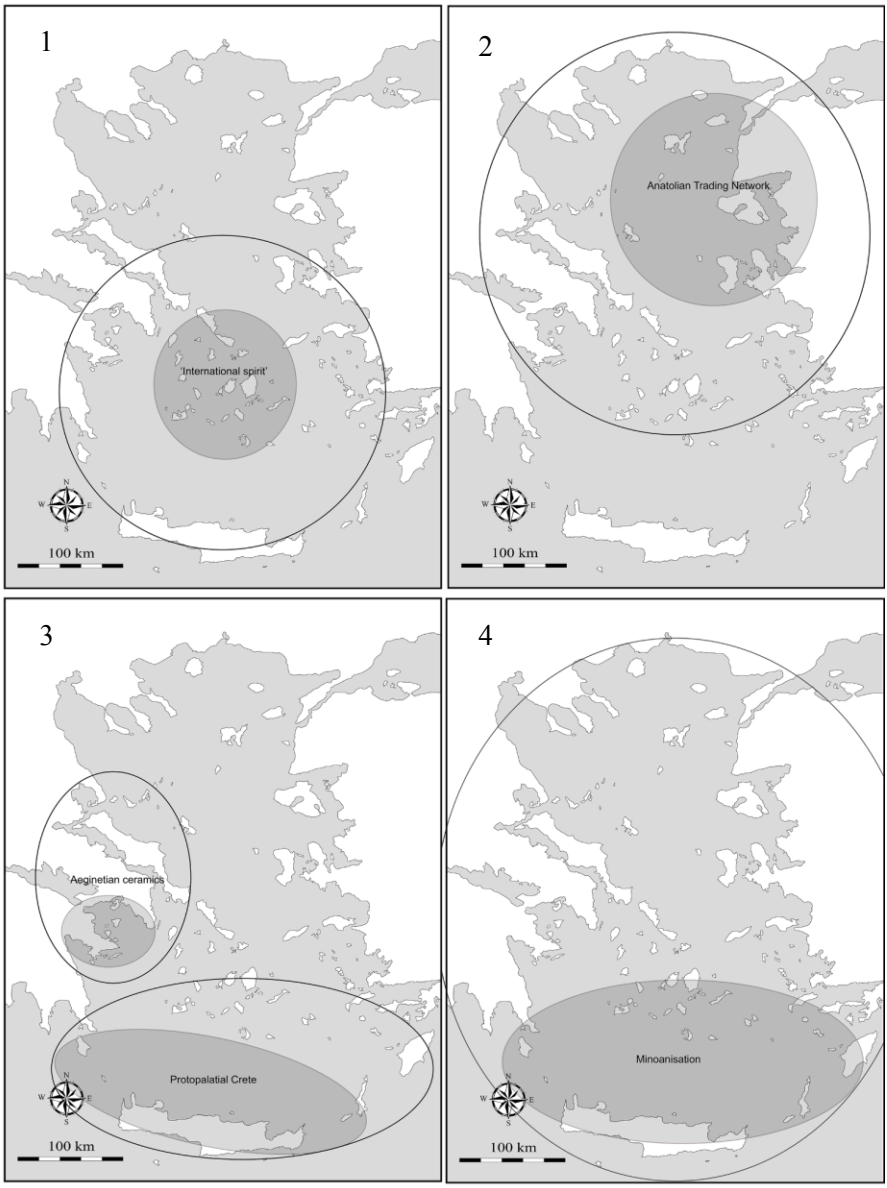

Figure 2.35. Multi-regional networks from the study area.

Aegean reorientation from MM II onwards (Fig. 2.35:4). Slight variability in coastality over time in the Cyclades is reflective of oscillating periods of greater tension, as a result of a combination of environmental and social factors and therefore slightly lower coastality (FN, EC IIA, EC IIB–III), and lower tension, as a result of more favourable social and environmental conditions with slightly higher coastality (EC I, MC II).

In the north and east Aegean, a high degree of coastality is evident throughout the time focus of this study, where settlements are almost always placed in immediate proximity to the coast. In these areas, connection with the Anatolian Trading Network (Fig. 2.35:2) through the EBA could have exerted a significant pull towards the coast. In some areas network integration can occur in a piecemeal fashion, for example in Attica, which from LN–EH IIA has a relatively mixed settlement pattern trending towards greater coastality. This is due to the presence of settlements on the interior as well as immediately on the coast, though over time these inland settlements become less numerous, while new settlements were established in coastal areas. The FN sees the lowest coastality in Attica, which may have been a result of the Attic-Kephala network, which may have forced an occupation of the interior due to the potential for violence. From EH IIB onwards, Attica exhibits greater coastality as a higher proportion of the settlements are immediately on the coast, though inland settlements are a feature throughout. While the seaward shift may have had a partial environmental cause, the greater occupational presence in the coastal areas may have been part of an incorporation into late EH and MH coastal networks driven by the movement of Aeginetan ceramics, a pattern to which the Argolid, Thessaly and Euboia could also be included.

2.13 Summary

This chapter has presented the results of a GIS analysis of coastality for settlements and burial places within the study area. Chronological developments with references to coastality have been outlined and the results of the analysis complemented though the application of GIS analysis to survey landscapes. The relationship between habitational places and the sea was dynamic, variable and appears to have fluctuated over time, influenced by socio-technological changes, networks and climatic stress. What follows are a discussion of the key points that bear out from the analysis.

There was no strong indication of a link between burial grounds and the sea, suggesting that the physical sea played little role in the performance of burial practices. The results of the analysis highlight coastal settlements as longeval and resilient places, surviving in the wake of a range of changes. The reverse is true for settlements in defensive locations, which generally last only for relatively short periods before being abandoned. Some sites appear to gain prominence in the wake of societal change, such as the introduction of the sailing boat and the increasing preference for settlements close to deep protected bays in the MBA, while others appear to be disconnected from the sea entirely. It has been highlighted that networks are a key driver of coastality rather than seascapes, though that does not negate the role of the seascape as an agent in some cases. Coastality is a useful index of human-sea interaction, however, not necessarily of seascape integration. Spatial data gives a first

glimpse at the possible significance of relationships between past people and the sea but does not give any colour or context to that relationship. The embeddedness of a place in a spatial sense is important, though a more meaningful relationship can only be accessed through an analysis of embodied action within that embedment and the metarepresentation of place. How much of a role did the sea play in structured practices, such as in food consumption, material culture, iconography and cult? These questions will be addressed in the following chapters.

3. Consuming Seascapes

3.1 Introduction

This chapter shifts the focus towards the physical relationship between humans and the sea in food consumption. Recent debates concerning food has shifted from discussion of 'diet' and 'subsistence' towards how politics, ideology and economy affected 'foodways' and 'cuisine' and a wider realisation of the interconnectivity of production, preparation, consumption and discard.[438] Food can have a range of culturally specific associations, meanings and affiliations with specific practices,[439] rendering it a part of embodied material culture.[440] This does not negate the role of food as a biological necessity, rather it asserts that the nutritional importance of food is just one aspect of its value and that the manner in which it is perceived also depends on cultural values, social structures and ideologies.[441]

The overall aim of the chapter is to investigate the prevalence of seafood consumption among Aegean communities and whether there were local or regional preferences. The concept of *chaîne opératoire,* useful in identifying various stages of human interaction with food, is utilised in order to address the material evidence in a systematic way. This approach allows us to move from the initial step of production and acquisition,[442] to processing, including storage, transport and cooking. Relevant aspects in this stage include labour organisation, public/private cooking places[443] and possible ethnic associations of processing practices.[444] The next stage is that of consumption, which can be linked to communal events, such as feasts or quotidian consumption in private. Feasting is a symbolically charged event, associated with ritual activity,[445] social power and the expression of identity, which can also be investigated in association with material culture, such as fine ware vessels and use

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[438] Twiss 2012, 357; Hamilakis 1999.
[439] Gumerman 1997; Hamilakis 1999.
[440] Bray 2003; Dietler 2007, 222.
[441] Dietler 2007, Twiss 2008.
[442] Production and acquisition was often the only aspect investigated prior to the 1980's, which can be used to identify a range of social diversity. For example in politics: Hayden 2001; gender: Hamilakis 2003; identity: O'Sullivan 2003; Sykes 2004.
[443] Halstead 1999, 80; Urem-Kotsou & Kotsakis 2007; Wright 2004.
[444] Gifford-Gonzalez & Sunseri 2007.
[445] Adams 2005, Kirch 2001, Wiessner 2001.

of space.[446] The final stage under investigation is discard, often invisible due to taphonomy, though highly relevant in the cases of ceremonial deposition.[447] In the final section, results from stable isotope analysis, with a focus on prehistoric diet, are discussed.

Several themes are relevant to an analysis of food and seascapes, though two in particular, social stratification and belief, seem to affect our interpretation of seafood consumption. In investigating social stratification, various types of data can be used, such as the deposition of material culture associated with elite food consumption, evidence for feasts and iconography and the isotopic signatures of individuals from recovered mortuary contexts.[448] Different foods can have their own sets of social meanings,[449] which may have a political dimension, and elites can gain influence by controlling the procurement and/or the consumption of specific food types, which may become associated with specific group identities.[450] Food can also have a role in belief, which can be observed in the recovery of specific food types in spaces identified as having a cult association, as either food consumed by worshippers or food offered in cult practice.[451] The practices associated with belief are no more pertinent than in the mortuary arena. The link between food and mortuary practice has been well-established,[452] and can have a key role in the sociality of the rituals.[453] Memory is a key component of mortuary practices and can incorporate performative experiences, such as those involving food and drink, which can be said to have "mnemonic power".[454] The types of food consumed, therefore, can have material agency and significance in guiding human cognition and practices in a specific direction.

Below, 'cuisine' is defined as the consumption of food in a number of contexts, ranging from quotidian practices, such as private domestic consumption and communal feasting contexts, ritually focused eating in shrines and in graveside acts, either during the primary burial or subsequent secondary practices. Context identifications follow those outlined in Chapter 1.4.4. A chronological order is maintained throughout and the chronological groupings are followed where possible. Primacy is given to contextual evidence, which better allows for an interpretation of the practices involved and the full range of

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[446] Clarke 2001, Dietler & Hayden 2001a.
[447] Isaakidou *et al.* 2002.
[448] Twiss 2012, 368.
[449] See Hamilakis (1999, 39–41) for a through deconstruction of nutritionally-focused food studies. For the role of food in emotion and feeling, see Becker 1995; Falk 1994.
[450] See Davidson (2011, 55) for the corrupting nature of fish in elite circles in Classical Athens.
[451] Mylona 2008, 91–99; Dabney *et al*. 2004; Hamilakis & Konsolaki 2004; Isaakidou *et al*. 2002.
[452] Foster 1990; Parry 1985; Hamilakis 1998, 115.
[453] Particularly perceptible in ethnographic work. See Munn 1986; Eves 1996; Battaglia 1990. See also Cann 2018 for a recent overview of anthropological research of food in mortuary contexts.
[454] See especially Hamilakis 1998, 117.

data collected can be found in the accompanying tables. Catalogue references in the text are found in Appendix 3 (*Supplementary material*). Common usage names for the marine species are used here to aid general comprehension.[455]

3.2 Foodways

3.2.1 Marine taphonomy

The Aegean Sea is home to a range of marine animals, which can be consumed by humans. The first group under study are marine vertebrates (Table 3.1). This group consists of members of the Actinopterygii class (ray-finned fishes), the marine Mammalia class (including whales and dolphins) and the Chondrichthyes class (cartilaginous fishes such as sharks and rays). Marine invertebrates (Table 3.2) include the entire Mollusca phylum (including molluscs and octopodes), as well as the Crustacea (crab) and the Echinodermata phylum (sea urchins).[456]

The remains of marine animals have been reported from prehistoric sites since the inception of Aegean archaeology, though in recent decades zooarchaeology, with a range of sub-specialisms, has greatly expanded knowledge of human-sea interaction.[457] Studies on both marine vertebrates and invertebrates have been well represented in recent times. Themes include fish processing,[458] the use of fish products in cuisine,[459] the utilisation of specific marine species,[460] regional and chronological studies,[461] and Aegean-wide analyses.[462] Holistic studies of fishing and seafood procurement have also greatly expanded knowledge and serve as the basis for subsequent investigation.[463] Studies such as these illustrate the range of research in human-sea interaction that enables the survey below.

Before addressing the evidence, however, it is necessary to summarise its reliability for the investigation of human-sea interaction. In the recovery of marine remains methodological issues include taphonomy, cultural-formation process and recovery-bias. Most marine vertebrate assemblages in the Aegean

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[455] With the exception of *Spondylus* which is better known by its scientific name.
[456] See Powell 1996, 16–35 for a detailed overview of the range of marine animals in the Aegean.
[457] As well as outside the remit where a blossoming of studies has expanded the field greatly. See Trentacoste *et al.* 2018, 207–217 for a Mediterranean-wide overview.
[458] Trentacoste *et al.* 2018, 207–217.
[459] Mylona & Grainger 2018, 219–224.
[460] For shark and rays, see Reese 1984, 188–192.
[461] For example, studies focused on Bronze Age Crete (Rose 1996, 135–144; Veropoulidou 2014, 415–421).
[462] Mylona 2003a, 193–200; 2020; Rose 1994.
[463] Rose 1994; Powell 1996.

Table 3.1. Marine vertebrate species listed in the text and in Appendix 3.

Family	*Scientific name*	*Common*	*Size**	*Habitat***
Cetecean	IND	Whale/Dolphin	Large	Epi/Mesopelagic
Caretta	IND	Tortoise	Large	Mesopelagic
Labridae	IND	Wrasses	Medium	Neritic
Lamnidae	Lamna	Porbeagle	Large	Mesopelagic
Carangidae	IND	Scad	Large	Neritic/Pelagic
Anguillidae	Anguilla	European eel	Large	Epipelagic
Sphyraenidae	Sphryaena	European barracuda	Large	Neritic
Sparidae	Diplodus	Common sea bream	Large	Neritic
Sparidae	Pagrus	Common sea bream	Large	Neritic
Sparidae	Sparus	Gilt-head bream	Large	Neritic
Sparidae	Spicara	Picarel	Medium	Neritic
Sparidae	Dentex	Common dentex	Large	Neritic
Gadidae	Micromesistius	Blue whiting	Large	Mesopelagic
Scaridae	Sparisoma	Parrot fish	Medium	Neritic
Carcharhinidae	Prionace	Blue shark	Large	Mesopelagic
Sciaenidae	Argyrosomus	Salmon-bass	Large	Neritic
Triakidae	Galeorhinus	School shark	Large	Mesopelagic
Scombridae	IND	Tuna	Large	Epipelagic
Scombridae	Thynnus	Bluefin tuna	Large	Mesopelagic
Scombridae	Euthynnus	Little tunny	Large	Epipelagic
Serranidae	IND	Perch	Small	Neritic
Serranidae	Epinephelus	Grouper	Large	Epipelagic
Mugilidae	IND	Mullets	Medium	Neritic

"IND" = specific species is indeterminate. *0.1–0.15m = small; 0.16–0.30m = medium; above 0.30m = large ** lowest depth listed.

consist of the bones of small-sized fish, highly susceptible to taphonomic loss. These skeletal elements have been proven to degrade more quickly than their mammalian and avian counterparts.[464] Another issue is soil acidity, particularly in floor contexts, which adds to degradation and taphonomic loss.[465] The elements that do survive, therefore, tend to be overrepresented archaeologically.[466] Marine invertebrate remains, by contrast, are not as susceptible to taphonomy. The degradation of calcium-carbonate based shell material is significantly accelerated through the presence of the limestone rich

[464] Jarman *et al*. (1982, 5) argued that fast degradation of fish bones was not supported empirically. Nicholson (1996), however, performed a comparative degradation experiment in which fish bones were poorly preserved in comparison to mammals or birds of a comparable size. An analysis of fish bone chemistry by Szpak (2011) confirmed Nicholson's argument. Szpak argued that fish bone is more susceptible to degradation as the bone collagen is less well mineralised and packed in comparison to other species.
[465] Lyman 1994, 422.
[466] Theodoropoulou 2014, 359. One element that tends to recur are otoliths (inner ear bone), due to their durability. See Mylona 2004, 122 for Mochlos, where nearly 70% of the assemblage are otoliths.

Table 3.2. Marine invertebrate species listed in the text and in Appendix 3.

Scientific name	*Common name*	*Habitat*
Hexaplex	Murex	Sublittoral
Patella	Limpet	Littoral (Rocky)
Phorcus	Top shell	Littoral (Rocky)
Ostrea	Oyster	Sublittoral
Arca	Ark shell	Sublittoral
Paracentrotus	Sea urchin	Littoral (Rocky)
Cerithium	Horn shell	Littoral
Charonia	Triton	Sublittoral
Spondylus	Thorny oyster	Littoral/Sublittoral
Columbella	Dove shell	Sublittoral
Euthria	Whelk	Sublittoral (Rocky)
Donax	Wedge shell	Littoral (Sandy)
Tarantinaea	Tulip shell	Sublittoral (Sandy)
Glycymeris	Dog cockle	Sublittoral (Sandy)
Octopus	Octopus	Neritic/Epipelagic
Modiolus	Mussel	Littoral (Rocky)
Gibbula	Top shell	Sublittoral (Sea grass)
Mactra	Trough shell	Sublittoral (Sandy)
Bolinus	Murex	Littoral to sublittoral (Rocky)
Monoplex	Triton	Sublittoral

acidic soils, which account for occasional taphonomic loss or erosion. In general, more robust shells will survive better in the archaeological record and will be overrepresented. For other species, only scant traces remain, such as the octopus radula, the spines of sea urchins and cuttlefish bone.

There are also cultural formation processes to take into account. For example, it cannot be assumed that the marine faunal remains found in floor deposits are the full remnants of past meals. Rather it seems that they escaped cleaning and were trampled into floor surfaces over time.[467] Larger bones and shells would have been removed, leaving only small, durable bones and shell fragments in the archaeological record. Marine faunal remains are also recovered from waste deposits, though we cannot exclude the possibility that a large proportion may also have been removed from the site. Rubbish pits are a common feature in mainland settlements, however, in some areas, most notably the islands and Crete, they are rarely found.[468] Waste faunal material may have been deposited directly back into the sea at coastal settlements and organic remains – not just limited to fish bone and mollusc remains – can serve as fertiliser and could have been deposited on fields, where they would go undetected by archaeological excavation.[469] Natural formation processes can also

[467] Mylona 2004, 122.
[468] Macheridis 2016, 71–91.
[469] See Spångberg *et al.* (2013, 234–244) on the use of mussels as fertiliser. See also Forbes (2013, 551–594) for the likelihood of survey artefacts being introduced into the landscape through manuring and the potential for animal bones to form part of the manuring process.

Table 3.3. Cretan influence on the data. Numbers 1–3 refer to both settlements and cemeteries, while 4 refers to instances (contexts) of marine faunal remains present across all sites. In "From Crete", the first number refers to how many of the sites containing marine faunal remains were from Crete, while the second number is the total amount including sites outside of Crete.

Chronology	*From Crete*	*%*
1. LN–FN sites	2/26	7.7%
2. EBA sites	6/44	13.6%
3. MBA – LB I sites	12/30	40%
4. Total contexts	353/657	53.7%

affect the contexts, such as scavenging and consumption by small mammals and birds, in which bones are likely to leave the place of discard. Conversely, some faunal material may have been brought into the site by various wild species, for example by wild birds or scavenging animals.[470]

Fish remains were rarely recorded in early excavations and are usually excluded also in modern rescue excavation reports.[471] The increase in use of wet-sieving in the last few decades has nevertheless allowed for greater recovery of small and fragile marine bones and shell elements.[472] It is clear that there is a heavy Cretan bias to the data (Table 3.3). This is not a coincidence, as not only has the island received an intense archaeological focus in terms of excavation, but the work of the Institute for Aegean Prehistory (INSTAP) has played a key role in encouraging marine faunal analysis, making the island one of the best studied areas in the Aegean in this regard. This increased focus allows us to say considerably more about the social contexts of foodways on this island in comparison to other areas of the Aegean.

There are instances where wet-sieving has been used and no fish remains were recovered at all, meaning that in some instances, taphonomic processes can be too strong to detect fish remains, or that cultural formation processes or a lack of consumption can leave us with no evidence.[473] Marine invertebrate remains, on the other hand, are generally much larger and can be recognised and recovered by hand, as well as through wet-sieving. Their distinctive texture and colour, in particular, stand out from the dark anthropogenic soils and this means they are more likely to be reported in various archaeological contexts.

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[470] See Mylona (2004, 122, 125); where 4.2% of the otoliths were polished, implying that they had first been digested by either animals or humans.

[471] Though there have been some noble instances where marine vertebrate remains have been recovered from rescue and early excavations. See for example at Raphina (Theocharis 1955, 149), Thermi (Lamb 1936, 216) and Tylissos (Hadjidakis 1912, 232–233).

[472] The rate of recovery can be greatly affected by sieving. See Theodoropoulou 2007, 150–156.

[473] Theodoropoulou 2012, 96.

This overview serves to highlight that marine vertebrate assemblages are problematic. At sites where we do encounter marine faunal remains, we are clearly not getting the complete picture of seafood consumption. Though this is true for all archaeological endeavours, it is particularly acute in the study of marine resources, which tend to be small, fragile and susceptible to loss. The slow recognition of the significance (or even presence) of small fish bones means there are several important sites where any forms of data are lacking. We therefore cannot suggest that sites where marine faunal remains were not recovered did never have any.

Another problem is the sketchy reporting of marine faunal remains in reports. Descriptions of contexts often mention the presence of marine shells, though additional information is not provided. In these instances, it is difficult to determine whether these should be treated as the remains of food consumption or worked objects, as species identifications are regularly lacking. Many publications do not present such data, or when they are presented, they are relegated to a list of species recovered without the integration of archaeological contexts.[474] Ultimately what we can say is that marine faunal remains were present in some instances and that their consumption is undoubtedly greater than the material remains suggest. This state-of-play is a particular hindrance to the regional study of marine vertebrate consumption and we must take the broadest scope possible to include a range of contexts and time periods.

A series of assumptions are made to counter some of the negative effects of taphonomy and cultural formation processes. It is assumed that we are only getting a fraction of the marine vertebrates and that absence of evidence is not evidence of absence. The presence of otoliths are taken as evidence that fish were transported to their place of consumption before decapitation. The presence of stray, solitary elements, such as teeth from various species of shark or cetacean, are not taken as evidence that the animal was transported to the settlement for butchering, as these elements could have been removed from washed up carcasses on the beach. Where there are multiple skeletal elements of such large marine vertebrates, however, it is likely that they represent food remains.

Moving on to marine invertebrates, it is safe to assume that they were consumed when found alongside animal bones in rubbish pits or floor deposits. This includes also worked examples. Water-worn or gastropod-bored shells, however, are assumed to be manuports, as they were collected dead. What follows is a discussion of the evidence. The alphanumerical values in bold next to the evidence refers to the corresponding table in Appendix 3, while the number is the static site number found in Appendix 1.

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[474] This has begun to change in recent times, see examples from Reese (1987; 2006; 2009; 2013; 2015), Rose (1994), Veropoulidou (2014; 2019) and Mylona (2003; 2014; 2017; 2019).

3.2.2 Acquisition: seafood procurement

Fishing involved several different practices of which vanishingly little of can be detected in the archaeological record.[475] Fishing on a line with a hook is one method, while nets and traps are others.[476] Most nets and traps would have been made of perishable material and would not survive in the archaeological record, though hooks can recovered if they were not recycled prior to deposition. Fishing tackle, such as weights and other paraphernalia are impossible to identify unless found alongside fishing kit.[477] It is not clear what the preferred method was for collecting marine invertebrates, though this probably varied according to the different habitats of the creatures. It does seem likely that they were collected by hand from the littoral zone although for some species, wading and diving would have been required.[478] Unfortunately, these practices leave no archaeological traces and therefore can only be the subject of speculation.

Fishing hooks are notably absent from LN Saliagos, though the procurement of seafood may have been conducted using nets and harpoons (Appendix 3:A).[479] Holed limpets from FN Kephala, on the other hand, have been interpreted as evidence for the use of marine molluscs as fishing bait.[480] However, it is more likely that the meat of the mollusc, rather than its shell would have been used as bait, so this interpretation is not certain.[481] A FN fishing hook is known from Petromagoula (**A209**). EBA fishing hooks are known from several settlements,[482] such as EB II Kifissia (**A112**) in Attica, Vathy on Astypalaia (**A287**), Thermi on Lesbos (**A269**), Emporio on Chios (**A57**), Poliochni on Lemnos (**A219**) and the Heraion on Samos (**A75**). MBA fishing hooks are rare, though a solitary example is known from Malia (**A142**). Additional examples were found at LC I Akrotiri (**A19**), with five examples recovered from the "Room with the fresco of the lilies" in Sector Δ2, which may have been from a scavenger context before the final volcanic eruption.[483] At the same site, a unique find of a fishing net was also preserved in the pumice (**A19.6**).[484] Close to Akrotiri, a remarkable cache of twenty hooks found at Megalochori,

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[475] Chapter 5 will treat the iconographic evidence for fishing.
[476] See Powell 1996 for an extensive treatment of fishing, including methods, reconstruction and archaeological, ethnographic and iconographic evidence.
[477] Desse & Desse-Berset 1989, 230.
[478] Mylona 2014, 6. For example, *Spondylus* attaches itself to a hard substratum and traces of rock adhering to the shells at Dimini show they were collected *in situ*. See also Tsuneki 1989, 14.
[479] Evans & Renfrew 1968, 79.
[480] Coleman 1977, 132.
[481] My thanks to D. Reese for this information.
[482] Including also examples further inland outside the study area, such as inland at EH II Eutresis (Goldman 1931, 218, fig. 286.6; Caskey & Caskey 1960, 156) and EBA Lithares (Powell 1996, 149, no. 29).
[483] Marinatos 1969, 51, fig. 38; Marinatos, 1972, pl. 78; Powell 1996, 139–141, nos. 1–6.
[484] Moulherat *et al.* 2004, 15–19.

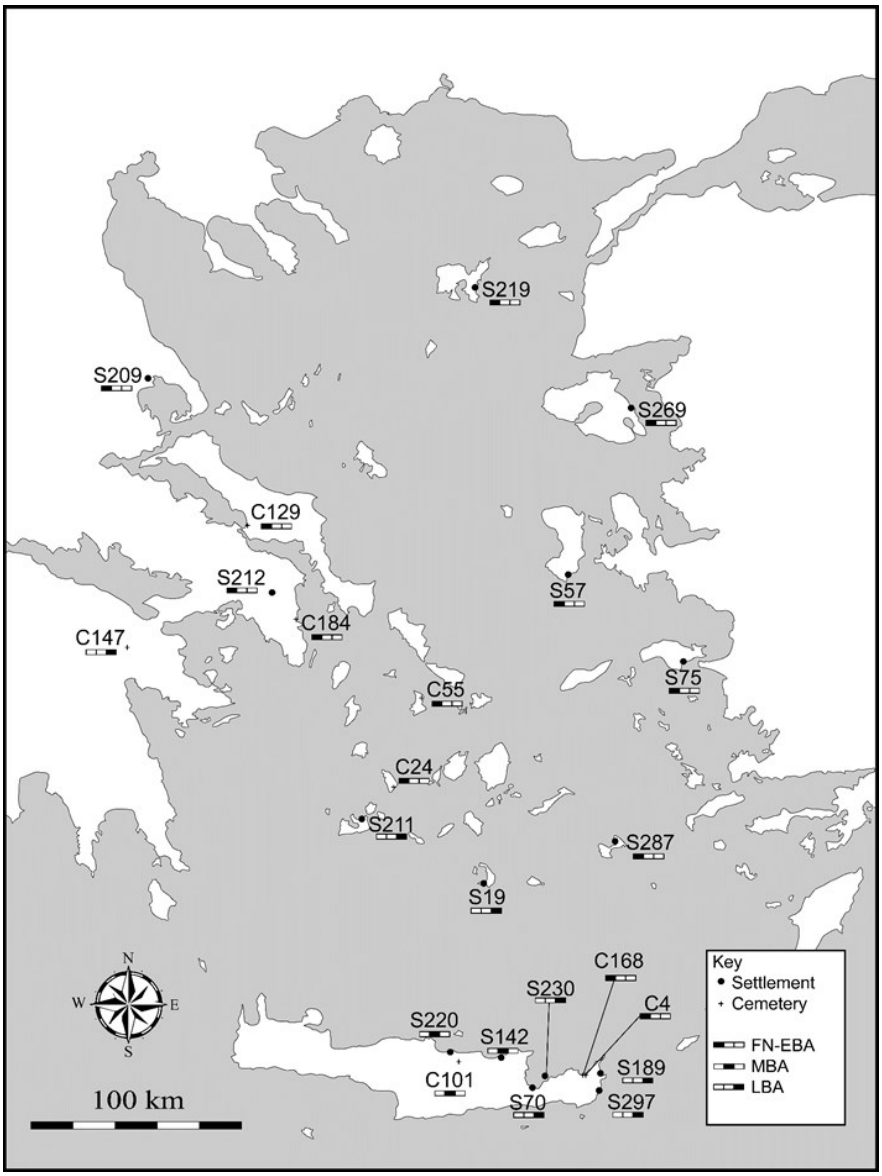

Figure 3.1. Distribution of fishing apparatus evidence. "S" numbers refer to settlements, while "C" numbers refer to cemeteries. The numbers can be matched to those in Table 3.4 and Appsteaendix 3:A–B.

bundled inside a pot (**A19**.**7**).[485] Several settlements have examples broadly dated to the LBA,[486] such as Gournia (**A70**), Zakros (**A297**), Palaikastro

[485] Powell 1996, 149; nos. 31–32.
[486] Examples are known outside the study area on Crete, such as from MM–LM Kommos (Powell 1996, 147, nos. 20–25) and EM Lebena (Branigan 1974, 173)

Table 3.4. Fishing apparatus evidence by chronological order. Abbreviations: Cu+ = Copper alloy; Br = Bronze ; Ar = Silver; Sn = Tin. * denotes possibility that the material postdates the study. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Type*	*Material*	*Chronology*
S209. Petromagoula, Thessaly	1137	Hook	Cu+	FN
S57. Emporio, Chios	1556	Hook	Cu+	EB I
C168. Petras Kephala, Crete	979	Hook	Cu+	EM I–MM II
S219. Poliochni, Lemnos	776	Hook	Cu+	EB I–II
C4. Agia Photia, Crete	667	Hook	Cu+	EM I–II
S269. Thermi, Lesbos	631	Hook	Cu+	EB IIA
C129. Manika, Euboia	837	Hook	Cu+	EH II
S112. Kifissia, Attica	18483	Hook	Br	EH II
C184. Raphina, Attica	840	Hook	Cu+	EH II
C24. Akrotiraki, Siphnos	4150	Hook	Cu+	EC II
C55. Chalandriani, Syros	3836	Hook	Cu+	EC II
S75. Heraion, Samos	476	Hook	Sn + Cu+	EB II–III
S287. Vathi, Astypalaia	464	Hook	Cu+	EBA–LBA*
S142. Malia, Crete	803	Hook	Cu+	MBA
C101. Knossos Mavrospelio, Crete	9344	Hook	Br	MM II–III
S220. Poros-Katsambas, Crete	1635	Hook	Cu+	MM III
C147. Mycenae GC B, Argolid	11965	Hook	Ar + Cu+	MH III–LH I
S19. Akrotiri, Thera	1966	Hook	Cu+	LC IA
S19. Akrotiri, Thera	1966	Net	Textile	LC IA
S189. Palaikastro, Crete	415	Hook	Cu+	LM I–II*
S70. Gournia, Crete	1653	Hook	Cu+	LBA*
S211. Phylakopi, Melos	476	Hook	Cu+	LBA*
S230. Pseira, Crete	801	Hook	Cu+	LBA*
S297. Zakros, Crete	631	Hook	Cu+	LBA*

(**A189**), Poros-Katsambas (**A220**) and Pseira (**A230**) on Crete, with a contemporary example from Phylakopi (**A211**) on Melos.

Fishing hooks are occasionally also found in tombs (Appendix 3:B), such as the EM I–II cemetery at Agia Photia (**B4**) and EM II Petras on Crete (**B168**),[487] Akrotiraki on Siphnos (**B24**),[488] and two hooks inside the EC IIA Tomb 453 at Chalandiani on Syros (**B55**). Single hooks were also found in

[487] Several hooks were recovered though it is not possible to determine whether they are in association with one or several burials.
[488] The hook came from a pit east of Tomb 1, perhaps part of a removed tomb assemblage, or dumped during modern looting (*ArchDelt* 56–59: B6, 137).

tombs at EH II Manika (**B129**) and Raphina (**B184**). Later examples are rare but include an example from Knossos Mavrospelio on Crete (**B101**), and at least three from Grave Circle B at Mycenae (**B147**).[489] In addition, a unique silver hook was recovered from Grave K (**B147.3**) in Grave Circle A.[490]

Fishing hooks are more prevalent in the EBA and LBA (Table 3.4). The dearth of known MBA examples may be a reflection of lower fishing activity, though it must be borne in mind that many settlements are continuously occupied in the LBA, which could have led to recycling of metal or context loss. At this stage, it is only possible to suggest that fishing was practiced from the shoreline and that marine molluscs would have been harvested mostly from intertidal waters, though occasionally also from deeper waters. The remarkable discovery of a net at Akrotiri show that fish were caught this way. Spears or harpoons could have been used to hunt fish in the shallows, while we cannot exclude the use of wooden fish traps. Deeper analysis of the species of marine fauna consumed follows in Chapter 3.2.4, where it will be possible to infer more about the range of practices involved in the acquisition of marine fauna as food.

There is a concentration of fishing hooks in the southern Aegean (Fig. 3.1) (56%). It is unclear if this is a result of more intense investigations of these areas, particularly on Crete, or if fishing with a line was a more commonly employed practice here. Hooks deposited in tombs suggest that they were prized items and markers of identity. Examples from Kifissia, Mycenae and Knossos Mavrospelio show that not all hooks were found at coastal settlements.

The social status implications of fishing in the ancient world has been a matter for debate, ranging from either a poor person's only means of subsistence, to an elite activity.[491] Fishing hooks in some tombs of Grave Circle B at Mycenae, including a silver example, may indicate that fishing could represent some kind of command or control over the sea as an elite past time, another form of hunting and domination of the wild. This fits well with the isotopic evidence (Chapter 3.3) and the inclusion of marine molluscs in some tombs at Mycenae (Chapter 3.2.6).

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[489] Grave K, unfortunately was in a deteriorated state, with no other linked items (i.e. hunting equipment) found in the grave, save for pottery (Dietz 1991, 120). Grave N contained a range of metal goods, including spears and daggers, while Grave Y contained a number of small bronze implements, such as pins (Dietz 1991, 124–127, 131). Excluded are the cone shells recovered from Grave Circle B, of which a small number (1.5%) were found to have contained lead. These could have served a number of functions, either as weights or toys, though another function could be potentially as fishing weights, though are dated to LB III. See Reese 1983, 356–357.

[490] Powell 1996 150, nos. 34–36.

[491] See Mylona 2008. Ancient Greek textual references range from fishing as a sport for the elite (Plut. *Ant*. 29.5 on Antony and Cleopatra), to a poor man's occupation (Arist. *Pol*. 1291b). See also Kron (2014, 192–202), for the importance of fishing in Ancient Greece and Rome.

3.2.3 Processing, storage and cooking

Evidence of food preparation is preciously rare (Appendix 3:C). Fish vertebrae in a tripod-footed barrel-shaped jar at MM III Knossos (**C114**) may be evidence of storage, but could also be from a cooking context. The unique preservation circumstances at Akrotiri offer additional examples. In the West House (**C19**.**1**), seabream remains along with cereals were found inside a *pithos*, while elsewhere at the site a number of fish varieties were found together with cereals in another *pithos* (**C19**.**2**). It has been convincingly argued that the latter example represents the fermentation of food into a fish paste,[492] while the same could also be true for the former. In another context, several articulated large dentex fish with their vertebal bones intact indicate that they were likely salted and stored for future consumption.[493] The final and most spectacular instance is that of a tuna fish steak recovered from inside a baking tray with traces of fire.[494] This was interpreted as evidence of the cooking (either frying or baking) of a fish cut, presumably interrupted by the volcanic cataclysm that destroyed the settlement. Sporadically some marine shells bear traces of burning, suggesting that they were roasted and presumably boiled in their shells. A range of preparation methods of fish can be observed through faunal analysis including scaling, gutting, beheading and butchering into chunks.[495]

In a fashion similar to the scant evidence for storage and cooking, the evidence for salt as a fish preservative is difficult to address. Such a practice is unlikely to be visible in the archaeological record. No salt producing installations are known in the study area and it is assumed, therefore, that salt was gathered from naturally occurring processes on rocky shores. There do not appear to be references to salt in the later Linear B tablets either.[496] In terms of physical evidence, the fishes from Akrotiri mentioned above were likely salted or smoked. A rare additional example comes from the area around Neopalatial Zakros, where considerable quantities of sea salt were recovered from pots apparently used to preserve organic materials.[497] The evidence is too meagre to draw any meaningful conclusions about the use of salt, suffice to say that it could have been exploited widely although we would not find evidence for it.

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[492] Mylona 2014, 8–9.
[493] Mylona 2014, 9.
[494] Birtacha *et al.* 2008, 356, 369–370.
[495] Theodoropoulou 2011, 271–282.
[496] Tartaron 2014, 88. Though there are hints to "salty water", in a Linear A text from Zakros, see Janke & Solca, N.D https://www.academia.edu/36459466/Linear_A_tablet_ZA_8_another_Linear_A_tablet_apparently_largely_inscribed_in_Mycenaean-derived_Greek.doc [accessed 27/04/2020]
[497] Kopaka & Chaniotakis 2003; Haysom 2011, 142–143.

3.2.4 Seafood and society: cuisine in quotidian contexts

There is much more evidence for cuisine from quotidian contexts (Appendix 3:D). As a result of wet-sieving and water flotation, a range of marine remains were noted at LN Saliagos (**D242**).[498] Tunny accounted for 97% of the marine vertebrate assemblage with no less than 45 specimens confined to a single refuse pit (**D242**.**3**).[499] Such a quantity of this epipelagic fish in in a single context is strong evidence for short-term gluts accumulated over successive episodes. It is likely that fishing was seasonal and tunny were likely hunted early in the year, perhaps during breeding season when they enter the shallows.[500] A wide variety of marine invertebrates were also consumed.[501] Out of the molluscs recovered from refuse Pit A – the same pit with the tunny – 96% were limpets, top shells and carpet shells, an indication of eating preferences, while a small polished marble figurine and most of a curvilinear decorated fruit-stand was also found, hinting that the pit may have had a more complex meaning.[502]

Most of the evidence from Saliagos pertains to cuisine contexts, though elsewhere at the site a series of shell heaps were found, consisting of layers of cockles, with no animal or fish bone, which may represent structured deposition events.[503] Different marine remains were also recovered from Ftelia on Mykonos (**D65**), though marine exploitation there does not appear to have been as intensive as at Saliagos, suggesting that subsistence strategies were not uniform in the LN Saliagos culture.

At LN Dimini (**D51**) in Thessaly, at the time much closer to the coast, marine invertebrates were found across the site, though with concentrations in specific areas.[504] Some molluscs seem to have been reserved for food, such as cockles,[505] while others such as *Spondylus* were mostly worked,[506] though we

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[498] The Saliagos excavations were among the first include wet-sieving/flotation techniques, Reese *pers. comm.*

[499] Renfrew *et al*. 1968, 118–121.

[500] Mylona *pers. comm.*

[501] Karali 1999, 15.

[502] Shackleton 1968, 123; Evans & Renfrew 1968, 14, 44.

[503] Evans & Renfrew 1968, 80. These features were lenses of shell material, each heap probably the refuse of singular or short-term events. Taken alongside the fish bone evidence, the shell heaps suggest a strong trend towards considerable events of food consumption, sometimes over a short period, other times over longer time spans. Such events could be interpreted as feasts, perhaps with a communal or ritual character.

[504] For example in Structure 18 and in the areas between houses. In each of these contexts, a variety of shells were recovered, many worked, but many also unworked, indicating cuisine and production practices (Tsuneki 1989, 5).

[505] With 4372 unworked individuals, in comparison to 211 worked (Tsuneki 1989, 5).

[506] Where 243 examples were worked, in comparison to 161 unworked (Tsuneki 1989, 5).

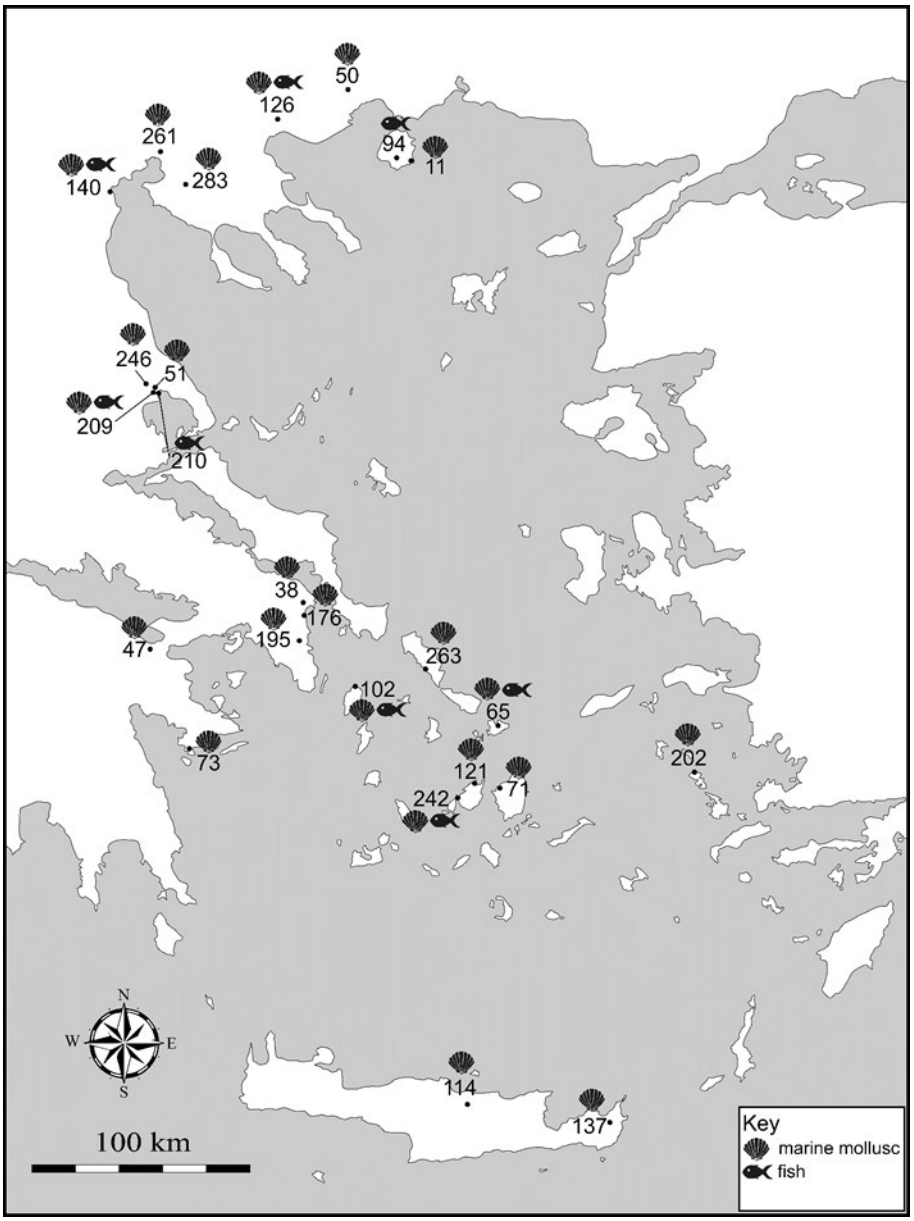

Figure 3.2. Distribution of seafood evidence from Neolithic settlement contexts in the study area. The numbers can be matched to those in Table 3.5 and Appendix 3:D.

cannot discount the possibility that some were consumed first.[507] The concentration of shell material at the site as a whole gives a good indication that the inhabitants were exploiting marine animals both for food and other purposes

[507] Tsuneki 1989, fig. 4–5.

(Chapter 4). Other secure LN cuisine contexts with marine invertebrate remains include Stavroupoli (**D261**), Makriyalos (**D140**), Sesklo (**D246**), Volos (**D290**), Vasiliki-Kyparissia (**D283**) and Corinth (**D47**) (Fig. 3.2). At Kryoneri (**D126**)[508] shells were even found inside a bowl, perhaps an uneaten meal.[509]

Considerable quantities of marine mollusc were also reported from LN levels below the Central and West Courts at Knossos (**D114**.**1**–**2**), 5km inland (LCP:9555) from the coast.[510] Even at Dikili Tash (**D50**) in Macedonia, c.15km from the sea (LCP:22193), a wide range of marine invertebrates have been uncovered from LN layers, of which most were cockles.[511] Their presence indicates that marine invertebrates were desirable and its inhabitants may have expended considerable energy in gaining access to these resources, either directly or through other communities. The opposite situation is observable at some sites, however. Comparatively few marine remains were reported from coastal Palioskala (**D194**) and Mikrothives (**D163**), suggesting that marine food sources did not play a large role in the local diet there, despite their coastal proximity.[512]

Marine remains from the FN are rare and consist mostly of invertebrates (Table 3.5). A fish vertebrae was recovered from Kephala on Kea (**D102**).[513] Marine molluscs were more common, with a specific concentration of limpets in Area G (**D102**.**1**), though there is a significant reduction compared to the level of exploitation seen at LN Saliagos.[514] On the Greek mainland, marine molluscs in cuisine contexts have been reported from Nea Makri (**D176**), Boriza Marathon (**D38**) and Pallini (**D195**) in Attica, as well as from Halieis (**D73**) in the Argolid. At coastal Pevkakia in Thessaly (**D210**) a range of fish were reported, including bluefin tuna, grouper, gilt-head bream and little tunny.[515] The earliest example of sea urchin spines in the study area was reported from nearby Petromagoula (**D208**). On Crete, marine mollusc were recovered at Knossos (**D114**.**4**–**7**) and Magasa Vigli (**D137**), both inland,[516] and

[508] Fish and marine mollusc remains were more numerous than at nearby settlements, leading Malamidou (2016, 307) to argue that the community spent considerably more time fishing than their contemporary neighbours.
[509] Malamidou 2016, fig. 32–33.
[510] Evans 1928, 10; Shackleton 1968, 264–266; Reese 1987, 207; Reese *pers. comm.*
[511] Karali-Yannacopoulos 1992, 153–157.
[512] Palaioskala: Touphexis 2016, 361–380; Mikrothives: Adrymi-Sismani 2016, 395–416.
[513] Though wet-sieving was not a part of the excavation strategy at Kephala. Reese *pers. comm*.
[514] In this fill, interpreted as an accumulation of eroded waste from settlement contexts (Karali 1999, 15; Coleman 1977, 129), animal bones were common and 90 limpets were recovered.
[515] Rose 1987, 317–342. Some also date to MBA and LBA. The marine molluscs have not been published.
[516] Dawkins *et al.* 1904–5, 266.

Table 3.5. Seafood evidence from Neolithic settlements. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. * LCP value to the Aegean sea.

Site	*LCP value*	*Fish*	*Mollusc*	*Chronology*
S47. Corinth, Corinthia	19522*		X	LN
S50. Dikili Tash, Macedonia	22193		X	LN
S51. Dimini, Thessaly	267		X	LN
S65. Ftelia, Mykonos	398	X	X	LN
S121. Koukounaries, Paros	2061		X	LN
S126. Kryoneri, Macedonia	3084	X	X	LN
S140. Makriyalos, Thessaly	4351	X	X	LN
S242. Saliagos, Antiparos	645	X	X	LN
S246. Sesklo, Thessaly	9360		X	LN
S261. Stavroupoli, Macedonia	2737		X	LN
S283. Vasilika-Kyparissi, Macedonia	5219		X	LN
S290. Volos, Thessaly	277		X	LN
S71. Grotta, Naxos	620		X	LN–FN
S114. Knossos, Crete	9555		X	LN–FN
S194. Palioskala, Thasos	21322	X		LN–FN
S38. Boriza Marathon, Attica	7805		X	LN–EH I
S11. Agios Ioannis, Thasos	651		X	FN
S73. Halieis, Argolid	332		X	FN
S102. Kephala, Kea	552	X	X	FN
S137. Magasa Vigli, Crete	12371		X	FN
S176. Nea Makri, Attica	668		X	FN
S195. Pallini, Attica	16780		X	FN
S202. Partheni, Leros	652		X	FN
S210. Pevkakia, Thessaly	165	X		FN
S263. Strofilas, Andros	796		X	FN
S209. Petromagoula, Thessaly	1137	X	X	FN

also at coastal Petras Kephala (**D209**).[517] Elsewhere, different marine molluscs were reported at Grotta on Naxos (**D71**), Partheni on Leros (**D202**), Agios Ioannis (**D11**) on Thasos and from Strofilas (**D263**) on Andros. All these settlements were in close proximity to the coast and their inhabitants exploiting the resource in the FN.

[517] At Petras Kepahala, 78% of marine invertebrate remains were limpets, in accordance with the rocky coast nearby. Fish remains, however, were absent despite the use of wet-sieving. It has been suggested, however, that soil acidity there may have destroyed remains (Theodoropoulou 2012, 89–103). See Lyman 1994 for soil acidity.

Chronologically secure EB I contexts are rare and marine remains therefore underreported (Table 3.5). On the mainland, mollusc remains were recovered at Tavros (**D267**) in Attica, while different molluscs were reported from the now submerged Labayanna (**D127**) in Argolid, marking the beginning of an intensive exploitation of marine molluscs at the settlement, for both seafood and production purposes.[518] Elsewhere considerable quantities of marine molluscs were recovered at Knossos (**D114.8**), Kephali Aphroditis (**D104**) and Petras Kephala (**D208**) on Crete, while scant remains were also noted at Emporio (**D57**) on Chios.

More marine material derive from EB I/II–IIA settlements. Malacological remains were recovered from numerous places in Attica, including Eleusis (**D56**), Palaia Kokkina (**D185**), Marathon Kato Souli (**D147**), Rouph (**D240**),[519] Askitario (**D29**) and Keratea Zapani (**D108**). At Raphina (**D236**), House A contained a large quantity of animal bones and shells indicating a function as either a food processing or consumption area.[520] Also in Attica, fish and marine molluscs were noted at Agios Kosmas (**D12**).[521] Moving on to Euboia, marine invertebrates were noted in several domestic areas at Manika (**D144**), suggesting a widespread exploitation of the sea for cuisine. They were also reported from Megali Lakka-Theologos (**D153**). Elsewhere, marine mollusc remains were recovered from settlements in the Argolid, such Agia Marina on Spetses (**D3**), Kephalari Magoula (**D103**) and Labayanna (**D127**). At Lerna (**D133**) they were present in EB IIA fills in a range of locations, though not in quantities comparable to those in succeeding EB IIB–III layers. Fish were recovered in minute quantities at then coastal Tiryns (**D274**), making up only 0.1% of identified bone remains but including a hammerhead shark.[522]

Due to earlier layers overbuilt by later palatial constructions, EB I/II–IIA contexts on Crete are rarer than on the mainland. Marine remains are noted from Gournia (**D70**), Chania (**D44**) and beneath the West and Central Court

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[518] Reese *pers. comm.*

[519] In addition, malacological remains were recovered from inside buildings (Spaces 4B and 3B), where they were found in association with animal bones, potsherds and layers of burned soil, probably the traces of a destruction event. In Space 3B, however, a hearth was uncovered, with which the food detritus may have been in association with when the site was destroyed (*ArchDelt 35* (1980): A, 177).

[520] Malacological material was noted in a wide range of contexts, from refuse pits and houses (Theocharis 1955, 139).

[521] Mylonas 1959, 28, 32, 35, 38, 191.

[522] von den Drietsch 1990, 118; von den Driesch & Boessneck 1990, 89; Rose 1994, 371–373.

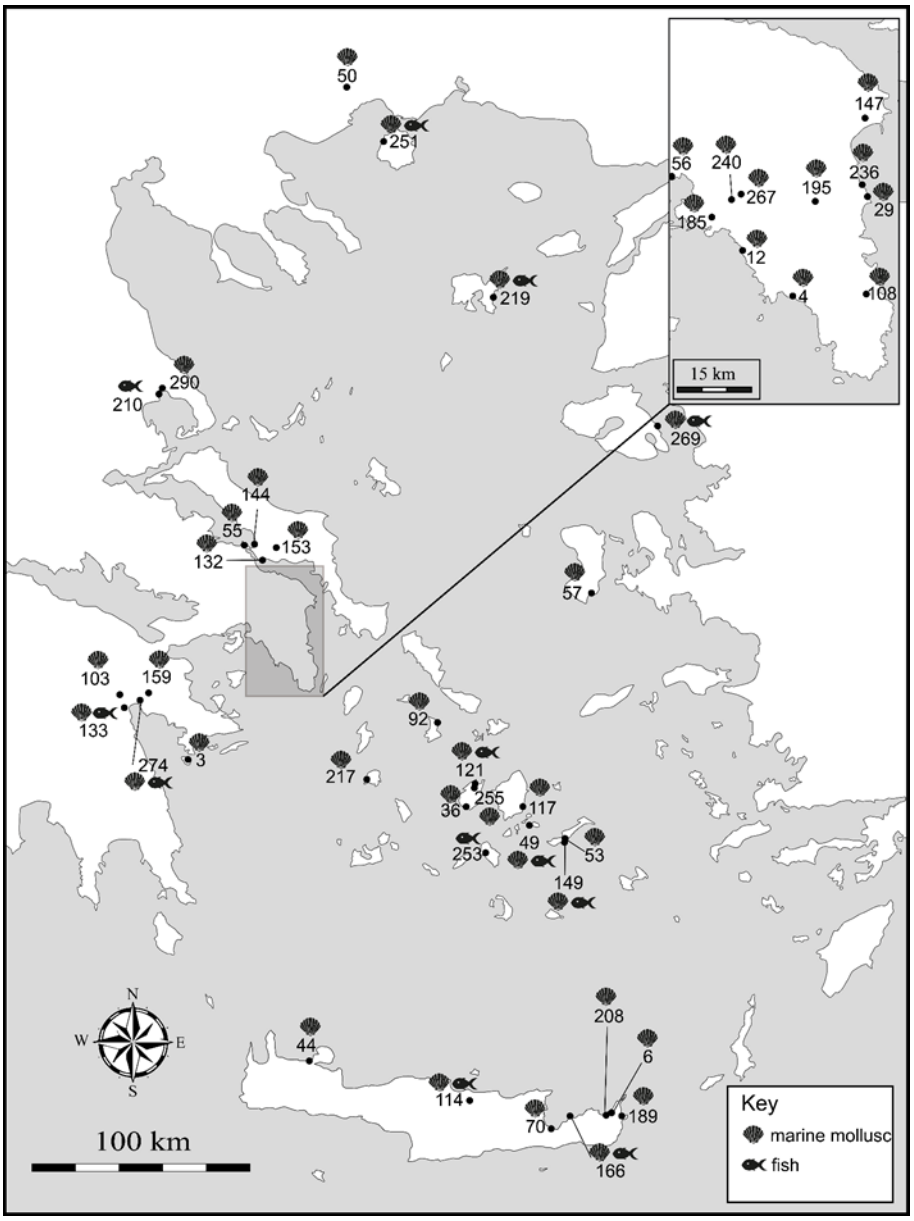

Figure 3.3. Distribution of seafood evidence from EBA settlement contexts in the study area. The numbers can be matched to those in Table 3.6 and Appendix 3:D.

at Knossos (**D114.11–14**). Both marine molluscs and scant traces of fish remains were reported from Mochlos (**D166**). In the north and eastern Aegean, marine molluscs are found at Thermi (**D269**) on Lesbos, Poliochni (**D219**) on Lemnos and Limenaria (**D135**) on Thasos. At Skala Sotiros (**D251**), also on Thasos, fish remains accounted for around 3.5% of the total faunal assemblage

between EB II–III.[523] In the Cyclades, malacological material was recovered from Skarkos (**D253**) on Ios,[524] Koukounaries (**D121**) on Paros, Dokathismata on Amorgos (**D53**),[525] Korfi t'Aroniou (**D117**) and Avyssos (**D36**) on Paros and Plakalona (**D217**) on Seriphos. Similar material has been reported from EB IIA contexts at recently excavated Dhaskalio (**D49**) on Keros, though the evidence is greater in the ensuing EB IIB (Phase C) and thus discussed in more detail below. It is instead at the fully published site at Markiani (**D149**) on Amorgos that we have the best EB II evidence from the Cyclades. There is a drastic increase in fish consumption at the site in EC IIA. Fish accounts for 16% of the faunal assemblage in EC IIA, but only 0.8% in EC I/II and 0.6% in EC IIB.[526] The discrepancy is remarkable and unlikely to be an accident of methodology or taphonomy and not associated with destruction fills. Clearly during this period, there was a more intensive focus on fish consumption in comparison to periods before and afterwards. From the marine mollusc assemblage, limpets predominate and are recovered from all EBA layers.[527]

Less evidence for marine food consumption is available for the EB IIB period, though this is due, at least in part, to a general lack of contexts. On the mainland, malacological remains were reported from Marathon Kato Souli (**D147**), Rouph (**D240**) and Agios Kosmas (**D12**) in Attica and Eretria Magoula (**D60**) on Euboia. Considerable quantities of marine remains were found in EH IIB contexts around the House of Tiles at Lerna (**D133**.**16–17**), including marine molluscs and fish. They may have formed part of food consumed during redistribution events linked to the monumental building.[528] Notable also, is the nearby recovery of several blue shark vertebrae from the Central fortification area. They could reflect game hunting, presumably harpooned, as at a maximum of 110 kilos, they represent a significant catch.[529]

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[523] Which was down from 5% in EB I. In all periods fish played only supplementary role in local diet (Yannouli 1994, 407; Trantalidou 2006, table 9.9).
[524] Fish and marine molluscs were recovered, though in small quantities and utilisation of marine food sources is argued to have only been a miniscule part of the local diet, 1.63% of the entire faunal assemblage pertaining to fish. (Trantalidou 2006, table 9.9; Marthari 1997, 362–382).
[525] Shells were reported in the vicinity around the settlement (Tsountas 1898, 138, 154, 165.), which are taken to indicate their use as a food source.
[526] Trantalidiou 2006, 228, table 9.9.
[527] Karali-Giannakopoulou 2006, 243.
[528] Pullen 2008, 34–35.
[529] Rose 1994, 301; Gejvall 1969, 50 as *Carcharhinus*; Wiencke 2000, 124. The presence of several vertebral elements inside the settlement suggests that the animal was transported to the settlement, butchered and consumed. See further: https://web.archive.org/web/20130421010358/http://www.irelandswildlife.com/2011/07/blue-shark-prionace-glauca/# [accessed 05/03/2020].

Table 3.6. Seafood evidence from EBA settlements. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Fish*	*Mollusc*	*Chronology*
S208. Petras-Kephala, Crete	979		X	FN–EM I
S57. Emporio, Chios	1556		X	EB I
S267. Tavros, Attica	2504		X	EH I
S4. Agia Marina-Varkizan, Attica	186		X	EH I–II
S68. Gerakas, Attica	19014		X	EH I–II
S36. Avyssos, Paros	1159		X	EC I–II
S121. Koukounaries, Paros	2061	X	X	EC I–IIA
S114. Knossos, Crete	9555	X	X	EM I–II
S149. Markiani, Amorgos	4156	X	X	EC I–IIB
S269. Thermi, Lesbos	631	X	X	EB I–IIB
S44. Chania, Crete	1046		X	EM I–III
S219. Poliochni, Lemnos	776	X	X	EB I–III
S166. Mochlos, Crete	462	X	X	EM IB–III
S53. Dokathismata, Amorgos	12253		X	EC II
S236. Raphina, Attica	840		X	EH IIA
S103. Kephalari Magoula, Argolid	1030		X	EH II
S108. Keratea Zapani, Attica	14213		X	EH II
S56. Eleusis, Attica	1014		X	EH II
S29. Askitario, Attica	891		X	EH II
S185. Palaia Kokkinia, Attica	6575		X	EH II
S82. Kalogerovrysi, Euboia	18431		X	EH II
S144. Manika, Euboia	837		X	EH II
S153. Megali Lakka Theologos, Euboia	20457		X	EH II
S3. Agia Marina, Spetses	895		X	EH II
S117. Korfi T'Aroniou, Naxos	6955		X	EC II
S255. Skarkos, Ios	1775	X		EC II
S217. Plakalona, Seriphos	4608		X	EC II
S255. Sklavouna, Paros	1826		X	EC IIA
S240. Rouph, Attica	2434		X	EH IIA–B
S92. Kastri-Chalandriani, Syros	6534		X	EC IIB
S12. Agios Kosmas, Attica	769		X	EH IIA–III
S49. Dhaskalio-Kavos, Keros	1423	X	X	EC II–III
S70. Gournia, Crete	1653		X	EM II–III
S189. Palaikastro, Crete	415		X	EM II–III
S133. Lerna, Argolid	552	X	X	EH II–III

Table 3.6. Continued

Site	*LCP value*	*Fish*	*Mollusc*	*Chronology*
S147. Kato Souli, Attica	2813		X	EH II–III
S274. Tiryns, Argolid	323	X	X	EH II–III
S132. Lefkandi, Euboia	627		X	EH III
S251. Skala Sotiros, Thasos	588	X	X	EBA
S55. Drosia, Boiotia	1012		X	EBA
S195. Pallini, Attica	16780		X	EBA
S50. Dikili Tash, Macedonia	22193		X	EBA
S290. Volos, Thessaly	277		X	EBA
S210. Pevkakia, Thessaly	165	X		EBA
S159. Midea, Argolid	10696		X	EBA

Their location close to the House of Tiles is perhaps not coincidental and may represent a display of domination over the wild in special hunting games, bestowing prestige to the hunter/fisher.

On the islands, the evidence is also not very substantial. Marine molluscs are reported from Kastri-Chalandriani (**D92**) on Syros, Poliochni (**D219**) on Lemnos and Palaikastro (**D189**) on Crete. At Dhaskalio (**D49**) on Keros, the largest amount and breadth of recorded marine invertebrate species were from Phase C levels.[530] The wide variety of species represented indicate an indiscriminate approach to the selection of marine food and hint that seafood played a more significant role at the site in comparison with other contemporary settlements.

Some additional instances of marine remains are simply reported as coming from unspecified EBA contexts. Instances include Tiryns (**D274**), Midea (**D159**), Raphina (**D236**), Pallini (**D195**), Drosia (**D55**), Volos (**D290**) and Dikili Tash (**D50**) on the mainland. At Pevkakia (**D210**), fish remains were present in EBA layers but, while there is a greater variety, these remains are fewer in quantity than in the Neolithic phases.[531] Similar evidence is reported from Chania (**D44**) and Agia Photia (**D6**) on Crete, Koukounaries (**D121**) in the Cyclades, Thermi (**D269**) on Lesbos and Skala Sotiros (**D251**) on Thasos.

MB I contexts are not common, though there are several sites where an EB III–MB I transitional phase has been published. The EB III–MB I transitional phase is thus treated as part of MB I to better aid comprehension and to distinguish from the earlier EB III. Marine remains have been recovered from a wealth of contexts at Lerna (**D133**), from IV to IV–V transitional contexts,

[530] Karali 2013, 443–450.

[531] In fact, for the entire EBA period, fish bones accounted for only 0.5% of the animal bone assemblage (Amberger 1979, 16–17; Trantalidou 2006, table 9.9).

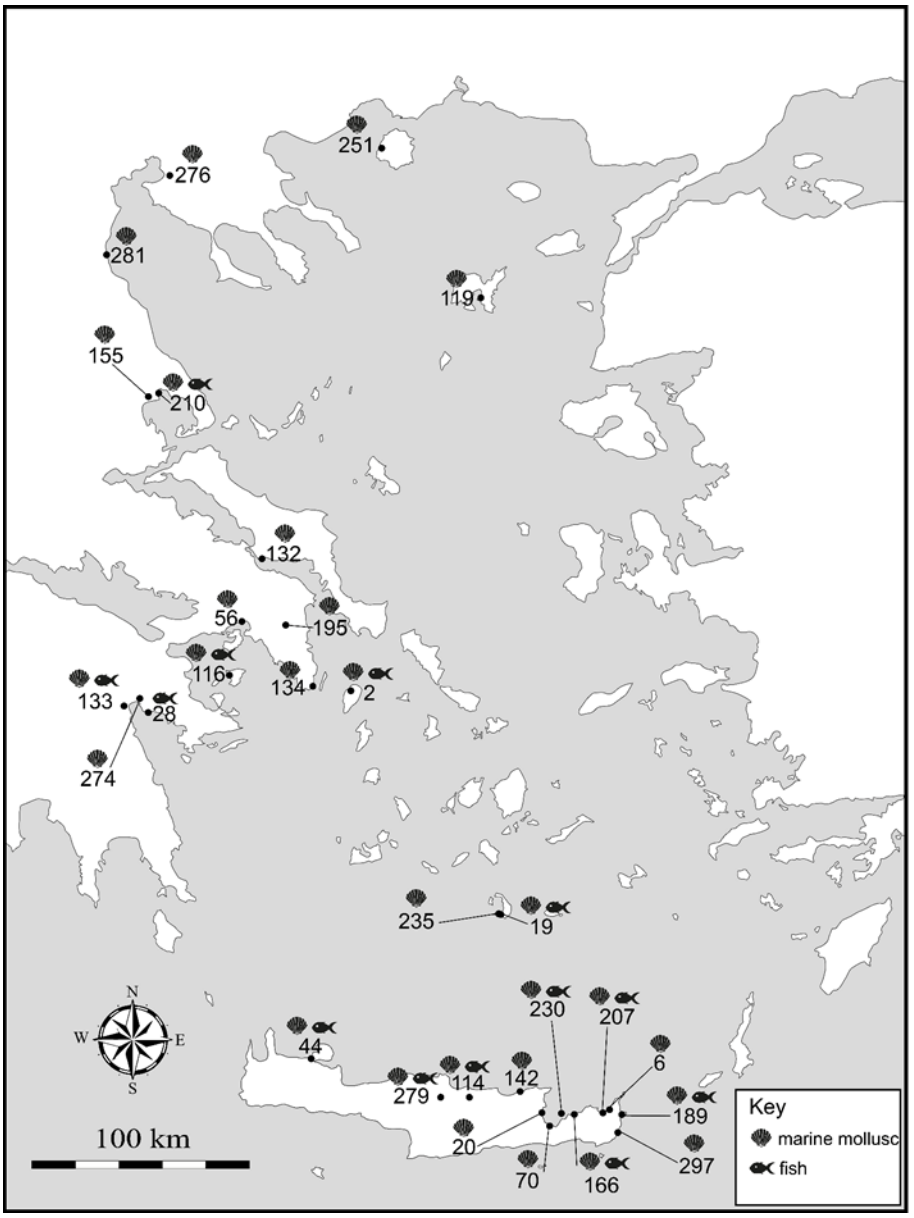

Figure 3.4. Distribution of seafood evidence from MBA–LBA settlement contexts in the study area. The numbers can be matched to those in Table 3.7 and Appendix 3:D

including floors, pits and in open areas, such as streets, suggesting an extensive exploitation of marine food sources for cuisine contexts. Marine food refuse has also been found at Pevkakia (**D210**), Lefkandi (**D132**.**1**–**4**) and Kastraki Almyrou (**D91**). Cretan settlements with comparable materials include Pseira (**D230**), Mochlos (**D166**), Gournia (**D70**.**4**) and a midden at Palaikastro

(**D189**.**2**). Marine molluscs were also reported from a destruction layer at Skala Sotiros (**D251**) on Thasos.

Contexts containing marine faunal remains are not common outside Crete in MB II (Table 3.7). Exceptions include Lerna (**D133**.**108**–**118**), Lefkandi (**D132**.**5**–**6**) and Kolonna (**D116**) on Aegina. On Crete, marine molluscs were reported from several sondages at Malia (**D142**.**1**–**12**), while additional examples come from Chania (**D44**.**33**–**39**), Mochlos (**D166**.**7**–**8**) and Palaikastro (**D189**.**3**–**14**). At Knossos (**D114**.**15**–**24**), a range of marine molluscs were found under the Stratigraphic Museum. From Petras Hill 1,[532] a "lakkos" contained around 120 crushed murex shells, fineware pottery, dozens of loom weights, as well as ritual objects such as *kernoi*, *rhyta* and a clay boat fragment. The murex have been interpreted as food debris from elite ritual consumption,[533] but given their fragmentary nature and a nearby EM II–III dye facility (Chapter 4.2), the remains are perhaps more likely to be debris from earlier dyeing and not connected to feasting. At Gournia (**D70**), a wide range of marine faunal evidence dates to this period. While reported in considerable numbers, the total quantity at each site is not substantial enough to consider their role as anything more than subsidiary to local diet. A dearth of published MBA contexts from other islands may account for *lacunae* here.

Only few MH III–LH I contexts on the mainland are undisturbed by later activity.[534] Marine fauna from late MH–LH I discard contexts are nevertheless known from Valtos (**D281**), Eleusis (**D56**.**3**), Lefkandi (**D132**.**7**–**11**) and Lerna (**D133**.**119**–**125**).

On Crete, there is much better evidence for seafood consumption in the MB III–LB I chronological grouping.[535] Marine mollusc remains are known from Palaikastro (**D189**.**15**–**27**), Zakros (**D297**),[536] Malia (**D142**.**14**–**17**) and Chania (**D44**.**40**–**81**). Further examples associated with serving contexts are present at MM III–LM IA Gournia (**D70**.**43**). Limpets, murex and topshells were found inside cups in the SW Wing of the Palace, different marine molluscs

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[532] At Petras Hill 1 over 50% of the marine mollusc assemblage were limpets with around 38% murex. The quantities recovered, however, have led to the interpretation that marine invertebrates did not form a large part of the diet (Haggis 2007, 715–775).

[533] Theodoropoulou 2012, 97, fig. 8. Note that the marine shells are hardly mentioned in Haggis 2007, 720.

[534] Marine mollusc remains at Mycenae are likely to be LH III rather than LH I or earlier. Reese *pers. comm.*, *contra* Wace *et al*. 1921, 157, 173.

[535] Later remains from LM IB Mochlos and the Chalinomouri farmstead (Reese *et al*. 2004, 117–125) are omitted, as are the wealth of marine remains from House A.1 at Papadiokampos (Sofianou & Brogan 2009, 6–9; Sofianou & Brogan 2010, 134–142). At Vasiliki, sea pebbles and marine invertebrate fragments commonly occur within the building materials at the site, leading the excavator to argue that they came into the site as a result of the exploitation of the natural limestone - which is rich in marine fossils - rather than collected from the coast and that marine molluscs formed no part of the diet at Vasiliki (Zois 1980, 301).

[536] Malacological remains were in reasonable quantities, in particular around the Palace, though a malacological study has not yet been published.

and an octopus radula in a bridge-spouted jar in the Palace Tower, and a topshell in a ewer from the pottery workshop and also in the Palace Tower area. Although some might be infill from the surrounding soil, they are important indicators of the presence of marine remains in these areas. All examples come from areas associated with palatial consumption, indicating that marine molluscs played some role in elite practices.

Outside Crete, the evidence comes from Akrotiri on Thera (**D19**) and nearby at Raos (**D235**), where marine molluscs were reported. Different marine food remains, including that of a whale, were recovered from Agia Irini on Kea (**D2**).[537] By contrast, fish remains are absent at Phylakopi. This may be due to local soil acidity as fish hooks are present (3.3.2), iconography suggests an interest in the sea (Chapter 5) and marine shells were published from the Mycenaean layers at the site.[538]

As a period of relatively short duration, remains from the MBA are commonly not assigned to a sub-phase, while others are simply listed as "MBA–LBA". Such examples are listed here. On the mainland, the contexts are often mixed. Marine faunal remains are known from EBA–LBA contexts from Tiryns (**D274**) and Midea (**D159**), from MH contexts at Pevkakia (**D210**), Asine (**D28**), Pallini (**D195.3**), Limani Pasa (**D134**) and Eleusis (**D56.2**), MBA–LBA contexts at Toumba-Thessaloniki (**D276**) and MH–Archaic mixed levels at Megali Velanidia (**D155**).[539] At Toumba-Thessaloniki, the marine molluscs had been collected alive and were found in food preparation contexts,[540] though for the other sites little or nothing is known about their contexts. On Crete, there are further examples. Marine faunal remains are present in contexts from EM–MM Agia Photia (**D6.2–7**), MM–LM Alevriko (**D20**), MM–LM Pseria (**D230**), MM–LM Petras Hill 1 (**D207**) and MM Tylissos (**D279**).

Before a discussion of chronological trends, it is important to consider the types of marine food consumed. Some species of marine mollusc remain popular, such as murex, cockles and limpets, and notable is the increasing popularity of topshells from the LN to LBA, while oysters, unlike in later periods, are not as popular as one could expect.[541] It is apparent that

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[537] Davis 1986, 111.
[538] Renfrew 1985, 326.
[539] As a result of downslope erosion, the malacological remains at Megali Velanidia were recovered in mixed MBA–Archaic layers across the site (*ArchDelt* 56–59 (2001–2004): B2, 490–491). The high number of marine shells in comparison to an almost non-existent animal bone assemblage from the site is notable.
[540] Veropoulidou *et al*. 2008, 174.
[541] Particularly in the Roman period, where oysters remains are one of the defining diagnostics elements of Roman period sites (Thüry & Strauch 1984).

Table 3.7. Marine food waste remains from MBA–LB I settlements. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. *denotes possibility that the material postdates the study.

Site	*LCP value*	*Fish*	*Mollusc*	*Chronology*
S90. Kastraki Almyrou, Phthiotis	302		X	MH I
S44. Chania, Crete	1046	X	X	MM I–LM IA
S56. Eleusis, Attica	1014		X	MH I–LH I
S133. Lerna, Argolid	552	X	X	MH I–LH I
S132. Lefkandi, Euboia	627		X	MH I–LH I
S166. Mochlos, Crete	462	X	X	MM I–LM IA
S189. Palaikastro, Crete	415	X	X	MM I–LM IA
S230. Pseira, Crete	801	X	X	MM I–LM IA
S70. Gournia, Crete	1653		X	MM I–LM IA
S114. Knossos, Crete	9555	X	X	MM I–LM IA
S116. Kolonna, Aegina	199	X	X	MM II–III
S142. Malia, Crete	803		X	MM II–III
S119. Koukonissi, Lemnos	891		X	MB II–LB I
S208. Petras Hill 1, Crete	970	X	X	MM II–LM III*
S6. Agia Photia, Crete	677		X	MBA
S279. Tylissos, Crete	9346	X	X	MBA
S210. Pevkakia, Thessaly	165	X		MBA
S195. Pallini, Attica	16780		X	MBA
S134. Limani Pasa, Attica	494		X	MBA
S28. Asine, Argolid	837	X		MBA
S2. Agia Irini, Kea	786	X	X	MC late–LC I
S297. Zakros, Crete	631		X	MM III–LM IA
S274. Tiryns, Argolid	323		X	MBA–LBA
S276. Toumba, Macedonia	3042		X	MBA–LBA
S281. Valtos, Macedonia	2417		X	MBA–LBA
S20. Alevriko, Crete	1878		X	MBA–LBA
S155. Megali Velanidia, Thessaly	3510		X	MH–Arch*
S235. Raos, Thera	6773		X	LC IA
S19. Akrotiri, Thera	1966	X	X	LC IA
S251. Skala Sotiros, Thasos	588		X	LB I

the dominant species consumed reflects the local marine topography.[542] For example, at Markiani, Pseira and Gournia, rocky coastal habitats dominate, which leads to the exploitation of locally available sources such as limpets and murex. The reverse is true close to sandy marine habitats, such as Lerna, where a focus on *Spondylus* is in accordance with its preferred habitat.

There are only few examples of pelagic marine fauna being consumed. This suggests that the procurement of seafood was conducted either from the shore, or wading in the shallows. Fishing hooks demonstrate the use of the fishing line, but the general lack of pelagic fish in all periods argue against the widespread use of boats in fishing. This is not to say that fishing from boats did not occur, but traces of such a practice are difficult to detect and the lack of iconographic evidence is telling (Chapter 5).

Unsurprisingly most settlements that provide evidence for seafood consumption are located beside the coast, though there are exceptions. It could be assumed that inland communities would not bother to access marine fauna due to its potential spoilage. Marine molluscs can nevertheless survive for several days in the right conditions and could theoretically be transported considerable distances before consumption.[543] Possible instances where this might have occurred include Dikili Tash, Midea and Archanes. The large quantities seen at Dikili Tash and Archanes in particular would suggest that it took more than daily visits to the coast and rather reflect a more systematic process of capture, storage and transport than would have been necessary at coastal sites.[544] Molluscs and fish could have been kept alive in leather bags containing salt water long enough to be transported to inland settlements and consumed fresh.[545] If this was the case, sites upward of 5km inland without evidence for seafood consumption probably signal a genuine lack of interest in seafood only a short distance inland. This might be due to alternative food preferences and their availability,[546] labour intensity in collection and transport of marine resources, or even restricted access to the coast by other coastal communities.

Moving on to chronological trends, molluscs were consumed in high quantities at some sites in LN northern Greece, though this is restricted to discrete

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[542] Unfortunately prevalent through all periods are instances where malacological remains are not divided according to species. This is particularly a hindrance in the EBA, where most reported shell assemblages are not given proper species identifications.

[543] For example in the Roman period, marine molluscs were found inland in areas of Germany and Switzerland - considerably more inland than the settlements presented in this study and showing that under the right circumstances marine molluscs could be preserved for considerable periods of time The Swiss examples have been argued to come from either the English Channel or the southern coast of France. See Thüry & Strauch 1984.

[544] Thüry & Strauch (1984, 101) report that oysters, in particular, can survive for up to 24 days outside of seawater.

[545] This could be achieved through the use of baskets lined with clay, which would be lighter than pottery vessels but yet still allow the containment of seawater, along with any marine fauna therein. Such objects would have decayed due to their biodegradable material.

[546] See Milner 2001 on the seasonality of oysters.

areas such as the area around Pagasitic Gulf and the Thermaic Gulf, where a variety of habitats could support large numbers and varieties of marine molluscs.[547] Different habitats such as estuaries, rivers and lagoons were also exploited, so not all of the remains, particularly in the area around *Kavala*, can be confidently assigned to marine species, though they appear to be the dominant group.[548] Among the settlements discussed above, the single most likely candidate for a community in which seafood played a major role is that at Saliagos, where a range of marine faunal material was recovered. Elsewhere, the consumption of seafood plays a subsidiary role in the LN, though an increased use of wet-sieving in island and coastal communities of the LN would confirm or challenge this hypothesis.

Marine consumption increases in the FN, coinciding with the spread of settlement into more marginal, particularly coastal regions. The recovery of tunny from Pevkakia is in accordance with local topography, as tunny could migrate into the Pagasitic Gulf and be tracked from the settlement, elevated and overlooking the shallow waters of the bay, and subsequently hunted during their breeding season. At no sites, however, was seafood a dominant food source, rather frequency of remains indicate a more subsidiary role to local diet.

The EBA evidence is vast, with a wealth of data from multiple settlements. While seafood continued to be a small part of sustenance for many communities, there are episodes or events of large-scale consumption. At sites such as Lerna and Markiani the evidence is considerable. Even at the highest levels of consumption, however, seafood was a minor component to the protein base of local diet.

Shark remains found at EH II–MH Argive settlements are noteworthy. While their number is not large, there are few comparable examples elsewhere, especially from considerably better studied Minoan settlements. At Lerna different shark types were consumed, including small examples such as school sharks to potentially larger types, such as blue sharks. It was suggested that the remains could reflect game hunting, which could be true for the remains at nearby Tiryns and Asine as well. This may have been a form of prestige-generating competition, akin to the hunting of wild beasts represented in later Mycenaean iconography.

Marine food appears to have played a substantial role in Protopalatial and Neopalatial Crete, associated with both non-elite and elite food consumption. Outside Crete, the evidence is scantier, though the wealth of marine remains from settlements such as Lerna and Akrotiri on Thera serve to illustrate what may have been lost, particularly from coastal settlements, due to inadequate recovery techniques. This is particularly the case in the MBA Cyclades, where

[547] Triantaphyllou 2015, 59.
[548] Mylona 2014, 6.

a lack of adequate recovery methods at sites such as Phylakopi, Grotta and Paroikia may have missed evidence.

Seafood appears to have played a central role in conspicuous consumption in communal contexts in some communities, where the emphasis was less on subsistence and more on the sensory and cultural associations of food.[549] Conspicuous consumption events can be identified as early as LN Saliagos, with further examples from EBA Markiani, Eretria Magoula, Lerna and MBA Gournia, Zakros and Knossos. While typically associated with drinking and the consumption of slaughtered animals, the presence of seafood in these types of contexts indicate that they played a role, if only minor, in conspicuous consumption. The recovery of seafood from Cretan palatial contexts indicate that they were consumed by elites, a theme further explored with other types of evidence below.

Unsurprisingly, the closer to the sea the settlement is, the greater the amount of marine fauna present, though there are exceptions such as more elite contexts at Mycenae and Archanes, indicating that seafood may have been a desirable commodity also for inland communities, where a more exotic or special prestige may have been attached.

3.2.5 Special contexts of marine food consumption

Evidence of seafood consumption in ritual spaces is scant (Appendix 3:E), though there is a suggestion that a space containing fish remains at LN Ftelia (**E65**) may have been a shrine. This Circular Building was of a communal character, inside which different figurines, specialised vessels and food detritus were found.[550] Similarly there is only one or two EBA examples of seafood cuisine in a possible ritual context. At Markiani (**E149**) on Amorgos, a slab-covered structure in Space 5 contained evidence of possible ritually-generated refuse.[551] It was originally conceived as a midden, though a row of lined stones, an open-air bench nearby and burned potsherd and animal bones lead

[549] Mylona & Grainger 2018, 219.
[550] Sampson & Mastrogiannopoulou 2017, 36.
[551] Space 5 contained 2146 limpets and a significant quantity of top shell remains, as well as burned animal bones and burned potsherds (Karali-Yannacopoulou 2006, 243). Most limpets bear traces from being detached from rocks. It is not clear whether Space 5 should be dated to EB IIA or EB IIB, though as a bronze/copper ornament from the same spot was dated to Ma IV, an EB IIB date is followed here (Marangou *et al*. 2006, 216, EE 246). It is also not clear from the report whether this feature is a gradual accumulation of material or rather a one-time event (Marangou *et al*. 2006, 91)

Table 3.8. Marine food waste from ritual or possible ritual contexts. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. Note: peak sanctuary LCP's were not generated. ▲ = peak sanctuary. *denotes possibility that the material postdates the study.

Site	*LCP value*	*Fish*	*Mollusc*	*Certainty*	*Chronology*
S149. Markiani, Amorgos	540		X	No	EC II
S60. Eretria Magoula, Euboia	1075		X	No	EH II–III
S309. Vrysinas▲, Crete	N/A	X		Yes	MM I–III
C11. Agios Charalambos, Crete	82527	X	X	Yes	MM II–LM I
S288. Viglia-Kissamou, Crete	608		X	Yes	MBA
S302. Mt. Juktas▲, Crete	N/A	X	X	Yes	MM IB–LM III*
S19. Akrotiri, Thera	1966		X	Yes	LC IA

to a ritual interpretation.[552] Burned animal bones cannot be solely interpreted as food remains,[553] while the schist slab lid implies a conscious intent to seal the "refuse". The finds may be the remnants of a large-scale feast with a ceremonial or ritual element in an open area between houses, with the stone-slab serving as a repository for debris after the event. At Eretria (**E60**) on Euboia, marine molluscs were recovered from an EH IIB–III hearth and circular stone structure in the centre of the *magoula*, the probable remains of communal feasting, possibly in association with ritual practices.[554]

From MM IB–IIB contexts atop the Mt. Juktas peak sanctuary (**E302**), marine molluscs were reported with many waterworn or worked, though some had been collected live and consumed at the sanctuary. Fish remains were also reported from the Vrysinas peak sanctuary (**E309**).[555] Given the strong ritual associations of these places, it is difficult to read the presence of seafood so far inland, atop mountains, as related to anything other than special contexts and intentional and meaningful consumption. In a slightly later context at Pseira (**E230**), marine molluscs and fish were reported alongside animal bones

[552] Karali-Yannacopoulou 2006, 243. There is no mention of whether the shells were burned and so we must assume that they were unburned, leading us into conflict with the idea that this was a hearth, as they would also bear traces of burning.
[553] A fire hot enough to burn animal bones would char the meat making it not consumable.
[554] The circular stone built structure and hearth contained pottery, as well as a range of material objects, including shell remains and a bronze object (*ArchDelt* 42: B1, 212). It could have been a refuse spot, however, given the presence of the bronze object, the central positioning of the structure in the centre of the *magoula* and its position apart and associated with any other structures, a ritual function is advocated here, of which it seems that marine molluscs were part of cuisine in association.
[555] Mylona 2016, 48–53.

in Room 4 of Building AC, a suspected shrine, in which it seems the consumption of marine food was part of the ritual consumption.[556] There is also evidence from LC I Akrotiri on Thera (**E19**), where around 300 marine shells were recovered in the West House, a building suggested to have housed a shrine with a strong marine character.[557]

As seen, the evidence for special consumption of marine animals is limited (Table 3.8), suggesting that seafood was generally not a preferred food type for these practices. Possible additional examples are easily overlooked or misinterpreted however. Pits containing material deposited in single events are especially problematic.[558] A multitude of rites, superstitions and rituals have been anthropologically associated with the deposition and closing of rubbish pits in many cultures, of which seafood may have played a minor role.[559]

The existence of marine molluscs and fish remains atop both the Mt. Juktas and Vrysinas peak sanctuaries is striking. Some extra effort must have been expended to catch and transport the seafood to these locations, indicating intent and purpose. In these particular contexts, the fish and molluscs may well have served as metarepresentations of the sea. The recovery of malacological remains from ritual deposits at Mt. Juktas, at least 11km inland, may mean that some of the material from closeby Archanes could have also had a ritual association.[560]

3.2.6 Seafood in mortuary ritual

In burial contexts, it is more difficult to ascribe malacological remains to a strictly cuisine setting. The evidence in this section, therefore, will treat the consumption of marine animal remains by funeral attendants, the body of the deceased (as an offering) and the propitiatory libation/sacrifice of marine animals together under the umbrella of funerary ritual cuisine, including both primary and secondary practices. When differences in usage can be determined, they will be highlighted (Appendix 3:F).

The lack of Neolithic funerary data in the study area precludes any meaningful discussion of marine food consumption in Neolithic cemeteries, with

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[556] Betancourt & Davaras 1998; Reese 1998, 35–36.
[557] Karali-Yannacopoulou 1990, 411–412 and table 2; Marinatos 1969, 38; 1972, 17–20, 41–44; 1974, 19–57.
[558] Pits or "bothroi" regularly contain debris, occasionally burnt, in both settlement and cemetery areas (Psimogiannou 2012, 191). Recently, there has been a tendency to see them as structured depositions (Chapman 2000; Pappa *et al.* 2004; Tomkins 2007, 189–190; Pappa 2008) where items may have been removed from circulation through ritual destruction (Appadurai 1986; Kopytoff 1986; Broodbank 2000, 262–263; Tomkins 2009, 140–144).
[559] See for example the argument by D'Agata (2001, 45–59) for the ritual associations of LB IIIC rubbish pits in western Crete. See also Halstead & Isaakidou (2004, 136–154) for the ritual nature of pits in the Mycenaean palace of Nestor at Pylos.
[560] Sakellarakis 1981, 413; 1983, 409.

the exception of a deposit at the Tsepi cemetery (**F205**.**1**) in Attica which may date to FN (Table 3.9). A pit (Deposit 39) containing significant quantities of marine shell and animal bone material was interpreted as the remains of a ritual meal in association with funerary rites at the cemetery, probably relating more to secondary practices.[561] Other evidence is lacking, with the exception of sea urchin spines found in a FN/EM I tomb at Kephali Aphroditis (**F94**) on Crete.

There is a considerable increase in marine faunal remains in EB I/II funerary contexts. Instances are typically found in the Cyclades or in nearby areas under their influence. Examples are known from Tsepi (**F205**.**3**) and Agios Kosmas (**F15**) in Attica, as well as Agioi Anargyroi (**F6**) on Naxos and at Agia Photia (**F4**) on Crete. At Agrilia on Ano Kouphonissi (**F28**), marine molluscs, pottery and marble items were deposited in a sunken forecourt (*prothalamos)* in front of a tomb.[562] The remains could either be the remnants of a previous tomb assemblage moved into this area after the deposition of a second body, or be an assemblage associated with a primary deposition of a body.

In EB IIA, examples are even more numerous. On the Greek mainland, animal bones and marine molluscs were found in a chamber tomb and its side chambers at Asteria Glyfada (**F48**), potentially relating to both primary and secondary practices.[563] In the Cyclades, examples are known from Aplomata (**F39**) on Naxos and Dokathismata (**F64**) on Amorgos. At Akrotiraki (**F24**), marine shells and grave goods were noted on a paved area west of Tomb 1.[564] These could have been moved outside the graves during secondary practices or during looting. Alternatively, the marine shells could be in their original position, where they served as food during funerary rites and/or ancestor worship.[565] In a similar manner, human bones, burned animal bones, marine shells, pottery and obsidian blades were discovered in a pit at Mantres tou Roussou (**F130**) on Amorgos.[566] This was not a tomb *per se*, though tombs had previously been noted in the vicinity. The presence of complete vessels containing burned animal bone lead to the interpretation of a ceremonial deposit.[567] The pit could contain the remains from funerary rituals, which may have included the secondary treatment of some skeletal material, judging from the presence of human bones. The marine shells in the deposit confirms their significance to such acts. A range of marine shells, mostly scallops, were found in at least ten tombs at Chalandriani (**F55**), where they are likely to have been consumed

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[561] Pantelidou-Gofa 2014, 14-16.
[562] Televantou 2008, 184.
[563] *ArchDelt* 56–9 (2001–2004): B1, 479–480.
[564] *ArchDelt* 56–9 (2001–2004): B6, 136–137.
[565] See Doumas (1987, 18) for the concept of ancestor worship at EC cemeteries, especially at Agioi Anargyroi and Lakkoudhes, where common platforms were found.
[566] Yiannouli 2002, 1.
[567] Tsountas 1898, 166–168.

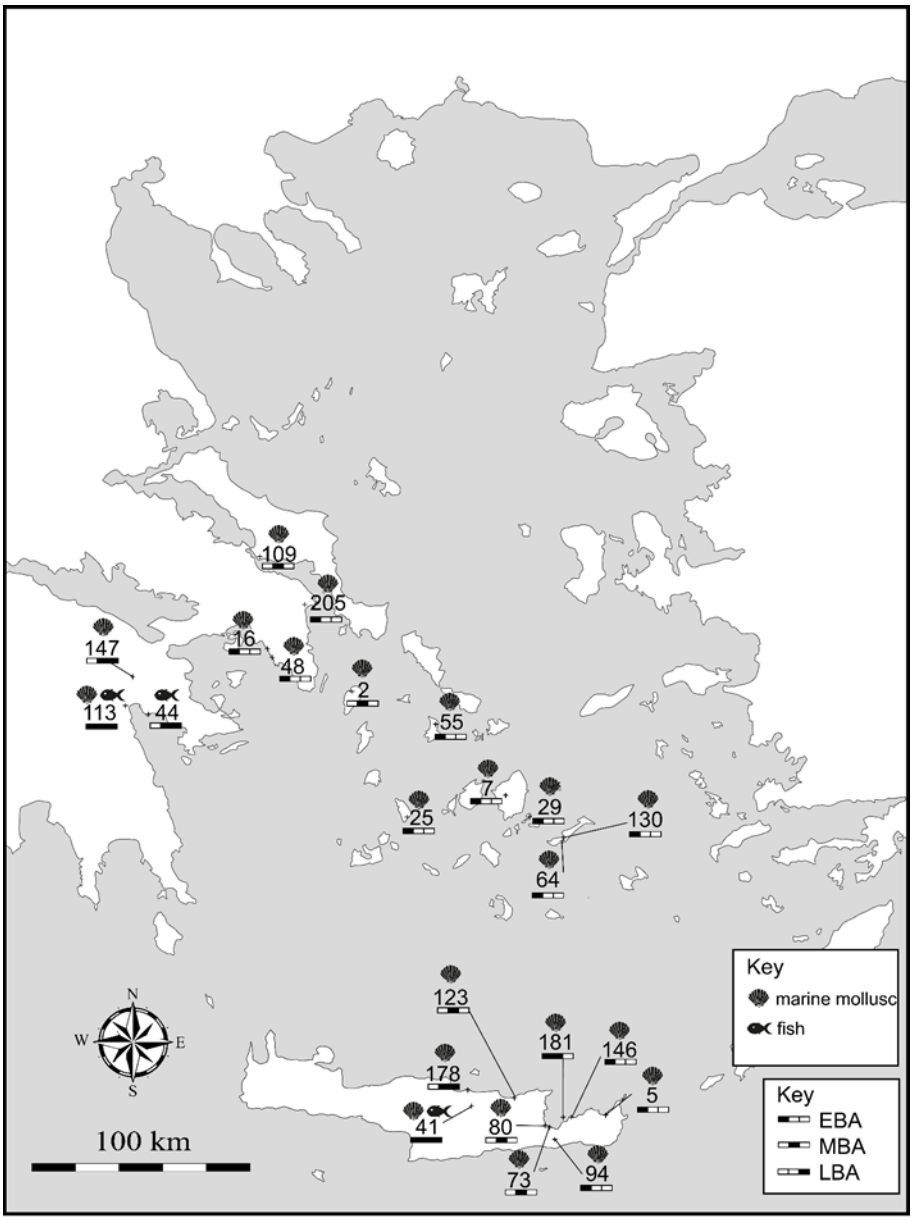

Figure 3.5. Distribution of seafood evidence from funerary contexts in the study area. The numbers can be matched to those in Table 3.9 and Appendix 3:F.

by either the funerary attendants or intended to accompany the deceased in the tomb.

Similar instances can be observed on Crete. At Pseira (**F181**), several cist graves contained marine mollusc remains. In particular, EB I–IIB Tomb 7

contained a large number of limpets, murex, top shells and other species collected alive before inclusion in the tomb.[568] Marine molluscs were reported from inside the House Tombs at Mochlos (**F146**), and are also present as far inland as Archanes Phourni (**F41**), where marine mollusc were concentrated in Burial Building 19 and its vicinity (**F41**.**1–2**), probably in both primary and secondary contexts.[569]

Burial evidence including marine fauna during EB IIB–III is known from Lerna (**F113**), while fish and marine molluscs were also found inside a burial *pithos* in Tholos C at Archanes Phourni (**F41**.**12**). In the same *tholos*, 80 marine shells were found in a twin vase along with fish-related iconography on some of the funerary offerings (Chapter 5).[570] These and additional examples of marine molluscs recovered from tombs at Archanes Phourni are remarkable given the 11.5km distance (LCP*:*34306) from the coast. These are certainly the remains of funerary cuisine, to which marine invertebrates played an important role. They appear to derive from acts taking place both during the deposition of the body and outside the grave, possibly later and some form of ancestor worship, in which seafood played a significant role.

Evidence from the MBA is scanty. Marine food from burial cuisine contexts are known from a few tombs at EM IIIB–MM IA Archanes Phourni (**F41**.**3–8**, **13**) and the North Cemetery at Gournia (**F73**) in Crete and possibly also Phylakopi (**F172**) on Melos.[571] In the following MB II period examples are known mostly from Crete, including Kalo Chorio (**F80**), Malia: la Tholos (**F123**) and Pseira (**F181**.**1–2**, **5–6**). At Agia Irini on Kea (**F1**), a small rim-handled jar containing sea urchin spines and shell fragments, likely to have been an offering of food for the deceased, was recovered from Grave 6. On the contemporary mainland, marine molluscs in funerary contexts are known only from Lefkandi (**F111**).

Slightly more information is available from the MB III–LB I chronological grouping, with most instances known from the Greek mainland. At Asine (**F44**), a fish vertebrae was recovered from Tomb MH 18 and at Prosymna (**F180**), marine molluscs were reported from Grave XVIII.[572] Marine remains were also recovered from the fills of the two shaft graves at Lerna (**F113**.**1–2**), indicating also their usage in high profile consumption events. Further evidence of their place in elite events on the Greek mainland is found in Grave Circle B at Mycenae (**F147**), at least 10km (LCP*:*11965) from the Argolic

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[568] Numbering 56 limpets, 45 murex, 21 topshells and several other species represented, Reese *pers. comm.*

[569] Soles 1992, 50–51.

[570] Sakellarakis & Sapouna-Sakellaraki 1997, 635–636; 2002, 114–118.

[571] Pithos Burial 183 at Phylakopi contained two limpet shells in the intramural burial of a child, found together with sheep/goat teeth and the skull of a small mammal (Dawkins & Droop 1911, 7).

[572] Subadult defined here as adolescent individuals and younger.

Table 3.9. Seafood evidence from funerary contexts. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Fish*	*Mollusc*	*Chronology*
C94. Kephali Aphrofitis, Crete	36646		X	FN–EM I
C205. Tsepi, Attica	1262		X	FN–EH II
C5. Agia Photia, Crete	677		X	EM I–II
C16. Agios Kosmas, Attica	564		X	EH I–II
C29. Agrilia, Ano Kouphonissi	3720		X	EC I–II
C7. Agioi Anargyroi, Naxos	14168		X	EC I–II
C55. Chalandriani, Syros	3836		X	EC IIA
C64. Dokathismata, Naxos	12253		X	EC IIA
C146. Mochlos, Crete	462		X	EM II
C130. Mantres tou Roussou, Amorgos	3517		X	EC II
C25. Akrotiraki, Siphnos	4150		X	EC II
C48. Asteria Glyphada, Attica	340		X	EH II
C181. Pseira, Crete	897		X	EM II–MM II
C41. Archanes Phourni, Crete	34306	X	X	EM II–LM
C113. Lerna, Argolid	552	X	X	EH III–LH I
C123. Malia La Tholos, Crete	565		X	MM I
C73. Gournia N. Cemetery, Crete	1653		X	MM I
C2. Agia Irini, Kea	786		X	MC I–II
C80. Kalo Chorio, Crete	2832		X	MM I–II
C109. Lefkandi, Euboia	626		X	MH II
C178. Poros-Katsambas, Crete	1635		X	MM IIB–LM I
C180. Prosymna, Argolid	20041		X	MH III
C147. Mycenae Grave Circles, Argolid	11965		X	MH III–LH I
C44. Asine, Argolid	895	X		MH III–LH I

Gulf. Marine invertebrate remains are present alongside animal bones in or around Graves N, I and B.[573] In Graves N and B, the marine molluscs are part of the primary deposition, likely a funerary meal, while the concentration of animal and marine mollusc material around the grave stele of Grave I could be evidence of secondary ritual.

For the MM IIIA–LM IA phases on Crete, marine remains were recovered from the fill of the dromos of a tomb at Poros-Katsambas (**F178**), difficult to interpret as it could be part of primary, secondary or even tertiary funerary practice. Elsewhere, marine molluscs were found in the Agios Charalambos

[573] Mylonas 1957, 148 (Grave Nu), 151 (Grave Iota); Mylonas 1973, 38 (Grave B).

cave (**F10**), at least 13km distant (LCP:82527) from the coast. It is not clear, however, whether the seafood remains relate to its use as a burial locale, or its later cultic function. In either case, seafood was considered important enough to be transported inland for consumption.

From the evidence presented, there are hints that seafood may have played a role in funerary performance particularly in EB I–IIA and in areas associated with Cycladic influence. Sites such as Pseira, Agia Photia, Tsepi, Asteria Glyfada and Mochlos have connections to the Cyclades in terms of material culture and, in some cases, tomb types. The evidence is difficult to untangle, as it is clear that animal remains are offered at times too, though the deposition and potential consumption of seafood in these contexts may signify some form of symbolic significance in the funerary performance, as they are not replicated in other non-Cycladicicing places. The exception is Archanes Phourni, where the presence of food remains in areas outside tombs is related to some form of funerary performance either during or sometime after the funeral. Given the distance to the coast from Archanes, the use of seafood is striking and betrays a special significance of seafood within the funerary performance at this site.

Generally, we see the use of seafood in funerary rites primarily in coastal locations, but remains can also be found quite far inland. Marine invertebrates at Archanes and Agios Charalambos show that considerable distances could occasionally be overcome to include them in funerary ritual. The sea is not visible from either place which may have lent extra significance towards the consumption of seafood. With the exception of evidence from Agia Irini, the lack of MBA cemeteries in the Cyclades precludes any wider discussion of the use of marine food during funerary rituals. The use of seafood in association with the shaft graves at Mycenae and Lerna is significant and suggests that the sea was referenced by some kin groups as part of funerary ritual and potentially, as an aspect of elite identity. The distance of Mycenae to the coast reinforces this notion.

3.3 Isotopic analyses and marine food

Isotopic analysis of human bone collagen provides an insight into the diet of past people.[574] The habitual consumption of marine food generally result in elevated $\delta^{13}C$ values in human bone collagen.[575] These data, however, are not

[574] Nafplioti 2016, 44: "The technique of isotopic analysis is based on the principle that 'you are what you eat', i.e. that molecules consumed as food or water are synthesized into consumer's body tissues...and that isotopic analysis of consumers' tissues can measure a chemical "fingerprint" within their remains, which can directly be linked to food and water ingested *in vivo* by the respective individuals."
[575] Richards & Hedges 1999.

without problems. It has been demonstrated that when marine protein constituted less than 20% of the diet, it is not detected in the isotopic values.[576] Another problem is that 'low trophic' species, i.e. species towards the bottom of the food-chain which are consumed by larger species, may fall below the detection thresholds of methods currently employed. The majority of littoral fish and marine molluscs fall into this category, the source of marine food most likely to have been consumed in prehistory.[577] In addition, due to bone formation processes, isotopic analysis can only target dietary habits during the last 15 years of life of an individual, meaning that some sampled individuals could have consumed more marine sources earlier in life.[578] Another problematic issue is the results of a recent, though welcome, analysis of fish bone collagen from Greek antiquity, which paints a complex picture.[579] An important outcome of the study is that it seems that nitrogen values ($\delta^{15}N$) cannot be used alone as a marker of fish consumption, rather carbon values ($\delta^{13}C$) may be better, though there is also the issue of C^4 plant consumption muddying the picture.[580] The implication of this analysis is that fish consumption may have been greater than previously believed and that it is vital to consider isotopic analysis of both fish and human bone collagen.[581]

Although isotopic analyses have become more frequent in the last two decades, they are still few and it is necessary to include evidence outside the study area and period to gain a broader perspective on developments. Isotope analyses of human skeletal remains from LN Stavroupoli in Macedonia and Makrigialos in Thessaly failed to show marine foodstuff consumption despite the proximity of these settlements to the coast.[582] At Makrigialos there appeared to have been a reliance on a plant-based diet, while at Stavroupoli, more meat was consumed.[583] Isotopic analysis of skeletal material from the Neolithic Alepotrypa cave in southern Laconia suggested an overwhelming focus on plant food, again despite the proximity to the coast.[584] An investigation of LN–FN diet at both coastal and inland settlements showed a remarkable dearth of

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[576] Milner *et al.* 2004; Hedges 2004.
[577] Garvie-Lok 2001, 326–330; Hedges 2004.
[578] Human bone contains different density fractions, representing different episodes of bone formation. Younger, more recent bone is less dense while older fractions are more mineralised. The partition of the bone takes approximately 15 years. What this means essentially, is that the isotopic signatures of different bone fractions can vary depending on the anatomical sites sampled (Bell *et al.* 2001, 66–79).
[579] Vika & Theodoropoulou 2012, 1618–1627.
[580] C^4 plants are thought to have been rare in prehistoric Greece, though the thorny issue of the recovery of millet in small quantities from some south Balkan sites hints that it could have been introduced in prehistory (Dotsika *et al*. 2019, 1–22), with recent evidence suggesting at the end of the 3rd millennium BCE (Valamoti 2016, 51).
[581] Vika & Theodoropoulou 2012, 1625.
[582] Stavroupoli: Triantaphyllou 2002, 829–846; Makriyalos: Triantaphyllou 2001, 134.
[583] Triantaphyllou 2015, 66–67.
[584] Papathanasiou, Larsen & Norr 2000, 221–223.

marine protein and a heavy focus on terrestrial food sources.[585] Samples from Franchthi cave and Kephala contained evidence for a more varied diet, however, which may hint at the presence of marine sources in the diet, albeit in small quantities.[586] The changes in subsistence practices at the beginning of the Neolithic correlate with a shift towards terrestrial food consumption and in particular plant-based foodstuffs.[587] This shift is seemingly a result of a reorientation towards the cultivation of food sources, rather than hunting and gathering. This had a particularly adverse effect on the practice of fishing and present evidence suggests that a more extensive Mesolithic exploitation of the sea ended abruptly at the start of the Neolithic.[588]

Isotopic analysis of EBA skeletons focusing on diet are rare. The study of 12 individuals from a mass burial at EH II Thebes showed a dominantly terrestrial diet.[589] At EH Perachora, 19 samples had elevated $\delta^{15}N$ readings, hinting at mixed terrestrial and marine food sources and the same conclusion was reached from contemporary Proskynas.[590] Despite an extensive burial record, the dearth of suitable skeletal material has hindered analyses of this variety in the Cyclades.[591]

The analysis of 12 samples from MH Thebes showed a continuation of the EH dietary pattern. However, analysis of samples taken from the Northeast cemetery at Thebes, some 2km closer to the sea, showed that some individuals had higher values for marine protein consumption. Freshwater fish consumption, e.g. from Lake Kopais, can be ruled out as it would leave a terrestrial isotopic trace.[592] At MBA Lerna and Asine, both coastal settlements, analysis indicated a terrestrial diet, with slightly elevated values for animal-based protein in some cases.[593] A plant-based diet was also observed at contemporary Aspis in Argos, with one sample showing elevated levels for animal protein.[594] MBA samples from Makrigialos showed slightly elevated levels for marine-based sources contrasting with samples from the Neolithic period at the same site.[595] Despite a wide-range of marine molluscs found at Toumba in the

[585] Papathanasiou 2003a, 320. This seminal investigation incorporated human remains from coastal Alepotrypa, Franchthi and Kephala, as well as inland Theopetra, Tharrounia and Kouveleiki, showing a remarkable dearth of marine protein in the diet.
[586] Papathanasiou 2015, 34.
[587] Powell 2003, 79–82; Cavanagh 2007.
[588] Papathanasiou 2003a, 320. See Powell 2003, 75–84 for a discussion of Mesolithic exploitation of the sea.
[589] Vika 2011, 1157–1163.
[590] Petroutsa *et al.* 2007, 292–294; Papathanasiou *et al.* 2009, 229–230.
[591] This is one of the many instances where we are hindered by the widespread looting of Early Cycladic graves, the skeletal material from which could have helped to elucidate this matter.
[592] Vika 2011, 1157–1163.
[593] Triantaphyllou *et al.* 2008, 3031–3033; Ingvarsson-Sundström *et al.* 2009.
[594] Triantaphyllou *et al.* 2006, 627–637.
[595] Triantaphyllou 2001, 134.

MBA–LBA, analysis did not indicate that marine-based proteins were a significant source of dietary protein.[596]

The MBA evidence for marine consumption is thus minimal, despite the proximity to the coast of most sampled individuals. There is a predilection towards plant-based protein as the staple of the diet with increasing evidence for some individuals consuming more animal-based food sources. There is, however, a focus here on the Greek mainland and until more analyses are undertaken in the islands and Crete, the terrestrial focus of diet here cannot be extrapolated to other regions.

Samples from Grave Circles A and B at Mycenae indicated an elevated signature for animal consumption in addition to plant consumption. Some samples, however, had isotopic signatures higher than the local level, suggesting that certain individuals consumed non-local food, probably from marine sources.[597] A similar situation can be observed in cemeteries around Knossos. A study of 81 samples from MM II–LM I Ailias and MM III–LM I Gypsades showed a variety of dietary compositions. Notable was a group from Ailias that had consumed more marine-based protein than the others.[598] This group, about one third of the sampled population, ate a mix of marine, plant and animal proteins. This group dates between in the range between MM II–III, suggesting continuity in diet from the Protopalatial to Neopalatial period.[599] It was centred particularly in Tombs V and VI, though not all individuals buried in these tombs consumed marine protein, indicating that diet varied within kin/social groups.

The samples from Mycenae and Knossos require further discussion. Both settlements were centres of emerging or dominant power with materially visible elites, buried in an elaborate manner.[600] The variability in diet noted among them implies that diet was negotiable, at least at an elite level, and linked to various factions, ideologies or personal identities. Interestingly, both settlements are located inland from the coast. We do not know if the groups with a higher marine component in their diet came from or resided in other settlements closer to the coast, such as Tiryns and Poros-Katsambas for example. It has, however, been demonstrated that animal protein consumption increases at the expense of plants during the MBA and start of the LBA, in correlation to proximity to a palatial centre.[601] The results suggest that in a stratified society, elites may have expressed status through diet as much as through material culture. Different activities, including eating, converge in the articulation of a personhood set apart from others both in life and death.

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[596] Nitsch *et al*. 2017, 105–137.
[597] Richards & Hedges 2007, 220–230; Nafplioti 2009, 289.
[598] Nafplioti 2016, 46.
[599] Nafplioti 2016, 49.
[600] For Knossos, see Hood 2010, 161–168; for Mycenae, see Mylonas 1973; Schliemann 1880.
[601] Papathanasiou 2015, 44.

From this brief overview it stands clear that there were no sampled populations with a predominantly marine-based diet. There is also little evidence that the contribution of marine protein was anything above minimal. It must be stated emphatically, however, that this interpretation is contingent on the correct identification of marine isotopic values. It is unfortunate that many studies have not incorporated fish bone isotopic analyses alongside their animal bone isotopic analyses. This notwithstanding, we do get hints that seafood consumption played some role in elite contexts, which suggests a negotiation of diet. Additional analyses that take into account both δ15N and δ13C values are required in order to ascertain whether these patterns are contingent for other parts of the Aegean, or if there is a sampling bias towards specific regions and contexts.

3.4 Conclusion: marine fauna in cuisine

A variety of evidence has been presented above for the incorporation of marine fauna into foodways. The sources paint a complex and inconclusive picture. Both natural and cultural formation processes seem to play a key role in the formation of the available data, as does publication bias. When marine faunal remains have been expressly considered in recovery strategies, they are generally found. It is no coincidence that most of the remains have been found on Crete, where wet-sieving has been common-place for some time. This raises concerns in the fidelity of the comparative paucity of marine fauna outside the island, which only further investigation and future incorporation of wet-sieving will be able to verify.

The presence of fishing apparatus gives a useful indicator that marine food sources were consumed, though they cannot inform us to its intensity. Similarly, isotopic analyses also present an inconclusive picture and the lack of incorporation of marine isotopic values may mean that seafood consumption was greater than we are led to believe. It is therefore to the physical faunal material that we must place our greatest emphasis.

Seafood consumption is evident consistently throughout the time-frame of the study in quotidian contexts, with particular intensity during the LN, EB IIA and the later MBA. Generally, marine molluscs were recovered more commonly than any other form of seafood, probably as a result of preservation bias, though only in a few places does seafood appear to play anything more than a minor role in diet. A particular focus can be observed in the EBA Cyclades and selected areas around the islands, where seafood is included in several funerary contexts. Few EBA cult contexts have been identified and so the *lacuna* of seafood in these contexts is more related to a lack of identifiable ritual practice outside funerary contexts.

It does, however, appear that seafood may have played a symbolic role in some places in the MBA. The evidence presented from the Mt. Juktas and

Vrysinas peak sanctuaries indicates that the sea may have been symbolically referenced through the deliberate act of seafood consumption. At the peak sanctuaries the role of seafood in consumption never appears more than supplementary, though this may be a reflection of the effort required to transport these creatures to the shrines and therefore it may be more prudent to read significance in their presence, rather than their quantity as part of the faunal assemblage.

An emergent feature is the evidence of seafood consumption at late MBA/early LBA sites in elite contexts further inland. Two key examples can be found in graves at Mycenae and Knossos, supplemented by isotopic evidence. It seems clear that these emerging elites, who are likely to have preeminence not just at their local community but within a wider region, could gain access to a food source which was not easily accessed from their home settlement. Such a mobilisation of resources may be reflective of the deployment of power, where luxury food may have been eaten at special events, a measure of affluence above and beyond the readily available local food sources.[602]

A greater quantity of evidence for seafood consumption is evident on Crete towards the end of the MBA, aided both by the greater care taken in excavation to recover marine faunal data and the preservation of LM and later MM layers through a variety of destruction levels on the island. The quantities of material recovered indicates that seafood played more of a role on Crete than elsewhere, being recovered from both elite and non-elite contexts. Together with other forms of data (Chapters 4–5), it suggests a deeper engagement with the sea on Crete than evident in other areas of the Aegean.

[602] This would seem to correlate with Level 3 or 4 of Ervynck *et al.*'s (2003, 429) criteria of food consumption: "Level 3: affluence: the consumption of goods beyond basic and considered needs; Level 4: luxury: the consumption, beyond the level of affluence, of goods that are special, limited in supply, difficult to procure or very expensive for other reasons"

4. Marine Manufacture

4.1 Introduction

This chapter describes the transformation of marine faunal remains, especially marine shell, into material culture and their use in different forms and contexts. Marine shells were exploited in a number of ways, ranging from the extraction of purple dye, to their transformation into utilitarian, special and body ornamentation objects. Marine shell objects may have been desirable for their shape, colour and reflectivity and invested with different meanings.[603] The skill involved in the production of some forms may have added extra value and they may have been considered prestige items with biographies.[604] This value may have increased with distance from the coast.[605]

Many marine shell objects were intended for display, as bodily adornments or objects orchestrating cult practices. It is likely that they carried social significance and could symbolise material relationships and interaction between individuals, groups and communities.[606] For these reasons they are an important, though underutilised, source of evidence for human-sea interaction and the significance of seascapes. Previous work in Aegean prehistory has focused on the utilisation of specific species,[607] their transformation into various types of artefact[608] and their use in the production of purple dye.[609] However, these analyses rarely focus on their embeddedness in a seascape.

To rectify the situation, this chapter establishes just how common marine faunal products were and whether there were regional or chronologically concentrations or patterns in their use. Additionally, it discusses whether archaeological context can guide towards function and potential meaning within social contexts. The interrogation follows the *chaîne opératoire* of production, beginning with the extraction of murex dye, evidence for production of marine

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[603] Trubitt 2003, 244
[604] Appadurai 1986, 34; Kopytoff 1986, 66–68; Gosden & Marshall 1999, 169–178.
[605] Winters 1968.
[606] Trubitt 2003, 244.
[607] For cone shells, see Reese (1983, 353–357; 2019). For triton shells, see Åström & Reese (1990, 5–14). For Spondylus, see Theodoropoulou (2011, 93–104), Veropoulidou (2011b, 191–208), Halstead (1993, 603–609) and Tsuneki (1987).
[608] Reese 1984, 237–238.
[609] Reese 1987a, 201–206; 2016; 2019; Carannante 2011, 9–18; Apostolakou *et al.* 2012, 179–182.

shell objects, finished objects of both a suspected utilitarian and ritual function, and body ornamentation objects. From the results it becomes possible to discuss these objects from a seascape perspective. Throughout the chapter, the catalogue references refer to tables contained in Appendix 4 (*Supplementary material*).

4.2 Murex dye production

Purple dye is one of the most distinctive and widely attested products obtained from the sea.[610] It was obtained through a complex process of extraction from the hypo branchial gland of a living sea mollusc of the *Muricidae* (or murex) family (*Hexaplex.* Sp or *Bolinus.* sp.), variously termed murex or purpura dye, as well as 'Tyrian' or 'Royal Purple' and with colours ranging from pale pink to black-purple.[611] The resulting dye was used to colour textiles.

Murex dye production has long been recognised in archaeological research, though often treated uncritically and with a focus on determining its Mediterranean origin.[612] Recent approaches, however, have also addressed the stages in its production,[613] as well as the application and wider significance of murex dye as part of textile industries.[614] Important has been a qualification of the scale of production, from domestic to more specialised industries, as well as a more careful evaluation of archaeological contexts.[615]

The production of purple dye involves several stages.[616] The first is the harvesting of the live mollusc, which could be undertaken by hand for *Hexaplex* sp. while for *Bolinus* sp. a line, net or trap would have been required.[617] This is likely to have been followed by a storage stage, in which several murex molluscs would have been kept alive in saltwater in a large container. The actual processing involved the shattering of the shell to break the hypo branchial gland, likely done with stone tools.[618] The whitish, transparent mucus obtained oxidises and turns into various shades of purple, though a key consideration is the avoidance of direct sunlight, which could adversely affect the process.[619] A key feature of purple dye extraction centres therefore include installations that provide shade and allow a greater control of the chemical reactions involved in the transformation of the mucus to dye.

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[610] Marín-Aquilera *et al*. (2019) for eastern, western and central Mediterranean comparanda.
[611] Reese 1987a, 203–204.
[612] Stieglitz 1994, 46–54; Burke 2010.
[613] Marín-Aquilera *et al*. 2019; Susmann 2015; Alberti 2008, 73–90.
[614] Andersson Strand 2015.
[615] Alberti 2008, 73–90.
[616] See Marín-Aquilera *et al*. 2019, 130, fig.1 for a useful summary.
[617] Alfaro & Mylona 2014, 154–159.
[618] Marín-Aquilera *et al*. 2019, 132.
[619] Apostolakou *et al*. 2016.

Important also is the distinction between murex pigment and murex dye.[620] The former is a coloured mucus, which can be dried into a powder or applied directly to garments, while the latter is formed of a mix of the pigment and a chemical agent to make it water-soluble, which increases its quantity.[621] After the substance has been extracted, it can be applied to textile. This was undertaken by either being directly applied onto the textile, likely as a pigment,[622] or applied to the textile through being placed inside a vat for several days as a dye.[623] There has been debate over the quantities of murex molluscs required, with initial experimental estimates suggesting that each mollusc only contained a meagre 0.1mg of purple dye.[624] This has recently been challenged, however, and it appears that considerably more dye could have been extracted.[625] Because of the labour involved and based on later historical references, it is almost certain that purple dyed textiles were highly valued also in prehistory.

Only a few stages in purple dye production can be attested archaeologically. The first is the crushing of the murex molluscs, which can be detected both in production and waste contexts. It is important to determine whether the shells were crushed, as murex was also used as food. While stone crushing tools were needed in the extraction process, these are difficult to identify, as they could have served other purposes as well. Considerable quantities of crushed murex shells are a by-product of this process and can be secure indicators, especially if found in connection with the second stage. The extracted dye could be stored in ceramic containers, which if stained purple would be secure evidence of murex production.[626] The second, and most important stage, centres on the presence of installations dug into floors to contain large volumes of liquid, where garments were soaked in purple dye.[627] After this production process, in the third stage dyed garments could be worn or exchanged. Due to their perishable nature, no examples are known in the Aegean archaeological record and vanishingly few are known to the wider archaeological record.[628]

The following evidence is divided into subcategories based on the strength of evidence present (Appendix 4*:*A). The presence of 'Installations' is an indication of direct dye production through the use of dye processing vats and

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[620] Koren 2005; 2013.
[621] Koren 2013, 63.
[622] McGovern & Michell 1990, 154.
[623] Cardon 2007, 562.
[624] At this estimate, it would take 12,000 murex to produce only enough to dye the trim of a single garment (Reese 1987a, 203–204)
[625] Burke 2010, 36; Hopkins 2013.
[626] Marín-Aquilera *et al*. 2019, 136.
[627] Cardon 2007, 562.
[628] Murex-dyed textile fibres were identified at the Iron Age copper smelting site of "Slaves Hill" in the Timna valley of southern Israel (Sukenik *et al*. 2021)

crushed murex associated with these features. 'Redeposited' evidence concerns the recovery of substantial quantities of crushed murex shells, though without the identification of installations. 'Indirect' evidence concerns the recycling of crushed murex shell into other forms of material culture, such as frescoes or ceramics.

The evidence for murex dye processing in the prehistoric Aegean mostly comes in the form of redeposited and, less frequently, dye processing installations.[629] The earliest published[630] evidence is from EM II–III Petras Hill 1 (**A207**) where the limited amount of fragmentary shells have been argued to be enough for small scale-dying.[631]

Purple dye extraction is better attested in the MBA, particularly on Crete (Table 4.1). A small deposit of murex was found in the MM II–III Pit House at Gournia (**A70**),[632] perhaps scant remnants of small-scale textile dyeing. Better evidence comes from MM II layers at nearby Papadiokampos (**A199**), where a small amount of crushed murex was found inside a storage jar.[633] This could represent the waste product of the extraction process. Similarly, crushed murex found in destruction layers at MM III Chania (**A44**) are likely evidence of murex dye processing at the time of a destruction at the site. Murex detritus appears to have been recycled in an innovative way at MM III–LM I Palaikastro (**A189**.**9**), where the floor and interior faces of a wall in Building 6 were covered with plaster and crushed murex fragments, a feature repeated at several other Aegean sites, sometimes inland.[634] At the same site, deposits of crushed murex shells were also recovered in Blocks Γ and M, as well as Buildings 1 and 4 (**A189**.**1**–**8**). The earliest evidence dates to MM II, though it appears most is from the following MM III–LM I. Indirect evidence of murex was also reported from MBA–LBA contexts at Malia (**A142**), Mochlos (**A166**) and Sissi (**A249**). Crushed murex also appears in LM I plaster from

[629] For a wider database including sites outside the study area, see Marín-Aquilera *et al*. 2019, 132–135, table 1.
[630] Recent evidence of murex deposits from the submerged EH I site at Labayanna in the Argolid is likely to change the picture (Reese *pers. comm.*). Small amounts of crushed murex were reported from Section 8A at EM I Chania on Crete (*ArchDelt* 60: B2, 1009), though the evidence is small and therefore inconclusive.
[631] Theodoropoulou 2012a, 96.
[632] Murex were found in Protopalatial deposits along with animal bones and a variety of detritus. These may be evidence of Protopalatial dye processing at the site, though as they come from a secondary context. The presence of animal bones also leads one to question whether this could be food detritus. See Watrous *et al.* 2015, 406.
[633] Apostolakou *et al.* 2014, 325–332.
[634] For a wider discussion of murex shell as component of plaster at several Aegean sites, see Brysabert (2007, 29–51). Fragmented murex shells were even transported to the inland Minoan palace at Monastraki (25km inland) and redeposited near a lime kiln (Carannante 2011, 9–18).

Table 4.1. Sites where murex dye production is attested in the study area. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. Abbreviations: Installations = the detection of murex dye processing installations and units, the strongest form of evidence for murex dye production; Redeposited = crushed murex fragments that have been detected in archaeological contexts at the site; Indirect = the use of murex shell fragments in other manners, such as in plaster. * denotes the possibility that the evidence postdates this study.

Site	*LCP value*	*Evidence*	*Chronology*
S207. Petras Hill 1, Crete	970	Redeposited	EM II–III
S13. Agios Mamas, Macedonia	1442	Redeposited	MBA
S142. Malia, Crete	803	Redeposited	MBA
S184. Pacheia Ammos-Pefka, Crete	819	Installations	MM IIB
S249. Sissi, Crete	726	Redeposited	MM II–LM III*
S199. Papadiokampos, Crete	849	Redeposited	MM II–LM IB*
S189. Palaikastro, Crete	415	Redeposited	MM II–LBA
S70. Gournia, Crete	1653	Redeposited	MM II–III
S56. Eleusis, Attica	1014	Redeposited	MH II–LH I
S28. Asine, Argolid	837	Redeposited	MH III
S44. Chania, Crete	1046	Indirect	MM III
S276. Toumba, Macedonia	3042	Installations	MH III
S2. Agia Irini, Kea	786	Indirect	MC late
S133. Lerna, Argolid	552	Redeposited	MBA–LBA
S302. Mt. Juktas, Crete	N/A	Redeposited	MBA–LBA
S279. Tylissos, Crete	9346	Redeposited	MBA–LBA
S211. Phylakopi, Melos	476	Indirect	MC late–LC I
S213. Pigadia, Karpathos	906	Redeposited	MM III–LM I
S93. Kastri, Kythera	890	Redeposited	MM III–LM I
S166. Mochlos, Crete	462	Redeposited	MM III–LM I
S230. Pseira, Crete	801	Indirect	LM I
S19. Akrotiri, Thera	1966	Indirect	LC IA
S235. Raos, Thera	6773	Indirect	LC IA
S77. Ialysos-Trianda	4020	Indirect	LBA
S165. Mitrou, Phthiotis	256	Redeposited	LH I–II*

Pseira (**A230**). There are unsubstantiated hints at murex dye production inland at Tylissos (**A279**) and at the Mt. Juktas Peak Sanctuary (**A302**), where murex shell fragments were recovered.

Murex dye production contexts can also be identified outside Crete at the end of the MBA (Fig. 4.1). Significant quantities of fragments were noted in

the MB III levels at Kastri (A93) on Kythera, interpreted as dye production.[635] The same was observed at contemporary or slightly later Pigadia (A213) on Karpathos while murex dye pigments occur in wall paintings at Ialysos (A77) on Rhodes. A 0.17m thick layer of murex shell fragments on the floor of Room N. 5 at Agia Irini on Kea (A2) is paralleled at Palaikastro where detritus was incorporated into floors and wall plaster. At Phylakopi on Melos (A211), murex was incorporated into fresco plaster though no production deposits were identified. Considerable quantities of crushed murex have also been found in secondary settlement deposits at LC I Akrotiri on Thera (A19.1–8), while primary deposits or processing installations remain yet to be identified. Crushed murex in the clay fabric of ceramic vessels and fresco plaster indicates the potential for murex dye production at the town,[636] likely to have taken place beside the coast and waste products transported to the town for recycling.[637] It has also been determined that murex pigment was used in some frescoes at Akrotiri and at neighbouring Raos (A235).[638] Elsewhere, murex shell fragments were found in late MBA contexts at Kolonna (A116). There are hints at murex dye production also at Eleusis (A56), Agios Mamas (A13), Lerna (A133) and early Mycenaean Mitrou (A165). At MH III Asine (A28), 253 fragments of murex shells were recovered from Tombs B11 and B15.[639] The quantity and degree of fragmentation of shells in such contexts is rare and they could have been accidentally deposited as backfill into the tombs from areas where processing had previously taken place, rather than be part of the funerary ritual.

In some rare instances evidence of murex dye production can be identified by installations or objects associated with the production process. At MM IIB Pacheia Ammos-Pefka (**A184**), high quantities of crushed murex shell were found in clay jars, some stained purple. There are also hollowed wells and basins at the site, possibly indicating the manufacture of multiple colours.[640]

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[635] Huxley & Coldstream 1972, 36–37.
[636] Ceramics: Karali-Yannacopoulou (1990, 414); Fresco plaster: Reese (1987, 205).
[637] Carannante (2014, 276), *contra* Karali-Yannacopoulou (1990, 413) who argues that the remains are food detritus, with murex dye processing being too unhygienic to be carried out in the town due to the strong odour associated with it.
[638] Sotiropoulou *et al*. 2021, 171–187. Examples include Akrotiri and Raos on Thera and Trianda on Rhodes, dated to LC/LM IA.
[639] From the disturbed fill of Tomb B11, 224 fragments from at least 42 murex molluscs were recovered in and around Tomb B15, 29 fragments from around 12 murex molluscs were recovered (Reese 1987a, 205).
[640] Apostolakou 2008, 1−2.

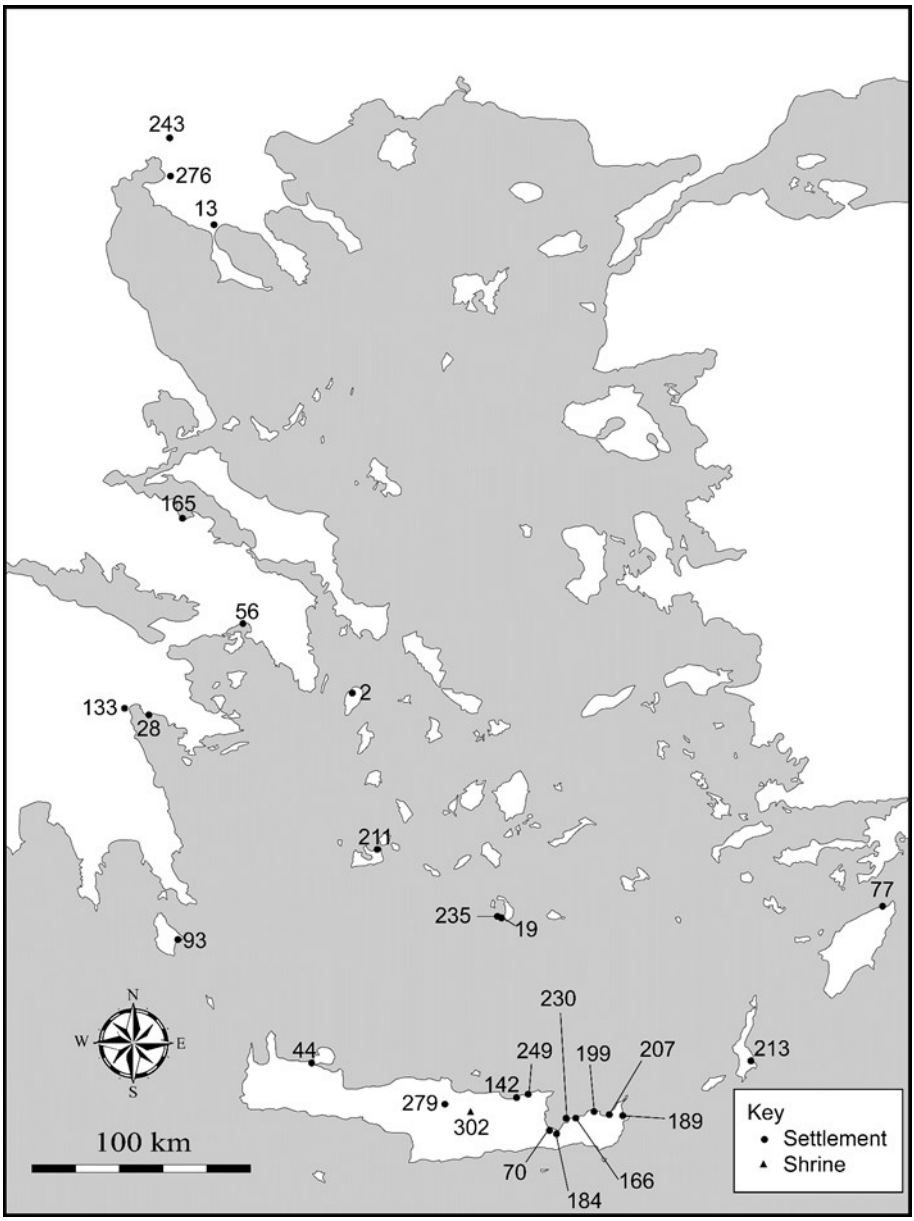

Figure 4.1. Distribution of the evidence for murex dye production in the study area. The numbers can be matched to those in Table 4.1 and Appendix 4:A.

Similar types of installations were also present at Toumba in Macedonia (**A276**), where small hearths, a kiln and plaster coated pits and weaving tools were identified together with large quantities of murex shell fragments.[641] The finds from Pacheia Ammos-Pefka and Toumba represent an almost complete sequence of murex dye production and constitute the best examples in the study area.

While the evidence for purple dye extraction in the Aegean is among the earliest in the Mediterranean, the production of purple-dyed garments is most strongly associated with the Phoenicians and as a highly valued commodity in historical periods.[642] A connection between ritual and purple dye is known from the Hittite and Ugaritic cultures[643] and a particular shade of blue was reserved for Hebrew priests.[644] The high value attached to purple dye remained consistent throughout Roman and Byzantine times.[645] Purple dye appears to have been produced in many areas of the world,[646] and it is clear that wherever murex-dyed garments are found, they carry social value. This is due to the complex processes in extracting only small amounts of dye, but could in some instances possibly be linked its sea connections as well.

In later prehistory the evidence for murex dye processing in the Aegean grows to the point where it appears to have formed a major industry at some settlements.[647] The majority of examples are likely to have been connected to Minoan palaces. Examples such as at Pacheia Ammos-Pefka and Papadiokampos are likely have been either under control of or in some way affiliated with a nearby palace. Unambiguous instances predating the MBA are difficult to find and the evidence points to small-scale exploitation of pigments. Clear-cut evidence for dyeing, rather than pigment extraction, is only assured at Toumba and Pacheia Ammos-Pefka.

There is a concentration of evidence for murex processing around the Mirabello bay on Crete during the Protopalatial period which appears not to be accidental (Fig. 4.1). Towards the MB–LB transition, murex processing contexts are also found outside Crete, mostly in areas marked by Minoan influence, while the contemporary evidence of production on Crete itself dwindles.

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[641] Around 75% of all identified molluscs at Toumba were murex in the late MBA and around 95% in the early LBA. Veropoulidou 2011a, 386–415.
[642] Strabo. Geography 16.2.23
[643] For example, in a letter to a Hittite King, Anatolian purple dyers were sent to present offerings to a purple dye related goddess shrine on Lesbos (Singer 2008). In a metaphysical link between murex dye and the sea, the Ugaritic goddess Anat-Astarte is closely connected to purple-dyed garments and the sea (Carannante 2014, 278).
[644] Ziderman 2002, 40–41.
[645] Cooksey 2013, 175; Macdonald 2017, 12.
[646] For example in Qatar, Japan, South America, Mexico (Nuttall 1909, 309) and the Caribbean. For a survey of outside Mediterranean purple dye exploitation, see Haubrichs (2005).
[647] See e.g. the recent evidence from Chryssi to the south of Crete (Apostolakou *et al*. 2016).

It might be that places in regular contact with Crete attempted to take advantage of purple dye demand. Another possibility is that Minoan palaces outsourced production to these communities, perhaps involving resident Minoans. An alternative is that Protopalatial exploitation of murex molluscs depleted stocks to such an extent that the previous intensity of murex dye production was no longer viable, leading to the shifting of production to new areas in the Neopalatial period. Given the number of molluscs required for more specialised purple dye production, such as that seen in the Mirabello Bay, temporary over exploitation should not be ruled out. Evidence for the exploitation of murex dye is overwhelmingly coastal, which is expected given the necessity of regular collection in storage and transport for production inland. An outlier here may be Tylissos, though the evidence there is inconclusive and could have been imported inland.

While we can only see the production places of murex dye, its use is an index of the importance of purple or purplish coloured clothes to various communities. Purple dyed clothes could have been be a form of non-verbal communication and a way for individuals and groups to differentiate themselves. The vast sheep stocks of some Minoan palaces likely provided the textiles that were later dyed.[648] It appears that garments made from such textiles were particularly prized at Mycenaean Knossos, where they were attributed a royal status.[649] While it has been argued that their social value was due to the sensory effects of the colour and its scarcity, purple coloured dyes could also be created using non-marine sources, such as vegetal dyes.[650] The preference for murex-dyed garments in elite contexts in Minoan Crete suggests that a greater social value was attributed to purple dye derived from murex shell, and therefore a marine product, rather dye from other terrestrial sources.

4.3 Marine shell object production

As with the production of murex dye, the production of marine shell objects follows a *chaîne opératoire* of acquisition, storage, transformation and consumption. Unlike murex dye production, however, the end products survive archaeologically and less focus has been placed on production. The first steps include the identification of the marine shell species represented, method of manufacture and the stages involved. Research in Aegean prehistory is lagging behind other areas of the world where replication studies and identification of specific production techniques are commonplace and no study has yet

[648] See Bennett (1985, 235) for the presence of several Linear B tablets in the later Mycenaean phase dealing with sheep stocks.
[649] Purple dyed garments "Royal Purple" (*wa-na-ka-te-ro po-pu-re*) are mentioned on Linear B tablet KN X976 from Knossos dated to the 13th century BC.
[650] Gleba *et al*. 2017.

focused on marine shell production places in an Aegean-wide context. Techniques of production can be informed by ethnographic parallels for the use of tools,[651] the manufacture of specific forms of object,[652] and the social context and labour organisation.[653] A problem of perspective has been the under-appreciation of the skills required to transform marine shell into objects and neglected in comparison to ceramic, lithic and metal production.[654]

The processing of marine shell can be archaeologically detectable through the identification of concentrations of marine shell fragments trampled into floor layers or disposed of in refuse pits, especially when concentrated in a specific place or combined with stone tools in workshop contexts. Unfinished examples stored in specific areas can also be indicators of production contexts. Shell object waste was likely removed from workshop areas and so the identification of workshops typically requires destruction layers to preserve the evidence in sealed deposits.

The earliest evidence for marine shell manufacture is dated to the LN period (Appendix 4*:*B). Fragments from an unidentified species were recovered from the floor of a house at Dikili Tash (**B50**) and finished products were also recovered from the settlement. Large amounts of *Spondylus* fragments probably represent manufacturing at Makriyalos (**B140**) and Dimini (**B51**). Fragments of worked *Spondylus* at LN Pigi Athinas (**B214**) may also represent some form of *Spondylus* shell object production, though the evidence is not clear. Worked shells from Saliagos (**B242**) are also an indicator of small scale marine shell object production.

A concentration of waterworn, but unholed cockles were recovered from FN layers beneath the West and Central Court at Knossos (**B114**), where they may have been stored prior to being transformed into pendants. As they were waterworn, they were collected dead and cannot be interpreted as food. Cockles being the most common marine shell body ornaments at LN and FN Knossos further strengthens the notion of pendant production at Knossos in this period. Waterworn *Spondylus* collected at Kephala (**B102**) on Kea may also have been for ornament production, thougt the evidence is not certain.

In the EBA, the processing of shell material is suspected at EH II Merenda (**B157**), where a large quantity of *Spondylus* fragments were recovered. There,

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[651] Strathern 1975, 237–239.

[652] Malinowski (1922, 367–374) outlines *Spondylus* shell bead manufacture in the Trobriand Islands.

[653] See Connell (1977, 93) on shell bead manufacture in the Solomon islands, where there is a labour division in the production of shell beads with women forming the beads out of raw material, while the final finishing of the beads is undertaken by men.

[654] Holmes (1883, 286) highlights the difficulty in working shell in the absence of machinery and modern appliances.

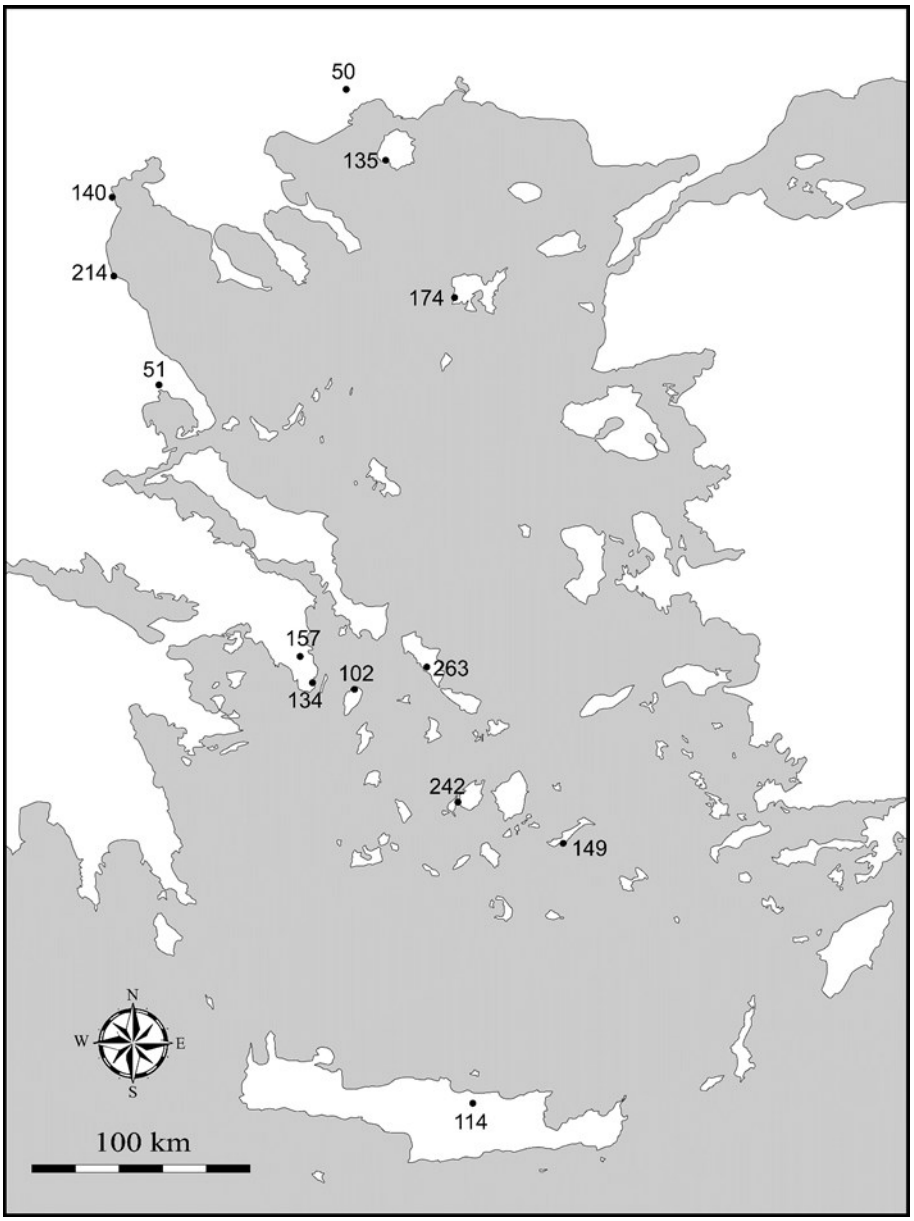

Figure 4.2. Distribution of evidence for shell processing in the study area. The numbers can be matched to those in Table 4.2 and Appendix 4:B.

Table 4.2. Sites where marine shell object production and possible production is attested in the study area. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. Abbreviations: Genus = the biological genus classification of the marine shell debris.

Site	*LCP value*	*Genus*	*Chronology*
S50. Dikili Tash, Macedonia	22193	Unidentified	LN
S51. Dimini, Thessaly	267	Spondylus	LN
S140. Makriyalos, Thessaly	4351	Spondylus	LN
S242. Saliagos, Antiparos	645	Various	LN
S214. Pigi Athinas, Thessaly	2030	Spondylus	LN
S114. Knossos, Crete	9555	Cerastoderma	LN–FN
S263. Strofilas, Andros	796	Unidentified	FN
S102. Kephala, Kea	552	Spondylus	FN
S149. Markiani, Amorgos	4156	Charonia	EC II
S157. Merenda, Attica	6870	Unidentified	EH II
S135. Limenaria, Thasos	550	Unidentified	EB II–III
S174. Myrina, Lemnos	915	Unidentified	EBA
S134. Limani Pasa Lavriou, Attica	494	Unidentified	EBA–MBA

fragments of litharge, copper slag, a clay mould, obsidian and large quantities of marine shell has been interpreted as the contents of a workshop, where perhaps a variety of items were manufactured from different raw materials. At EBA Limani Pasa (**B134**) in the same general region as Merenda, a shell workshop was also suspected though the evidence is inconclusive. There are also instances where marine shell has been found within floor layers. Examples are known from EBA Limenaria (**B135**) on Thasos, Markiani (**B149**) on Amorgos, and Myrina (**B174**) on Lemnos. While not certain indicators of shell object processing, their presence within floor levels may have been a way to recycle the materials and in some cases, may have indicated in situ shell processing. There is no data from the MBA (Table 4.2), which contrasts starkly with the exploitation of murex molluscs on Crete and the southern Aegean in the second half of the MBA. An indirect indicator of marine shell processing may come in the form ceramic production. Shell is a common temper for Aegean pottery and in particular cooking vessels, as calcareous tempers have a low thermal expansion and are well suited for vessels used on a fire.[655] It seems that shell temper is a feature particularly of early MBA ceramic on Crete.[656] Unfortunately, the evidence is not plentiful.

[655] Shell-tempered pottery is more porous and therefore not well suited for boiling food, rather better for cooking solid food. See Bonga (2013, 296) and Urem-Kotsou *et al*. (2002, 112).
[656] Moody 1987, 173, 178.

As can be gleamed from the paucity of examples, marine shell object production places have not been commonly identified (Fig. 4.2). The majority of examples from the study area come from settlements close to the coast. EH II Merenda, LN-FN Knossos and especially LN Dikili Tash stand out as places further inland where marine material was processed. Outside the study area, there is little to add.[657] The lack of evidence is remarkable, given the number of marine shell objects in a range of forms in different areas and periods. It is more perceptible in the LN only to become increasingly rare over time.[658] Several reasons may account for this. LN communities operated in pre-metal economy, where there was a greater emphasis on other raw materials, such as marine shell, to imbue with social value.[659] Marine shell objects, however, were in circulation well after the introduction of metallurgy and production contexts have been identified in EB II. The identification of murex dye processing places also runs counter to the argument that marine shells were not exploited after the introduction of metallurgy. The paucity of marine shell object production places, therefore, can only be read as a blind spot in research and perhaps future research will uncover more evidence of shell processing areas.

4.4 Utilitarian marine shell objects

As marine shell can be transformed into a wide range of forms, it stands to reason that their function or meaning within a social context can vary. Marine shell object production required a certain amount of skill and that, for many utilitarian object forms, there were more readily available alternatives in ceramic, stone or perishable materials. The choice to use marine shell as a raw material must therefore be understood as deliberate. Determining whether marine shell objects should be considered prestige objects is relatively straightforward when their form (such as body ornamentation) or context (such as funerary or cult) allows for it. In instances when the form is more utilitarian (to our eyes) and the context is domestic or mixed, however, it is difficult to determine the social value of such objects. As a result, focus must be placed on the practices involved in their function, where possible. This is not to say that utilitarian marine shell objects lacked value, only that it is not possible to infer meaning beyond form and function.

The utilitarian function of marine shell objects has been considered by some commentators,[660] though Aegean wide studies and analyses of specific

[657] For MM–LM triton processing at Chryssi off the coast of Crete, see Mylona (2020, 191).
[658] Karali 1999.
[659] Halstead 1993, 608.
[660] Reese *forthcoming*; Karali 1999.

Table 4.3. Utilitarian objects made from marine shell of a Neolithic date. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Pestle*	*Utensil*	*Scraper*	*Container*	*Chronology*
S51. Dimini, Thessaly	267				X	LN
S242. Saliagos, Antiparos	645		X	X		LN
S114. Knossos, Crete	9555			X		FN

artefact types are lacking. Their production is likely to have had different priorities than prestige items made from the same material. Prestige items are intended for display, whereas utilitarian objects have a greater concern for efficiency and suitability to specific tasks. Utilitarian marine shell objects tend to be exchanged locally in ethnographic parallels, while prestige goods travel over longer distances and communicate specific identity or status.[661] While the former tend to be used and discarded, the latter acquire histories and can be deposited or destroyed as a means of conspicuous consumption.[662]

The following focuses on marine shell objects were a utilitarian purpose is suspected (Appendix 4:CA–CB). They include utensils, containers and tools. Utensils could be used to cook, serve and eat food, or in the processing of other organic matter. Containers can be identified by being worked and utilising the cavities of a marine shell for containing liquids and pigments. Marine shells used as tools are comparatively rare, though includes forms such as ceramic smoothers and shell scrapers.

At LN Saliagos (**CA242**) marine invertebrates were used as utensils and scrapers (Table 4.3). Primarily limpets and mussels, but also other varieties, were often ground down on the lip, which suggests that they were used as spoons or scrapers.[663] Similarly there is possible evidence of the use of dog cockles as scrapers at Knossos (**CA114**).

In the Bronze Age, there was a shift towards the use of *Spondylus* for utensils (Table 4.4).[664] The most common type is the modification of *Spondylus*

[661] Hirth 1992.
[662] Hayden 1998, 13–14.
[663] Shackleton 1968, 127. Contemporary worked mussels are known from Paradeisos in Thrace (Reese 1987b, 119–134).
[664] Unprovenanced examples are unfortunately numerous. An EB pestle listed as from "Aegina" is made from *Spondylus*, though was originally listed as made from stone (Walter & Felten 1981, 179; Reese *forthcoming*). Three EB pestles said to be from the Keros hoard are actually made of *Spondylus* (Thimme 1977, 548; Reese *forthcoming*). A pestle listed as from Naxos was published as being in limestone but is *Spondylus* (Reese *forthcoming*). An example in the National Museum in Athens is also of spondylus but has no provenance (Reese *forthcoming*). Finally, a *Spondylus* pestle was recovered from the gymnasium excavations at Corinth, though is

Table 4.4. Utilitarian objects made from marine shell of an EBA date. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Pestle*	*Utensil*	*Scraper*	*Container*	*Chronology*
S208. Petras-Kephala, Crete	979		X	X	X	EM I
S57. Emporio, Chios	1556	X				EB II
S94. Kastri, Thasos	17181	X			X	EB II
S226. Proskynas, Phthiotis	2628			X		EH IIA
C55. Chalandriani, Syros	3836	X		X	X	EC IIA
S133. Lerna, Argolid	552	X				EH IIB
S2. Agia Irini, Kea	786	X			X	EC IIB
C203. Trapeza Cave, Crete	80776	X	X			EM II–III
S12. Agios Kosmas, Attica	769	X				EH III
S149. Markiani, Amorgos	4156			X		EBA
S269. Thermi, Lesbos	631	X				EBA
C161. Panagia, Paros	6748				X	EBA
C25. Akrotiraki, Siphnos	4150				X	EBA

Table 4.5. Utilitarian objects made from marine shell of an MBA–LBA date. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. * denotes possibility that the material postdates the study.

Site	*LCP value*	*Pestle*	*Utensil*	*Scraper*	*Container*	*Chronology*
S91. Kastraki Almyrou, Thessaly	10401			X		MH I
S2. Agia Irini, Kea	786				X	MC early
S208. Petras Hill 1, Crete	970			X		MM II–LM III*
S276. Toumba, Macedonia	3042		X			MBA–LBA
S230. Pseira, Crete	801				X	LM IA
S166. Mochlos, Crete	462		X			LM IA
S189. Palaikastro, Crete	415		X		X	LM IA

undated but given the chronological focus on *Spondylus* pestles in the EBA, is likely to have an Early Helladic date (Reese *forthcoming*).

shells to pestles. Examples are known from Tomb 307 at Chalandriani (**CB55.3**),[665] and EBA Poliochni (**CA219**), originally published as of alabaster.[666] Three were recovered from EC IIB Agia Irini (**CA2.1**), one was noted at EH IIB Lerna (**CA133.1**), one from Kastri-Theologos (**CA94.1**) on Thasos and a further example from EB II Emporio (**CA57**). An example published originally as stone may be *Spondylus* from EH III Agios Kosmas (**CA12**), with a similar example from Thermi (**CA269**).[667] The function of these forms has been debated and identified as either pestles or mace-heads.[668] Mace-heads appear unlikely as the objects are not large enough to be an offensive weapon and so an interpretation as a pestle is preferred here. These pestles could have been used for grinding of food, condiments or pigments. The concentration of *Spondylus* pestles in the EBA requires further elaboration. The majority come from coastal settlements, where the object may have been collected and transformed, however, examples from Kastri on Thasos and from the Trapeza cave on Crete are not beside the coast and indicate the social value of these objects beyond a coastal setting. That some were buried with the dead (Trapeza cave and Chalandriani) may also indicate that they could be imbued with social meaning beyond a domestic context.

There is evidence that shells on occasion may have been used as scrapers, with examples from LN Saliagos (**CA242.9**), EC II Markiani (**CA149**), EH IIA Proskynas (**CA226**) and MH I Kastraki Almyrou (**CA91**). The examples from Proskynas were made from *Spondylus* and some were considerably worn around the edges. There was a strong focus in the use of *Spondylus* as tools at this site, as they were found in buildings, in pits and scattered in fills across the site, despite the settlement being around 2.5km from the coast (LCP:2628).[669] The use of marine shells rather than obsidian or flint as scrapers is a specific choice. They could be used for the scraping of hides or woodworking, but also for smoothing or burnishing of ceramics during the forming phase.[670]

Another major object category is marine shell containers. A hollow triton was recovered from FN–EM I Petras Kephala (**CA208.2**), which could have functioned as a drinking vessel. Another example comes from Tomb 142 at Akrotiraki on Siphnos (**CB24**), where a scallop shell contained blue pigment. Another Cycladic example, from Tomb 21 at Panagia (**CB161**) on Paros, includes a triton worked into a vessel and a further example comes from Kastri-

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[665] Karali 1999, 40.
[666] Bernabo-Brea 1964, 670–671; Reese *forthcoming*.
[667] Agios Kosmas original reference: Mylonas 1959, 134. Thermi original reference: Lamb 1932, 50; See Reese (*forthcoming*) for reinterpretation.
[668] See Karali (1999, 21–22) for the mace-head interpretation.
[669] Veropoulidou 2011b, 7–8.
[670] Veropoulidou 2011b, 8.

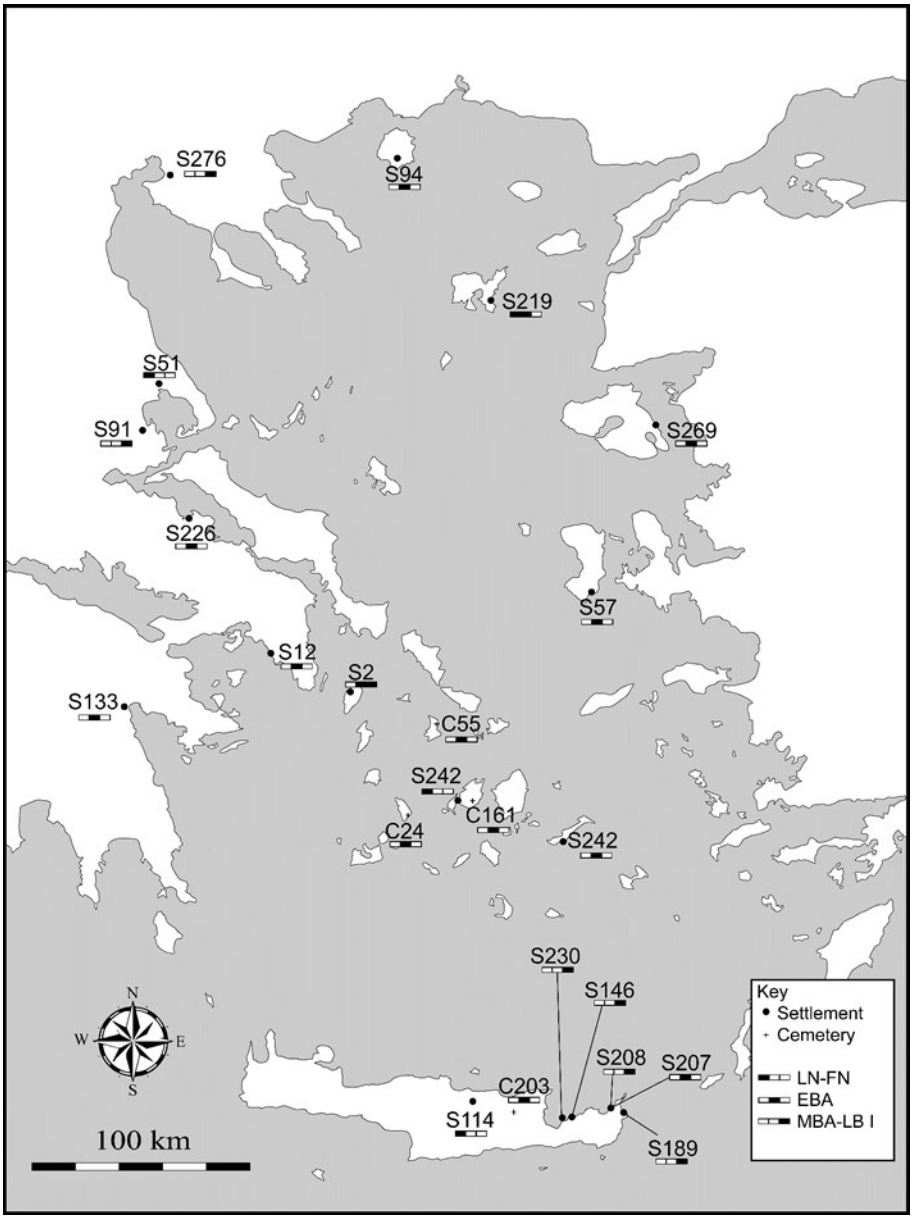

Figure 4.3. Distribution of marine-shell utilitarian objects in the study area. The numbers can be matched to those in Tables 4.3–5 and Appendix 4:CA–CB.

Theologos (**CA94**.**2**) on Thasos. The combination of scallop shells, bronze implements, marble containers and sometimes coloured pigment is a common feature of tombs at EC IIA Chalandriani (**CB55**.**1**–**2**, **4**–**6**) and probably represent the use of shells for storage of a valuable implements or pigments. Several examples of such container shells were recovered from EC IIB Agia Irini (**CA2**.**2**), where both cockles and *Spondylus* shells were converted into containers. Later examples (Table 4.5) are known from MC I–II House E (**CA2**.**3**–**5**). A chronological exception is a triton shell container from LM I Mochlos (**CA166**).[671] While the triton examples are sometimes considered objects of ritual paraphernalia (Chapter 4.5), their contexts and functions do not often support this identification. The variety of marine shells utilised (triton, *Spondylus*, scallop) indicate that this was not a specific choice of species with a deeper meaning, rather the utilisation of available and applicable types for functionality.

The usage of utilitarian marine shell objects peaked in the FN–EBA and fell out of use later. Their use as scrapers, spoons, pestles and containers represent the choice to transform locally available raw materials, which in some instances may have been convenient, though this is not necessarily the case in all examples. Their numbers are few, especially in comparison to stone tools, suggesting that their production and consumption was restricted and only occurred in specific places and periods. Utilitarian marine shell objects do have some advantages over other varieties of raw material. Marine shell containers could be small enough to be convenient to carry as an item of toilet kit, as well as light enough to be transportable and may have been preferred by individuals that travelled, such as seafarers. Fresh marine shell can be surprisingly hard and can be a useful alternative to stone tools in the absence of locally available lithic sources.[672] The choice to use marine shell, however, may have been a choice more based on cognitive associations of the raw material. The contrast between the white shell containers and colour pigments might have indicated a desire to stand out visually in the EC period, something already highlighted in other artefact forms.[673] In a similar fashion, the choice to use marine shell pestles in the EBA is a conscious choice, as ceramic or stone alternatives would have been available. Given the ritual associations of some marine shells in MBA Crete (Chapter 4.5), this choice could have been due to the symbolic power of marine shell within the context of food preparation, perhaps even in a ritual context.

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[671] Soles & Davaras 1992, 429.
[672] However, marble sources are known from Naxos, Keros, Ios, Syros, Nikouria, Schinoussa and Irakleia in the Cyclades, Skyros, Thasos, Ikaria and Samos in the north and east Aegean, as well as Mt. Penteli and Mt. Hymettos in Attica. All visible marble sources recently surveyed do not bear traces of prehistoric quarrying, so it is not clear which were used in prehistory (Tambakopoulos & Maniatis 2012, 298).
[673] Broodbank 2000, 248–249.

4.5 Marine shell objects in ritual orchestration

Certain marine shells have carried a cultic or symbolic meaning in a variety of cultures and the Aegean is no exception. In the Aegean, the cultic use of marine shells typically centres on the use of triton shells in ritual and funerary contexts, though comes in other forms as well, such as marine shell figurines, painted seashells and occasionally, marine-derived votives. These forms of evidence have been treated by some commentators,[674] though rarely with commentary on the bodily performance of a range of cultic practices and why specifically marine shell objects were chosen for these practices.[675] When analyses do consider these issues, the focus is placed on restricted assemblages of material, or solely on specific regions and periods. In some instances, marine shell objects are omitted entirely.[676]

The initial difficulty lies in determining the cultic association of marine shell objects. Triton shells, for example, have become embroiled in a form of circular reasoning where their presence is taken to be enough to indicate a cultic function, though conversely they can be found in quotidian contexts.[677] They have been subject to previous research, though analysis focused less on their specific contexts and role in cult.[678] Their presence in an archaeological context should not be used uncritically to infer a cultic of a space in the absence of associated installations and artefacts.[679] Determining a universally accepted definition of what constitutes a cultic context has proved problematic.[680] The definition followed here is that of presence of "attention focusing devices" and "special contexts", such as open areas, benches or platforms, while items of material culture can be attention focusing devices.[681] It is not the goal here to rewrite the methodological framework for identifying cultic or ritual places, nor to analyse the separation between the mundane and the profane in the ancient world,[682] rather the goal is to identify places of potential special significance through the material paraphernalia associated with them.

The choice of the term 'ritual orchestration' (attention focusing devices) denotes something specific. This signifies the role of these marine shell objects as focal points in the performance of cult practice, rather than as food

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[674] Vandenabeele 1991.
[675] An exception is Saunders (2008) who provides a holistic account of triton shells in Minoan religion.
[676] For example in D'Agata *et al*. 2009.
[677] Saunders 2008, 145.
[678] Reese & Åstrom 1990; Karali 1999.
[679] Saunders 2008, 297.
[680] Kyriakidis 2007b, 9–22; Renfrew 1985, 11–26; Insoll 2011, 1; Bell 1992.
[681] Darcque & van de Moortel 2009, 39; Renfrew 1985, 18.
[682] Darcque & van de Moortel 2009, 32.

Table 4.6. Special use of marine shell objects from cultic or possible cultic contexts, Neolithic to EBA. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. Abbreviations: Special = the use of other forms of marine shell material in a way that might be interpreted as special; Certainty = the degree of certainty of cultic use.

Site	*LCP value*	*Figurine*	*Triton*	*Special*	*Certainty*	*Chronology*
C11. Agios Charalambos, Crete	82527	X			Yes	LN–MM II
S114. Knossos, Crete	9555	X			No	FN
C142. Messorachi Skopi, Crete	17401		X		No	EM I
C107. Lakkoudhes, Naxos	4001		X	X	No	EC I
C55. Chalandriani, Syros	3836		X	X	No	EC IIA
C74. Gournia Sphougaras, Crete	1514		X		No	EM II
S144. Manika, Euboia	837			X	No	EH II
C196. Spedos, Naxos	550	X			Yes	EC II
S2. Agia Irini, Kea	786	X			No	EC IIB
C159. Palaikastro ta Ellinika, Crete	784		X		No	EM IIB
C203. Trapeza Cave, Crete	80776	X			Yes	EM II–III
S49.Dhaskalio-Kavos, Keros	1423	X			Yes	EC III
C161. Panagia, Paros	6748		X		Yes	EBA
C146. Mochlos, Crete	462	X			No	EBA
C7. Agioi Anargyrioi, Naxos	14168		X		No	EBA
C72. Gournes, Crete	1139		X		No	EBA

consumed. This includes items that are likely to have been used in these places, such as figurines. Due to the difficulty in pinpointing secure cult contexts, objects of a possible cultic significance are also included where excavation has encountered mixed assemblages or finds out of context, though have an established link to cult practice. The lack of evidence for pre MBA cultic activity in settlements may indicate a focus of cult in funerary places, an interpretation which is borne out through the widespread use of tombs as the focus for communal activity in Prepalatial Crete,[683] while the presence of platforms and paved areas at some EC cemeteries may indicate the focus of cult in the funerary sphere of the Cyclades too.[684] We are left in the dark for the Greek mainland communities, where cultic activity has rarely been securely documented prior to the Mycenaean period and it seems plausible also,

[683] Branigan 1993, 127–136; Marinatos 1993, 13–15.
[684] Doumas 1987b, 18.

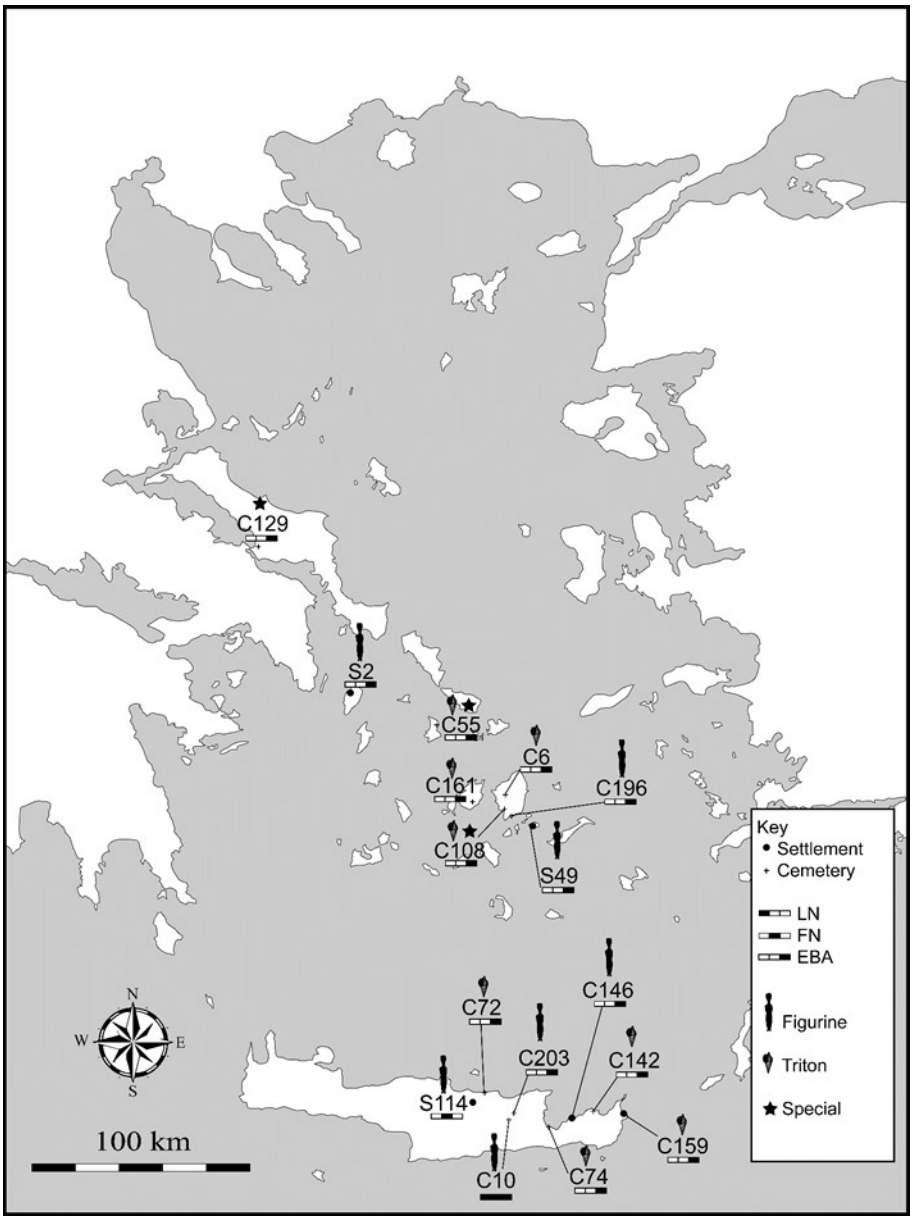

Figure 4.4. Distribution of marine shell in ritual orchestration evidence from LN–EBA. The numbers can be matched to those in Tables 4.6 and Appendix 4:DA–DB.

that tombs and *tumuli* could have been the focus of mainland cult prior to the LBA.[685]

The earliest evidence from the study area (Table 4.6, Appendix 4:DA–DB) comes from beneath the Central Court at FN Knossos (**DA114**.**1**), where *Spondylus* shell was worked into a "T" shaped object, potentially a figurine.[686] Triton shell fragments recovered from the EM I *tholos* at Messorachi Skopi (**DB142**) on Crete may have been part of special practices, though the evidence is difficult to determine from context. An apical triton fragment was recovered from the EC I Lakkoudhes cemetery on Naxos (**DB107**.**2**),[687] which may have been used in funerary cult connected to a central platform at the cemetery.[688] In EB II, the evidence increases. A winged or phallic object made from *Spondylus* reported from Emporio (**DA57**) might be some form of figurine or pendant.[689] Triton shells were recovered from Gournia Sphougaras (**DB74**), Gournes (**DB72**), Chalandriani (**DB55**.**1**) and Agioi Anargyroi (**DB7**) marking the beginning of a recurring presence in funerary contexts. Not all examples were modified and therefore it is not certain that all were used for ritual orchestration. Their presence in these places, however, implies a special significance which, in light of the later cultic function of triton shells, is hard not to read here as well. Perhaps at this early stage, triton shells had in some way become associated with special practices. Further evidence can also be found in the recovery of two schematic Spondylus figurines from Grave 16 at Spedos (**DB196**) on Naxos.[690] A scallop placed atop a frying pan in the niche of Tomb 351 at EC IIA Chalandiani (**DB55**.**2**) may be evidence of a meaningful placement of the shell and the frying pan also carried a representation of a boat. In a similar manner, seashells adorned the body in at least two tombs at Manika (**DB129**), while in a third space they were argued to have been associated with cult worship of the dead.[691] A Spondylus figurine recovered from the Agios Charalambos burial cave (**DB11**) likely

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[685] Ritual activity may have taken place around tumuli in the late EBA (Weiberg 2007, 183–185) and this appears to continue into the MH (Whittaker 2010, 98).

[686] A probable Neolithic anthropomorphic figurine in *Spondylus* comes from Aegina, probably Kolonna, see Karali 1999, 41, fig. 31C. Another probable Neolithic example in *Spondylus* is housed in the Ashmolean museum, Oxford, listed as from Central Crete. Most likely from Knossos, see Evans 1921, 48. For a discussion of *Spondylus* objects in the Aegean, see Reese *forthcoming*.

[687] A large tun shell from Tomb 11 at the same cemetery may also have been an object of ritual orchestration, given its size.

[688] Doumas 1987b, 18.

[689] Hood 1982, 675–676, pl. 142:58.

[690] The looting of Early Cycladic tombs has led to several examples being unprovenanced in museum collections, such as the two *Spondylus* anthropomorphic figurines listed as from "Amorgos" (Reese *forthcoming*).

[691] *ArchDelt* 42 (1987): B2, 206.

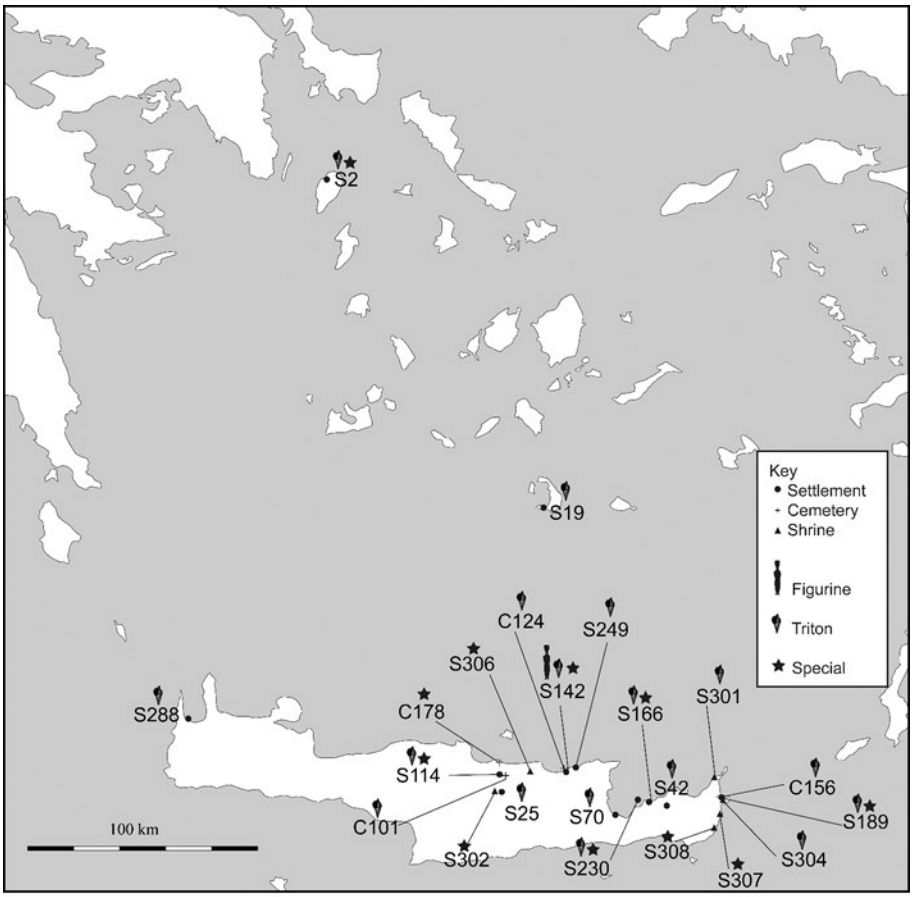

Figure 4.5. Distribution of marine shell in ritual orchestration evidence from MB I–LB I. The numbers can be matched to those in Table 4.7 and Appendix 4:DA–DB.

dates to the period of initial burial, between LN–EM III, rather than the MBA cultic use of the cave.

Further evidence comes from the latter periods of the EBA (Fig. 4.4). A bird figurine made from *Spondylus* was reported from EC IIB Agia Irini (**DA2**.**1**), while at Dhaskalio (**DA49**), the head, neck and upper part of a schematic Cycladic figurine was found, carved from a triton shell. An EM figurine collected in surface cleaning from the area of the Mochlos cemetery (**DB146**) may be of *Spondylus* rather than marble and likely comes from one of the nearby tombs.[692] Further examples of triton shells from tombs are known from Gournia Sphougaras (**DB74**) and Palaikastro Ta Ellinika (**DB159**), while two anthropomorphic figurines (**DB209**), along with a shell pestle and spool, were

[692] Seager 1912, 80; Reese *forthcoming*.

recovered in the Trapeza burial cave (**CB203**), though it is not clear if they were burial offerings or remnants of cave cult.[693] Worthy of remark is that mainland contexts are almost entirely absent, represented only by the quasi mainland settlement of Manika on Euboia.

The most clearly defined special contexts become apparent on Crete from the beginning of the MBA onwards (Table 4.7). In the oval house at MM IA Chamaizi (**DA42**), cult paraphernalia, consisting of an offering table, double axes and figurines (zoo and anthropomorphic) were found with a triton shell, which could lead to the interpretation of a domestic shrine.[694] The presence of triton shells inside tombs becomes rarer at the end of the EBA, though examples are known from the Malia Maison des Morts (**DB124**) and Palaikastro Gravel Ridge (**DB156**) cemeteries. At the Malia Maison des Morts, the triton shell was found with a clay-offering table stamped with a double axe, indicating a potential use in funerary cult.

Marine shell cult objects are concentrated at settlements during the Protopalatial period. For example, a foundation deposit at Mochlos (**DA166**.**1**) included a worked triton. Several examples of shell inlays for box decoration were reported from Knossos (**DA114**.**2**), Malia (**DA142**.**1**, **6**) and Palaikastro (**DA189**.**3**). The examples at Knossos and Malia were found in association with cult paraphernalia, such as figurines and double axes, indicating their role in ritual. The examples from Palaikastro had been placed in a small cist or closet feature, either a storage feature for cult paraphernalia or a foundation deposit. At Malia, there were other examples of marine remains in ritual orchestration, such as two votive limbs, made from coral, found with figurines (**DA142**.**2**), while a room with benches in the Independent Bench Sanctuary Complex (**DA142**.**4**) contained a triton shell, likely part of pouring rituals in the shrine. A further contemporary example comes in the form of an anthropomorphic figurine made of *Spondylus* (**DA142**.**5**) from Quartier Mu.[695] Places of special importance containing objects of marine shell were thus dotted across the settlement, indicating that ritual practices involving such object were relatively common.

While the funerary use of tritons on Crete becomes less common after the start of the Protopalatial period, other types of marine shells are sporadically found in funerary contexts. Fragments of at least two triton shells were recovered from the *dromos* of a *tholos* tomb at MM III Poros-Katsambas (**DB178**), with other marine shells. One of the shells, a fossilised heart cockle (*Isocardia*) was

[693] Pendlebury 1935–6, 120, 122, 127; Money-Coutts 1935–6, 124, 126.
[694] Davaras 1972, 283–288; Gesell 1985, 14, 83; Åström & Reese 1990, 8.
[695] Two further small figurines from Quartier Mu may be *Spondylus* (Reese *forthcoming*).

Table 4.7. Special use of marine shell objects from cultic or possible cultic contexts, MB I–LB I. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. Abbreviations: Special = the use of other forms of marine shell material in a way that might be interpreted as special; Certainty = the degree of certainty of cultic use. ▲ = peak sanctuary.

Site	*LCP value*	*Figurine*	*Triton*	*Special*	*Certainty*	*Chronology*
C124. Malia Maison des Morts, Crete	565		X		Yes	MM IA
S42. Chamaizi, Crete	35458		X		Yes	MM IA
C156. Palaikastro Gravel Ridge, Crete	415		X		No	MM IA–B
S301. Kalamaki▲, Crete	N/A		X		Yes	MM I–IIB
S308. Viglia▲, Crete	N/A			X	No	MM I–IIB
S114. Knossos, Crete	9555		X	X	Yes	MM IB–LM IA
S142. Malia, Crete	803	X	X	X	Yes	MM I–LM I
S304. Petsophas▲, Crete	N/A		X		Yes	MM I–LM I
S306. Skoteino Cave, Crete	N/A			X	Yes	MM I–LM I
S307. Traostalos▲, Crete	N/A			X	Yes	MM I–LM I
S302. Mt. Juktas▲, Crete	N/A			X	Yes	MM I–LM III*
S189. Palaikastro, Crete	415		X	X	No	MM II–LM I
S166. Mochlos, Crete	462		X	X	Yes	MM IIB–III
C101. Knossos Mavrospelio, Crete	9344		X		No	MM II–III
S288. Viglia-Kissamou, Crete	608		X		Yes	MBA
C178. Poros-Katsambas, Crete	1635			X	No	MM III–LM I
S19. Akrotiri, Thera	1966		X		Yes	LC IA
S249. Sissi, Crete	726		X		No	LM IA
S2. Agia Irini, Kea	786		X	X	Yes	LC I
S70. Gournia, Crete	1653		X		Yes	LM I
S25. Archanes, Crete	33525		X		Yes	LM IA–B*
S230. Pseira, Crete	801		X	X	Yes	LM IA–B*

decorated with red paint. A solitary example of a "conch" shell reported from Knossos Mavrospelio (**DB101**), is likely to have been a large murex shell.[696]

Cretan extra-urban cult at peak sanctuaries and caves also made use of marine shell objects.[697] Triton shells found their way to the Kalamaki (**DA301**), Viglia (**DA308**) and Petsophas (**DA304**) peak sanctuaries, but it is unknown if they were fashioned into objects. Other forms of marine shells have also been reported from the Mt. Juktas (**DA302**) and Traostalos (**DA307**) peak

[696] Forsdyke 1926–7, 264. Identification as murex suggested by Reese, *pers. comm.*
[697] For example, they are known outside of the study area from Kato Syme and the Idean Cave (Saunders 2008, 145).

sanctuaries, though again a lack of contextual information hinders interpretation. Another example comes from the Skoteino cave (**DA306**), where a painted seashell and several unpainted examples were recovered.

Towards the end of the MBA, the evidence increases and is overwhelmingly focused on Crete, but found also in areas under Minoan influence (Fig. 4.5). At Neopalatial Malia, there is evidence of three triton shells and red painted murex and cockles from the South Bench Sanctuary Complex (**DA142**.**3**). Other cult paraphernalia and benches were noted in the shrine and the tritons had broken tips, indicating their usage as libation vessels. The same type of evidence is noted from the Temple Repositories at contemporary Knossos (**DA114**.**3**), where over 6000 shells were recovered, around 10% painted red. Many were pierced, likely for suspension, and had been placed along the east side of the Temple Repositories together with faience objects and other cult paraphernalia. A triton shell (**DA114**.**4**) was also recovered from close to the Magazine of the Lily Vases at the same settlement, where it was found in an area with platforms, which was interpreted as a shrine.[698]

Additional examples of tritons found in association with cult paraphernalia in shrines include Pseira (**DA230**.**2**–**3**), Palaikastro (**DA189**.**1**–**2**), Gournia (**DA70**) and the Knossos Gypsades hill (**DA114**.**6**) shrine. They are also present in foundation deposits, such as at Palaikastro (**DA189**.**3**) and Sissi (**DA249**). A range of important contextual evidence can be gleamed from Archanes (**DA25**), c.10km inland (LCP*:*33525). In the palace, a large triton shell was found near a large stone vase, close to a depression channel in the floor, where it likely served in libation rituals. Near a stepped altar in Courtyard II, another triton shell occurred close to a drain together with handless cups, possibly used in drinking cult.[699]

Marine shells (triton and tun shells) were recovered from two foundation deposits at Sissi (**DA249**.**1**) and Pseira (**DA230**.**1**) containing tephra from the Thera eruption. A cowrie shell recovered from inside of a conical cup at Mochlos (**DA166**.**2**) may be associated with a drinking ritual as cowries are not commonly food. At Viglia-Kissamou (**DA288**), a triton shell was found atop a bench, along with four *rhyta* and may relate to cult activity.

Outside Crete, several examples are known from cult contexts at contemporary Agia Irini (**DA2**.**2**–**3**) and Akrotiri (**DA19**). At the latter place, two examples come from Xeste 3 which contained multiple frescoes. The building had a special significance connected to elaborately decorated pictoral scenes, which formed the backdrop to special practices which are likely to have involved triton shells. At Agia Irini (**DA2**.**4**), a lump of coral may have been a manuport or a votive. The almost complete absence of triton shell objects on

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[698] Evans 1921, 221, 580–581.

[699] Similar evidence from Zakros (Platon 1985, 182) where a triton shell was found in the NE lustral basin, used in libation ceremonies, probably dates to LM IB.

the mainland is remarkable, suggesting that this was a purely Minoan association. A tun shell found in Grave 18 at LH I Prosymna (**DB180**) may have held some form of special significance, though a cultic function is not certain.

While the use of marine shell objects in cultic or possible cultic contexts centres on coastal sites, occasionally they can be found in a less coastal location. Figurines made from marine shell from the Agios Charalambos and Trapeza caves are an indicator that they were significant enough to be transported inland and their social value may have increased at these places. Such objects may have been circulated for some time, accumulating an object history. In any case, it is clear that these were not a quick and conventient raw material available locally. In a similar fashion, while tritons were predominantly found at coastal settlements (Table 4.7), the triton shells at Chamaizi and Archanes had been transported a considerable way before use and deposition and are indicator of the cultic significance of triton shells beyond a coastal setting.

Determining the meaning of marine shells in special contexts in the Aegean is fraught with difficulties. Marine shells have been associated with a range of concepts in different cultures, such as water, fertility, death and the underworld.[700] The physical properties of specific marine shells have been connected to a variety of meanings, for example the white shell as symbolic of peace, fertility, ritual purity or protection.[701] Other physical features of marine shells have been noted, such as lustre or shape.[702] Most important are the features that we can observe, such as contextual usage. Little unfortunately can be said for the presence of marine shell objects in tombs. Most were probably used for body ornamentation (Chapter 4.6). The sporadic presence, however, of large triton shells in tombs may indicate a role in ritual orchestration. The absence of burn marks and presence of waterwear on some shells indicate that these were not consumed as food and should rather be considered as offerings or objects used in funerary rites. Marine shell figurines are found in both tomb and settlement contexts so it is also difficult to read any deeper meaning about their significance. In any case, they are generally rare and may have been carved out of shell when access to marble was restricted, due to its resemblance.

Triton shells, in particular, have been found in foundation deposits on Crete, where holes or pits were dug into building floors, sometimes lined with stone slabs to form a cist.[703] Other items deposited alongside triton shells are rarely listed (for example at Mochlos and Palaikastro) and the interpretation

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[700] Claasen 1998, 203–209; Trubitt 2003, 262.
[701] Pietak 1998; Thomas 1996; Claasen 1998, 205–206; Trubitt 2003, 262.
[702] The reflective properties of the shell were linked to spirituality and the supernatural by some Native American cultures (Saunders 1999).
[703] The practice of digging foundation deposits is generally undertaken in order to safeguard the building against damage, both physical and metaphysical. See Wagner 2014.

of a foundation deposit usually rests on the sole presence of triton shells. In two cases, LM IA foundation deposits contained either triton or tun shells (Pseira and Sissi) and significant quantities of volcanic tephra, indicating that there was some form of ritualisation following the Thera eruption. This may have come in the form of propitiatory votives, in an attempt to make sense of the chaotic aftermath of the eruption. In both cases no further objects were deposited and so it may be that triton and other large shells held a specific meaning as protective or cleansing objects.

The most secure evidence of marine shell objects in cultic contexts comes from shrines, including domestic, palatial and extra-urban instances. Comment can be made about the presence of a relatively small number of painted shells from Aegean contexts. Painted predominantly in red, these examples may have had some special significance, with the colour likely to indicate a specific meaning.[704] The colour red has a variety of messages ethnographically, ranging from blood,[705] danger,[706] aggression and power.[707] The choice to use marine shell, typically white in colour, could serve to highlight the contrast between the colours and help the red colour stand out during ritual orchestration acts.

The discussion of triton shells comes with a certain baggage which is not only based on Aegean prehistoric examples, as variably triton shells have been associated with blowing horns, transfer vessels, libation vessels or taken to represent food consumption.[708] They were a part of the first cultic contexts excavated on Crete,[709] and their significance is evident in their imitation in other materials (Chapter 5.5.2) and in iconographic evidence. Not all examples were modified. Unworked examples have been proven to serve as effective pouring or libation objects, while those with apexes removed were likely trumpets.[710] It appears that most comparable examples in ethnographic literature functioned as trumpets,[711] though the presence of Aegean examples in association with vessels, drinking cups or drains implies a use in libation or drinking ceremonies, such as at Archanes. It is possible that there were subtle differences in various places in their usage.

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[704] Gell 1999, 165.
[705] Scarre 2002, 229.
[706] Pinch 2001.
[707] Turner 1967, 70–71.
[708] Trumpets: Karali 1999, 21, 23–24; Montagu 1981, 273–279; Younger 1998; libation vessels: Saunders 2008, 166–173.
[709] Evans 1921, 219–221.
[710] Saunders 2008, 148.
[711] To list only a few examples, shell trumpets were used by Hindu priests to serve as a call to the commencement of ritual rites (Hornell 1914, 124), while in the Society Islands of the Pacific, they were blown in ritual processions (Jackson 1916, 16). In Central Mexico, triton shell trumpets were part of ritual paraphernalia (Novella 1995, 46–47).

The inclusion of triton shells in burial contexts seems to correlate closely with the period EM I–MM I, after which they more commonly occur outside funerary contexts.[712] Their reoccurring presence in shrines indicate that triton shells were a part of a commonly recognized repertoire of Minoan cult paraphernalia.[713] It may be the case that they could have been used in the worship of a specific deity, perhaps one connected to the sea, if their overwhelmingly coastal distribution is an indicator.

4.6 Marine shell ornaments as body ornamentation

Marine shell body ornaments carry a range of meanings and significance ethnographically[714] and could have been part of individual or group identity, status and gender.[715] They also appear in a variety of archaeological contexts. In tombs, marine shell objects were incorporated into the corporeal identity of the body in death, suggesting that they could play a significant role in the presentation of the dead. As objects of display, they could have been worn in social contexts to communicate wealth and status, though may also have signified meanings similar to marine objects in cultic contexts, such as protection or fertility.[716]

The use of marine shell ornaments can be distant from where they were produced and a consideration of inter-site networks of interaction is important.[717] Marine shell may have been obtained directly by the community where the object was deposited, or exchanged with intermediaries.[718] Different species of marine shell were converted into beads, pendants and necklaces with the common feature being the working of a hole into the shell to allow it to be suspended from a string. Another category, though rarer, are the unstringed forms such as bracelets and rings, which require significantly more investment in time and skill to produce. A final category included here are marine shells termed manuports, marine shells collected dead from the beach which were not worked. While these shells may not have been worn, they were

[712] Wilson 2008, 91–93.
[713] Saunders 2008, 147.
[714] For example as grave goods, as payments and gifts (Ceci 1982; Erickson 1990).
[715] Thomas 1996, 29; Hill 1998; Winters 1968, 208–209.
[716] Pietak 1998; Thomas 1996; Claasen 1998, 205–206; Trubitt 2003, 262.
[717] Trubitt 2003, 258. For example Indo-Pacific shells at sites in Mediterranean and Northern Europe (Reese 1991).
[718] For a discussion of the problems of assuming coastal trade for marine shell objects inland, see Hughes 1994.

Table 4.8. Marine shell used as body ornamentation from Neolithic contexts. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Pendants*	*Necklaces*	*Rings*	*Other*	*Chronology*
S50. Dikili Tash, Macedonia	22193	X	X	X	X	LN
S51. Dimini, Thessaly	267	X		X	X	LN
S126. Kryoneri, Macedonia	3084	X			X	LN
S157. Merenda, Attica	6870	X				LN
S182. Olynthos, Macedonia	2011	X				LN
S194. Palioskala, Thessaly	21322	X		X	X	LN
S242. Saliagos, Antiparos	645	X			X	LN
S246. Sesklo, Thessaly	9360	X				LN
S290. Volos, Thessaly	277	X				LN–FN
S114. Knossos, Crete	9555	X		X		LN–FN
S263. Strofilas, Andros	796			X	X	FN
S163. Mikrothives, Thessaly	4577	X			X	FN
C103. Korinos, Macedonia	3432		X			FN
C200. Tharrounia, Euboia	64935	X			X	FN

collected purely for aesthetic reasons as waterworn marine shells are not indicators of food consumption and may have served as talismans.

A deposit of 35 pierced cockle shells recovered from LN Dikili Tash (**EA50**), was part of a necklace or more likely a cache of pendants. A range of other examples from the site are known also.[719] Common in the LN is the use of *Spondylus* shells in body ornamentation.[720] Several broken *Spondylus* rings were found at Dimini (**EA51**), with concentrations in House N and Space G.[721] These have been interpreted as evidence for consumption, accumulation and destruction by specific households in conspicuous consumption.[722] Worked *Spondylus* rings and beads are also known from Palioskala (**EA194**) and *Spondylus* beads were recovered from Mikrothives (**EA163**). *Spondylus* bracelets were reported from Olynthos (**EA182**), Merenda (**EA157**) and Kryoneri (**EA126**), together with other *Spondylus* items. *Spondylus* is also found considerably further inland than the catchment area of this study.[723] At Sesklo

[719] Deshayes 1970, 161–172. Other examples from the site included four pierced clams, as well as a dog whelk and cone shell Karali 1999, 34.
[720] Ifantidis & Nikolaidou 2011; Chapman & Gaydarska 2014, 1–15; Shackleton & Elderfield 1990, 312–315.
[721] Tsuneki 1989, 1–21.
[722] Halstead 1993.
[723] For example at Paradeisos, c. 30km inland (Reese 1987b, 119–134).

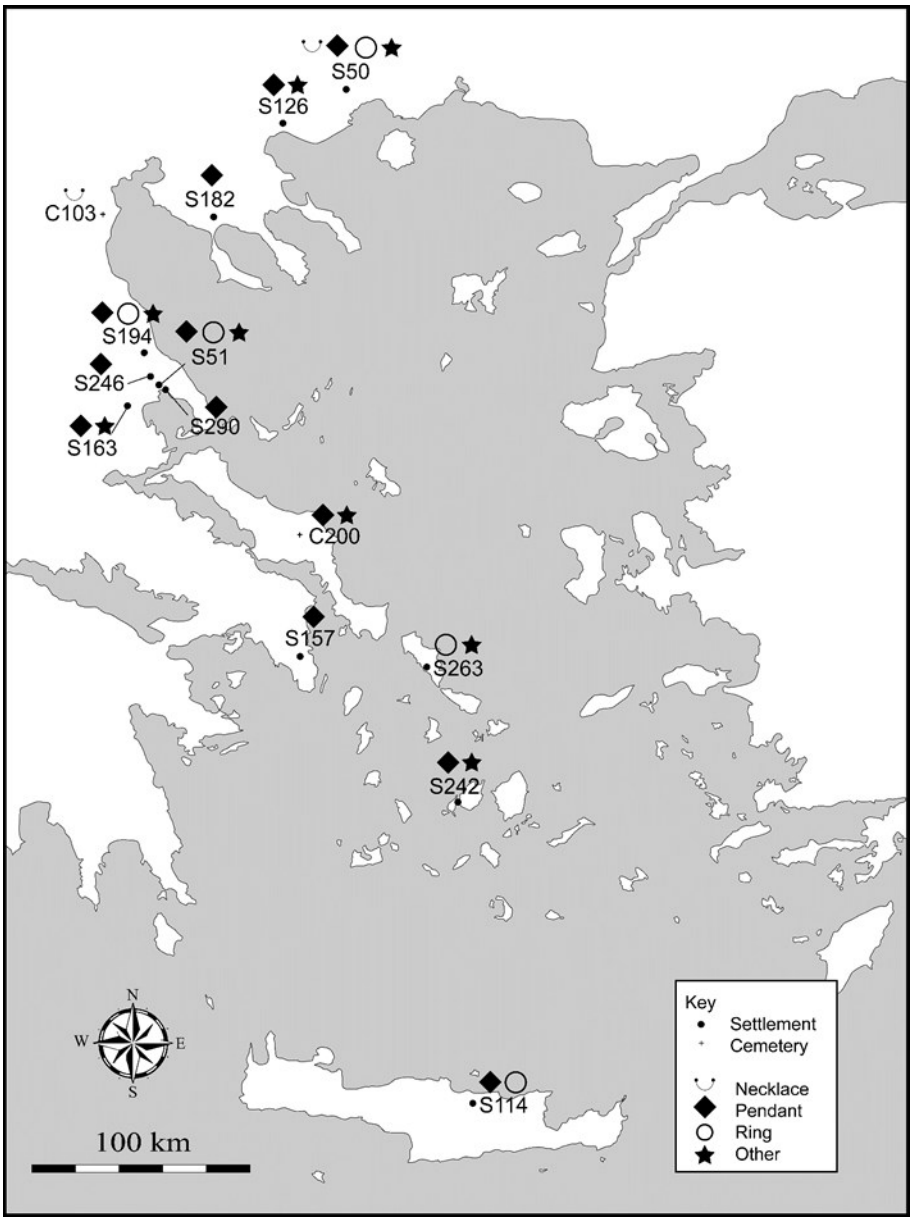

Figure 4.6. Marine shell in body ornamentation evidence from LN–FN contexts. The numbers can be matched to those in Table 4.8 and Appendix 4:EA–EB.

(**EA246**) and Volos (**EA290**) pendants were made from pierced marine shells. Items of worked *Spondylus* are not as common as could be expected in the islands (Fig. 4.6). An example comes in the form of a disk from Poliochni

(**EA219**), recovered from a LN–EBA context.[724] At Saliagos a worked and burned cerith shell was reported,[725] as well as a pierced cone shell which was likely a pendant (**EA242**). Holed shell pendants were recovered beneath the West and Central Court at Knossos (**EA114**.**1**–**2**). Cockles, in particular, were commonly used as pendants with at least 100 examples found, final products of the marine shell object production previously mentioned. At a distance of 4.5km from the coast (LCP:9555), there was a concerted effort to collect these items, which may have first served as a delicacy before being converted into pendants.

Body ornamentation evidence is rarer in the FN than the LN (Table 4.8, Appendix 4:EA–EB). *Spondylus* beads were recovered from Mikrothives (**EA163**), shell rings in the same material were reported from Strofilas (**EA263**) and holed shell pendants were recovered from Volos (**EA290**). A great deal of holed cockles continue to be found in FN layers at Knossos (**EA114**.**3**–**4**), indicating a continuity of ornament production at the site. Marine shells are rarely found in funerary contexts. An exception is a necklace of marine shells associated with a FN ditch burial at Korinos (**EB103**). The recovery of small *Spondylus* disks close to Tomb 6 at Tharrounia (**EB200**.**1**) and several similar pendants in graves (**EB200**.**1**) are likely to have been body ornaments. There is a distinct lack of Neolithic burial data, which accounts for the lack of shell evidence in funerary contexts. The presence of LN–FN marine objects at places such as Dikili Tash in Macedonia, Palioskala in Thessaly and Tharrounia on Euboia shows that these items could move beyond coastal places, either with the people themselves, or as a result of 'down-the-line exchange'.

Evidence increases from the start of the EBA, with a particular focus on funerary contexts (Table 4.9), where more examples are known from island regions. At the Akrotiri (Naxos) (**EB26**) cemetery, shell necklaces were found in four tombs indicating that these were important body decorations for the deceased.[726] Four perforated shells from a tomb at Lakkoudhes (**EB107**) were likely part of a necklace or individual pendants. From the same cemetery, a holed tun shell was also found in Tomb 11. As a large marine shell, it could have been hung as an ornament or been used as a ritual object.[727] A remarkable composite pendant made from fish bone and a bivalve marine mollusc affixed to an oval schist plaque was recovered from the body of a young adult female in a tomb at Apollo Maleatas (**EB40**). This form of pendant is

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[724] Bernabo-Brea 1964, 670–671; Reese *forthcoming*.

[725] Leading Shackleton (1968, 136) to speculate that the maker was displeased with their own work and threw it into the fire.

[726] Two holed *Spondylus* objects were noted by Zervos (1957, 29) as coming from "Paros", likely from looted tombs. An EB I necklace of 20 worked shell beads is in the Karlsruhe Badisches Landemuseum (Thimme 1977, 548; Reese *forthcoming*)

[727] It is likely to have been too big to wear as a pendant.

Table 4.9. Marine shell used as body ornamentation from EBA contexts. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2.

Site	*LCP value*	*Pendants*	*Necklaces*	*Rings*	*Other*	*Chronology*
C11. Agios Charalambos, Crete	82527	X				LN–MM II
S208. Petras-Kephala, Crete	979	X				FN–EM I
S104. Kephali Aphroditis, Crete	36646	X				FN–EM I
C27. Akrotiri, Naxos	3632		X			EC I
C107. Lakkoudhes, Naxos	4001	X	?			EC I
C40. Apollo Maleatas, Argolid	40262	X				EH I
C205. Tsepi, Attica	1262	X				EH I–II
S57. Emporio, Chios	1556	X			X	EB I–II
S114. Knossos, Crete	9555	X		X		EM I–II
C5. Agia Photia, Crete	677	?				EM I–II
C29. Agrilia, Ano Kouphonisi	3720				X	EC I–II
C115. Louros Athalassou, Naxos	2178	X	?			EC I–II
S230. Pseira, Crete	801	X	X			EM I–IIB
C129. Manika, Euboia	837	X				EH IIA
S226. Proskynas, Phthiotis	2628	X				EH IIA
C129. Manika, Euboia	837	X				EH II
S70. Gournia, Crete	1653	X				EM II
C146. Mochlos, Crete	462		X			EM II
C52. Avdheli, Naxos	10830	X				EC IIA
C55. Chalandriani, Syros	3836	X	X			EC IIA
S240. Rouph, Attica	2434				X	EH IIA–B
S133. Lerna, Argolid	552	X				EH IIA–III
S44. Chania, Crete	1046	X				EM II–III
C168. Petras-Kephala, Crete	979				X	EM III
S189. Palaikastro, Crete	415	X				EM III
S49. Dhaskalio-Kavos, Keros	1423		X			EC III
S132. Lefkandi, Euboia	637	X				EH III
S2. Agia Irini, Kea	786				X	EBA

unique in the study area and may have been an object of special significance. Holed shell pendants were also reported from a few settlements, such as Petras Kephala (**EA208**), Kephali Aphroditis (**EA104**), while a limpet bead was reported from Emporio (**EA57**.**1**).

The EB II evidence from quotidian contexts comes in the form of shell pendants from Emporio (**EA57**.**2**), Poliochni (**EA219**) and Knossos (**EA114**.**7**–**9**), as well as a holed murex shell from Lerna (**EA133**.**1**). At

Proskynas, (**EA226**) several perforated marine shells likely served as ornaments. As with the previous period, there is considerably more evidence for marine shell body ornaments used in funerary contexts. Four pierced shells from Louros Athalassou (**EB115**) were part of a necklace and an unparalleled find of a sea horse (*Hippocampus*) from Tomb 63 at Agrilia on Ano Kouphonisi (**EB28**) may have been worn in a string or was perhaps a manuport. Several examples of necklaces and pendants were recovered from Chalandriani (**EB55**) and Avdheli (**EB52**). Perforated shells were reported from Pseira (**EB183**) and a holed murex is known from Gournia (**EA70**.**1**). Two necklaces consisting of perforated shells and semi-precious stones, such as steatite, carnelian and amethyst were reported from two tombs from Mochlos (**EB146**). It is tempting to interpret shell material as being on a similar value level with these semi-precious stones at Mochlos, given their co-occurrence in body ornamentation.

A bracelet of seashells was recovered from EH II Tomb Π at Manika (**EB129**). Shark teeth are known from EH I–IIA Tomb 56 at Tsepi (**EB205**), EH II Manika (**EB129**) and contemporary Agia Photia (**EB4**) on Crete. These are likely to have been pendants. One would like to link the display of shark teeth on the body with prestige bestowed from hunting prowess, as discussed earlier (Chapter 3.2.4). The concentration of Anatolian pottery, large quantities of obsidian and a shark tooth in Tomb 140 at Agia Photia, is also worthy of comment, the individual seemingly being intrinsically linked to objects relating to the sea and sea travel.[728]

More evidence from settlement contexts is available in EB IIB–III. A necklace made from over a hundred pierced dog whelk shells was reported from Dhaskalio (**EA49**), and a shell pendant is known from Lefkandi (**EA132**). *Spondylus* shell fragments were reported at Rouph (**EA240**), where they were argued to be jewellery. Holed shell pendants were recovered from a midden context at Palaikastro (**EA189**.**1**). By far the best evidence, however, comes from Lerna (**EA133**.**2**–**11**) where a wealth of holed shells have been reported. The examples include modified marine shells and fish bones. Murex and cowries were preferred for pendants and beads. A *Spondylus* pendant recovered from the House of Tiles, however, is likely to be a Neolithic relic.[729] A wedge-shaped piece of worked *Spondylus* was recovered from an EB context at Agia Irini (**EA2**.**1**), possibly a pendant.[730] At Knossos (**EA114**.**10**) holed marine shells are known, though they are not as prevalent as in Neolithic layers.

Evidence for shell body ornamentation in funerary contexts drastically decreases in EB IIB–III, with the only evidence being a possible *Spondylus* seal

[728] Davaras & Betancourt 2004, 125.
[729] Reese 2013a, 306; Wiencke 2000, 224.
[730] Krzyszkowska 1999, 158.

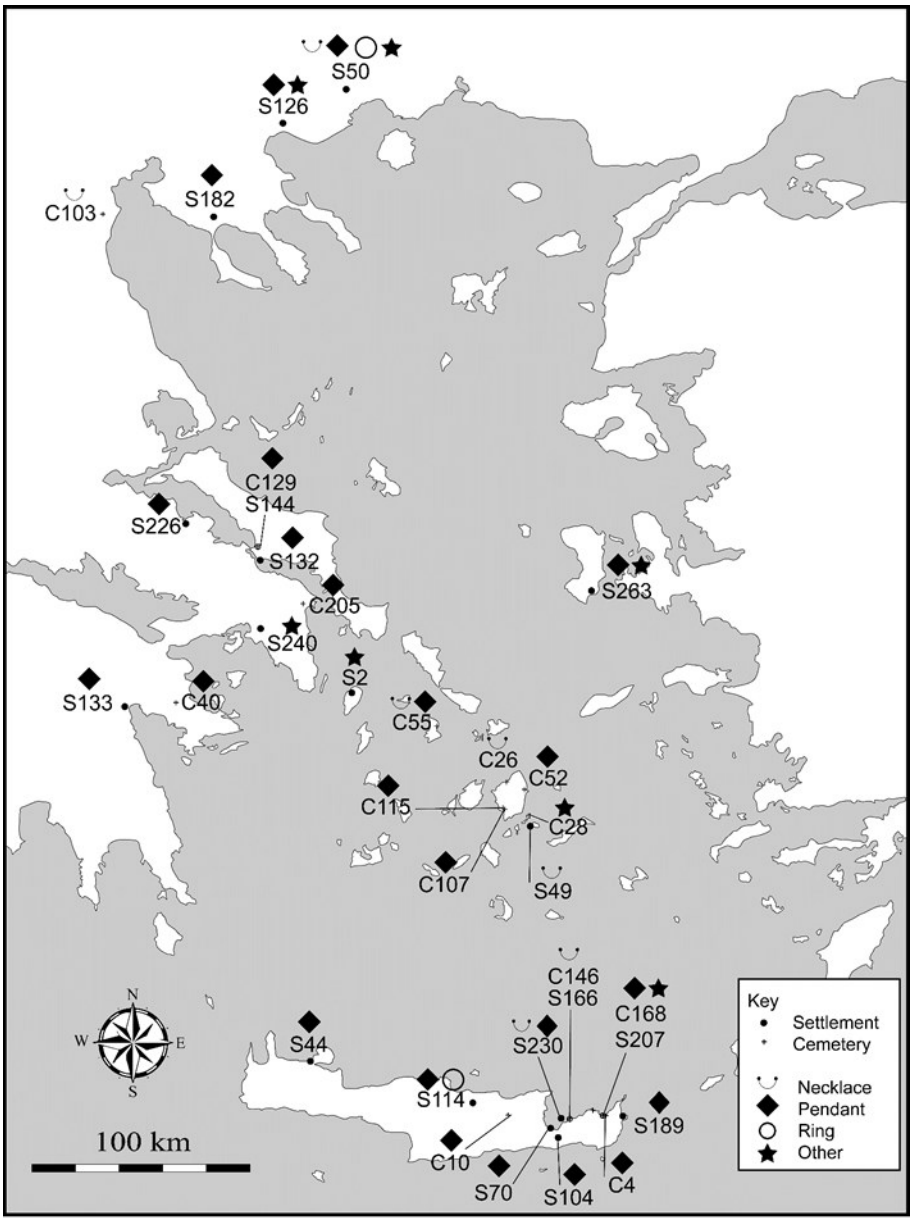

Figure 4.7. Marine shell body ornamentation evidence from EBA contexts. The numbers can be matched to those in Table 4.9 and Appendix 4:EA–EB.

from House Tomb 3 at Petras Kephala (**EB168**), though the lack may be due to a reduction in known cemeteries of this period. The EBA evidence shows the popularity of marine shell pendants across a relatively large area (Fig. 4.7), as well as the general coastal distribution of these objects, though there are

exceptions. Marine shell pendants from Agios Charalambos and Kephali Aphroditis on Crete and the composite marine shellfish bone pendant from Apollo Maleatas are outliers and show the significance of these items as personal markers both in life and death, even in an inland location.

Considerably less evidence is known in the Aegean from MB I onwards, where most examples come from Crete (Table 4.10). A shell pendant was reported from Mochlos (**EA166**.**1**–**3**) and a range of holed shell pendants were reported from Petras Hill 1 (**EA207**). Holed marine shell are also known from Gournia (**EA70**.**2**–**24**). Holed cockles were recovered from the Royal Road, as well as at Gypsades at Knossos (**EA114**.**11**–**13**). A number of shell pendants were recovered from the Mt. Juktas peak sanctuary (**EA302**), where they were likely worn and deposited by attendees at the sanctuary, perhaps as proprietary offerings. Several holed marine shells are reported from Palaikastro (**EA189**.**2**–**6**) from across a range of contexts. A holed pendant from Asine (**EA28**), a necklace of limpets from Phylakopi (**EA211**) and shell jewellery from Skala Sotiros (**EA251**.**1**) and perforated dog cockle pendants from Kolonna on Aegina (**EA116**) come from general MBA layers.

At Lerna (**EB113**), marine molluscs were recovered from several intramural tombs, predominantly containing infants. An exception was a necklace of shells found underneath the skeleton of an adolescent burial (**EB113**.**3**), as well as a murex shell ring in the burial of a child (**EB113**.**2**). Similarly, at Asine (**EB44**) several MBA graves contained marine shell objects. Two shell necklaces of holed cockles were noted in Tomb B15 (**EB44**.**1**), with several other tombs containing marine shells. A significant quantity of shells, likely to derive from necklaces, was found with two adult males in Tomb 84 (**EB44**.**7**).[731] In many cases the contextual information is lost. It is possible that the marine shells were residual in surrounding occupational layers used to close the graves. The small amount of other faunal evidence, which would be expected from intrusive material, nevertheless strengthens the suggestion that the shells were funerary body ornamentation. Evidence becomes less common at the MBA–LBA transition. A drilled fossil gryphaea shell from Pseira (**EA230**.**1**) was probably a pendant, though its context is mixed and could be later than LM IA. A shell bead and shell pendants were recovered from Chania (**EA44**.**1**–**8**). Several pendants were found at Mochlos (**EA166**.**4**–**6**) and numerous holed shells appear in several contexts at Palaikastro (**EA189**.**7**–**20**), indicating that the inhabitants may have commonly worn shell-based jewellery in the MM III–LM IA. Similarly, holed marine shells were recovered from a range of contexts in the Palace, as well as in other areas at Gournia (**EA70**.**2**–**5**, **7**–**9**). A ground and holed cone shell from the Unexplored Mansion at Knossos (**EA114**.**15**) is also likely a pendant. Several pierced marine shells, probably used as pendants or parts of necklaces,

[731] Frödin & Persson 1938, 117; Reese 1982, 139.

Table 4.10. Marine shell used as body ornamentation from MBA–LBA contexts. LCP values refer to the GIS-derived value for the least-cost path from site to sea, as calculated for coastality in Chapter 2. * denotes possibility that the material postdates the study. ▲ = peak sanctuary.

Site	*LCP value*	*Pendants*	*Necklaces*	*Rings*	*Other*	*Chronology*
C11. Agios Charalambos, Crete	82527	X				LN–MM II
S251. Skala Sotiros, Thasos	588	X	?			EBA–LBA
S70. Gournia, Crete	1653	X				MM I–LM IA
S114. Knossos, Crete	9555	X				MM I–LM IA
S189. Palaikastro, Crete	415	X				MM I–LM IA
S302. Mt. Juktas▲, Crete	N/A	X				MM IB– LM III*
C113. Lerna, Argolid	552	X	X	X		MH II–III
S207. Petras Hill 1, Crete	970	X				MM II–LM III*
S166. Mochlos, Crete	462	X				MM II–LM IA
C44. Asine, Argolid	895		X			MH III
C180. Prosymna, Argolid	20041		X			MH III
S116. Kolonna, Aegina	199	X				MBA
S28. Asine, Argolid	837	X				MBA
S276. Toumba, Macedonia	3042	X			X	MBA–LBA
S211. Phylakopi, Melos	476		X			MBA–LBA
S2. Agia Irini, Kea	786	X				LC I
S44. Chania, Crete	1046	X			X	LM I
S230. Pseira, Crete	801	X				LM I–Mod*

were recovered both inside and outside the Agios Charalambos (**EB10.3**) burial cave. Most notable among them were shells of an Indo-Pacific origin, exchanged over a great distance to be deposited in an inland cave on Crete.[732] Outside Crete (Fig. 4.8) shell jewellery was reported from Skala Sotiros (**EA251.2**) on Thasos and Toumba (**EA276**) in Macedonia. A necklace of over 60 cockles and a shell pendant was found in Tomb 20 at Prosymna Argive Heraion cemetery (**EB180**), with a similar necklace recovered from a tomb at Asine (**EB44**). A necklace of limpets has been recognised as coming from Phylakopi on Melos (**EA211**), though it was not noted in the original report.

From several sites with published malacological material, a peculiar feature is the identification of waterworn or gastropod bored marine shells, often complete and not modified in any way (Appendix 4:EC). Such items cannot be evidence for cuisine, as the meat either rotted away or was consumed by other animals. The wear and gastropod boring means that they washed up on the beach and were picked up by humans. This type of material is remarkably

[732] Reese *forthcoming*.

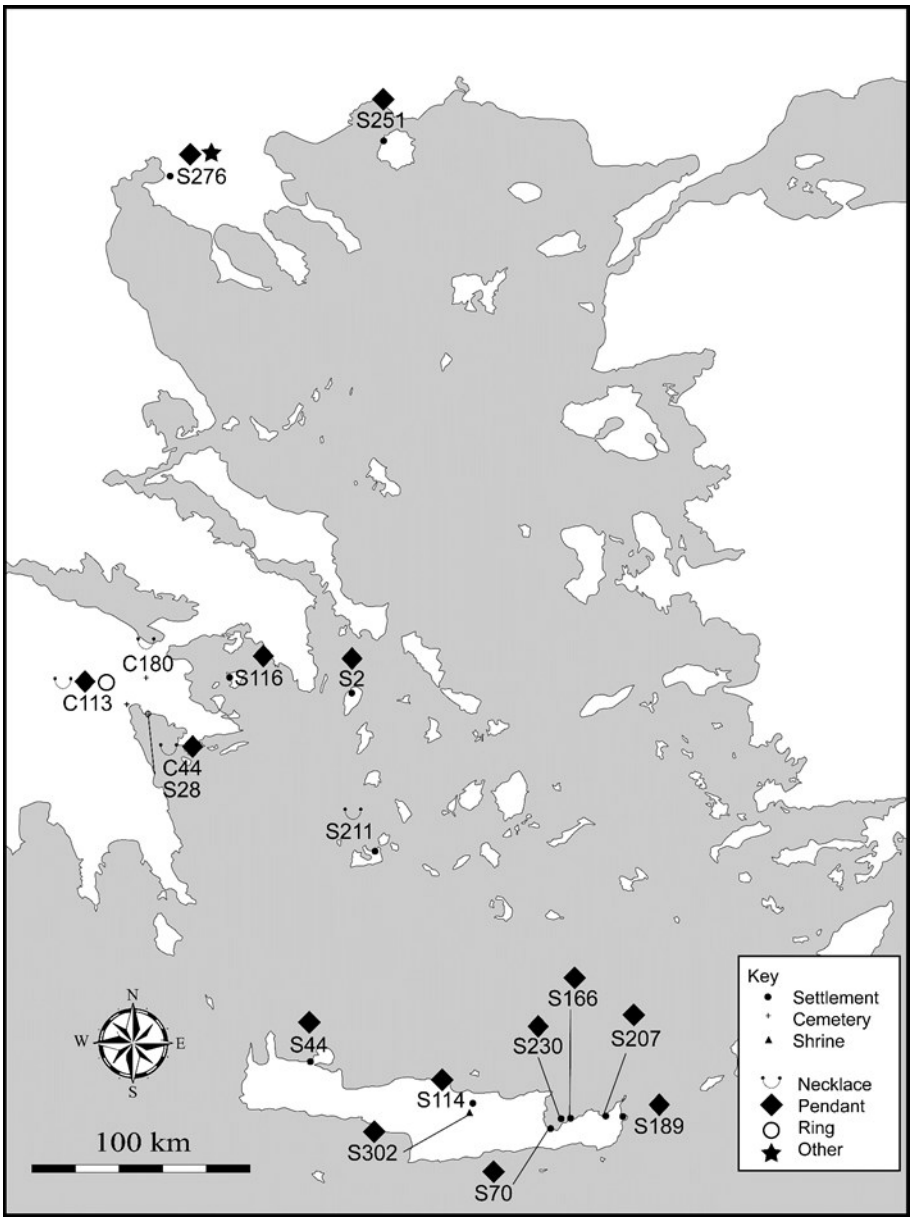

Figure 4.8. Marine shell in body ornamentation evidence from MB I–LB I contexts. The numbers can be matched to those in Table 4.10 and Appendix 4:EA–EB.

common across several sites and contexts, so only summary information is discussed here. Several examples are known from Neolithic Knossos (**EC114**.**1**–**5**) where a considerable amount of cockles were collected dead, determinable through their waterworn surface, either for aesthetic purposes or for storage prior to marine shell object production. They are also found in later

contexts at the site, though in smaller quantities (**EC114**.**6–19**). Waterworn marine shells were recovered from Kephali Aphroditis (**EC104**) and Petras Kephala (**EC208**) in FN–EM I contexts. A considerable number appear in a range of contexts at EH IIB–III Lerna (**EC133**), one of the rare examples of Greek mainland settlements where these forms of data were recognised and published.

Waterworn marine shells were noted in many contexts at Chania (**EC44**), Gournia (**EC70**.**1**–**57**), Palaikastro (**EC189**.**1**–**40**) and Mochlos (**EC166**.**1**–**28**), ranging in date between EM II and LM IA. Waterworn shells in areas of the palace at Gournia possibly indicate storage pending object production, though we cannot exclude a more special interpretation. Waterworn marine shells were also found at the Mt. Juktas peak sanctuary (**EC302**), where they exemplify the intentional transportation of dead marine shells to the top of a mountain, indicating a deeper meaning behind their presence.

Unworked triton shells occasionally appear outside contexts of a special character. At Akrotiri (**EC19**), several examples appear in domestic contexts, while at Malia (**EC142**) an example was found alongside stone tools, a seal stone and ceramics, possibly the personal effects of an individual. In a similar fashion, a few triton shells were recovered from domestic contexts at Sissi (**EC249**). All date to MB III–LB I, contemporary with the ritual use of the shell on Crete. While these examples could be argued to represent some form of domestic cult, the lack of any other markers of special context excludes a cultic interpretation.

These marine manuports are once again concentrated on Crete. Their chronological centring in MM III–LM IA may be misleading as the layers on which they were found are more commonly sealed due to earthquake and destruction deposits. The examples from Lerna serve to highlight what may be present at some sites if marine shells are included as part of the research strategy. In coastal areas it would not be a surprise to find that people collected marine shells as keepsakes, either for their aesthetic value, as some form of manuport or charm. Reaching any deeper meaning, however, is difficult.

Bringing this discussion to a close, marine shells were a feature of body ornamentation from the LN until the LBA, in opposition to more pessimistic commentary.[733] Found in settlements as well as in special and funerary contexts, such objects were an element of individual bodily identity. From the Neolithic evidence, there is a marked focus of *Spondylus* items in Thessaly and the northern Greek mainland, in contrast to the rest of the Aegean, which requires further discussion. *Spondylus* shell, once worked, gives a bright white and distinctive colour. Its transformation into rings and bracelets indicates a

[733] Karali (1999, 51–53) does not read much into marine shell ornaments as a feature of archaeological assemblages after the start of the EBA.

desire to use it as a medium for body ornamentation. Objects made from *Spondylus* have a wide distribution in Central Europe, though the shell has an origin in the Mediterranean and was harvested mostly along the coasts of the Aegean.[734] Several sites in the Aegean serve as potential places for *Spondylus* workshops.[735] In Central Europe *Spondylus* items have been linked to a "superstitious attachment", as well as shamanism.[736] Given the greater frequency of *Spondylus* objects in Europe than in Greece, it seems likely that they had a greater prominence further away from their place of origin and were exploited in the Aegean primarily for Neolithic trade with the northern Balkan region.[737] This can be argued on the basis of their burial usage in Europe.

Outside central and northern Greece, the focus on *Spondylus* is less intense, cockles for example, were the preferred form of body ornamentation at LN–EM II Knossos. This is an indication that while communities further north were entangled in a *Spondylus* shell object network, in other areas the focus was more general, despite the local availability of *Spondylus*.

While the introduction of metal objects appears to call time on the *Spondylus* object exchange network, the use of other marine shells as body ornaments continues. The numerous marine shell objects found in EC graves highlight their desirability and could have carried a symbolic significance within funerary ritual. The uncommon but persistent occurrence of shell necklaces in EC II tombs suggest that such objects may have been markers of prestige, or perhaps associated with a specific social group, or identity. It is unfortunate that osteological analysis has not been undertaken more often, as it would be useful to determine whether shell necklaces were associated with any age group or sex in particular. The fact that such objects are also found at Cretan sites where Cycladic imported pottery or local imitations has been recovered, such as at Mochlos, Pseira and Agia Photia, hint that this may be an island tradition adopted through the immigration of islanders or the interaction and local adoption of some of these practices. Noticeable too, is that most shell material found in tombs dates to between EB I–IIB, a practice discontinued by the end of the period, perhaps a victim of the social changes seen at the end of EB IIB.

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[734] See Dimitrijevic & Tripkovic (2006, 237–352) for a recent discussion of *Spondylus* in the northern Balkan region. Shackleton & Renfrew (1970) ascertained that the source of the *Spondylus* shells from Neolithic sites in the Balkans was the Aegean and not the Black sea, using oxygen isotope analysis. This has been reconfirmed in recent times (Bajnoczi *et al*. 2013, 874–882). Worked *Spondylus* has also been recovered from Neolithic Italy and Cyprus (Reese *pers. comm*).

[735] For Dimini and its role in *Spondylus* object production see Tsuneki (1989); Shackleton & Renfrew (1970, 1062–1065). The coasts of the Plain of Drama have been argued to have been the most likely source for Neolithic *Spondylus* (Shackleton & Renfrew 1970, 1064).

[736] Childe 1942, 28; Seferiades 2010, 187.

[737] Seferiades 2010, 184.

The concentration of marine shell ornaments in intramural MH subadult graves at Asine and Lerna is interesting. Small quantities of marine shells accompanied subadults, typically infants and young children, while complete necklaces are mostly associated with young adults or older adolescent burials. The presence of marine shell in the graves of children is attested in ethnographic[738] and historical comparanda[739] where the practice can be interpreted as a recognition of their lack of full adult status, parental gifts, patterns of mourning practices or even a hope for the restoration to life.[740] The recovery of full marine shell necklaces in Tomb B61 at Asine, Grave 20 at Prosymna and Grave D14 at Lerna all accompanied either young adult or adolescent burials. It may have been the case, therefore, that full marine shell necklaces may have been a marker of passage into full adult status for some groups in the Argolid, while younger children may have been bestowed with or collected marine shells over the course of their childhood, with infants and young children taking a solitary example or a few shells with them into the grave.

The use of marine shell body ornamentation well into the MBA and start of the LBA suggests that these objects maintained value over time. Their existence at palatial sites on Crete, alongside copious evidence for the collection of dead marine molluscs as manuports, suggests something of a fascination with the sea even as early at the Protopalatial period, which over time develops further into other forms of media (Chapter 5). The shells could have been indicators of social status, amulets for good luck, worn by those from coastal communities, or even worn by specific groups as in connection to the worship or affiliation with specific deities. While it is not possible to discern the exact meaning, it is clear that these items permeated daily life at some places on Crete in the MBA and LBA.

4.7 Conclusion: marine shell-derived material culture and seascapes

The evidence of marine shell-derived material culture in a variety of forms has been listed above. Objects were discussed in relation to the social contexts of their use, interpretations of possible significance of certain forms and their role as evidence of human-sea interaction in the study area. Marine shell objects were exploited consistently throughout the chronological scope of this study and apparently fulfilled a multitude of functions in different regions and periods. The evidence provides an account of the exploitation of purple dye in

[738] For example in fifteenth to sixteenth century Virginia and North Carolina (Eastman 2001).
[739] Sea shells were used as grave gifts in Late Archaic and Classical child burials in the Kerameikos of Athens (Stroszeck 2012, 57–75).
[740] Claasen 1998, 206; Pietak 1998, 141–146.

the Aegean and in particular its focus in Palatial Crete and, slightly later, in places in contact with Crete. Evidence for marine shell object production is difficult to identify securely. That stated, there is some evidence for the processing of marine shells for material culture and it is hoped that more attention is paid to this area in future research.

The chapter also highlighted the wide variety in function, context and meaning for marine shell objects. Some were used for more utilitarian functions within domestic areas, while other forms seem to have carried a special significance, such as triton shell objects on Crete. The continued interest in marine shell ornaments across the chronological span of this study highlights that they were meaningful forms of body ornamentation throughout the Bronze Age, potentially associated with specific social groups or identities.

Marine shell ornaments in EBA burials show a meaningful, though by no means dominant, association in the ornamentation of the dead body. This is strongest in the EC I–II Cyclades, though the full extent is hampered by recovery, especially the systematic looting of EC graves, which may obscure the wider use of shell material. The use of these items may have been restricted to individuals or groups of a greater social prominence and may have been displayed in both life and death, though their rarity in contemporary settlement contexts may suggest that they were worn particularly in death, perhaps with some form of symbolic meaning attached to them. The evidence from the Cyclades highlights yet another example of the importance of bodily display in EC society, to which we can now add the use of bright marine shell ornaments alongside colourful pigments, depilated bodies and shining metal objects.[741]

There is an apparent lack of interest in marine shell objects on the Greek mainland after the *Spondylus* network collapses at the end of the LN, though there are a few exceptions. From the small amounts recovered, it appears that marine shell was used for more utilitarian purposes. Caution should be expressed, however, as excavations on the Greek mainland have only recently begun implementing sieving techniques used on Crete for a few decades. Sites such as Lerna are currently outliers on the Greek mainland in terms of their marine interaction. The use of marine shell ornaments in the burial of children is an interesting phenomenon tentatively identified in this analysis but further research is required.

It is clear that shell-derived material culture centres on Crete. This is especially true for the Palatial periods, where purple dye was extensively extracted at several coastal settlements and in some cases, such as Pacheia Ammos-Pefka,[742] appear to represent more specialised and intensive production and application of murex dyes. At the same time, there was a contemporary use, not only of triton shell objects, but marine shells more generally within a variety

[741] Broodbank 2000, 349–356.
[742] As well as at Chryssi outside the study area.

of special contexts, which include palaces, tombs, rural and urban shrines, as well as peak sanctuaries. Especially triton shells may have played an important role in orchestrating rituals, which may have had a connection to a sea-focused deity and highlight a desire to represent the sea within these places. Finally, an intensive collection of dead marine shells at coastal palace sites, as well as their sustained use in body ornamentation suggest that these were important and meaningful expressions of a connection to the sea, a theme repeated in other media (Chapter 5). Taken together, the evidence suggests that the sea pervaded a range of different activities in MM–LM Crete, especially at palatial settlements. This is not an obvious situation, as a variety of other larger islands, such as Euboia, Naxos or Lesbos do not show anywhere near the same investment in the sea. The significance of the sea on Crete, therefore should be read as a social choice, as there was an opportunity for individuals, groups and communities to live on the interior and not engage with the sea so deeply, which can be determined at some inland sites on Crete.

5. Animate Seascapes

This chapter explores the significance of the marine world to Aegean visual media from the study area. It involves the presentation and discussion of visual media (including iconography and skeuomorphism) in their archaeological and functional contexts. Secondly, it seeks to determine the temporal horizons of the introduction and zenith of marine representation and its geographic focuses. Four general themes form the main subdivisions of this chapter. The first is marine fauna, with the representation of marine life as the central aspect of the representation. The second is fishing, which pertains to representation of food procurement. The third is seafaring, where representation of ships and the sea are evident. The final theme is ritual performance, a holistic category that includes both images of cult practice, as well as marine-themes objects from the preceding three categories found within identified ritual spaces. Referenced catalogue entries are found in Appendix 5.

5.1 Metarepresentation

It was highlighted in the introductory chapter that material culture is of vital significance in human cognition. Many objects can become representations of a set of ideas,[743] a concept termed metarepresentation.[744] It is the recollection and subsequent representation of cognitive associations relating to a specific action, thing or object, when the object itself is not present, while also representing all the objects that evoke similar cognitive associations, suggesting the emergence of a symbolic system. The process of metarepresentation is a complex evolutionary trait, which bridged the transition from a simple modes of cognition towards a more mimetic mode, in which imitation of the "real world" was developed.[745] The difference between a representation and a metarepresentation is that while a representation may depict a specific thing, such as a fish, in metarepresentation the same fish could be a stand-in image for the

[743] Dennett 2000, 17. See also various contributions in Sperber 2000.
[744] For the origins of the concept in sociology, see Dennett 2000; von Eckardt 1999. See Pyysiäinen (2002, 319) and Barrett (2011, 205–224) for the metarepresentational concepts in belief and religion. For an overview of the concept as pertaining to art and image creation, see Wildgren & van Heusden (2009).
[745] Donald 1991.

wider concept of the sea, as it can be much easier to draw a fish than the sea, or a spiraliform wave than the sea. This knowledge can be shared and replicated (for example a motif or image), once it has been assimilated within a cognitive system and essentially entails the representation of a representation. This is vital in understanding iconography. The depiction of specific features relating to the sea, such as boats, marine animals and the sea can be taken as an index of the significance of this zone toward cognitive processing. The continued mimesis of sea-focused iconography indicates the metarepresentational significance to a community and its continued reproduction through transmission over time. The generation of sea-focused representation is a direct indicator of the imbuement of space with meaning, rendering it a place. It is the creation of a seascape.

Related are skeuomorphs, objects created to imitate others in a different material. A relevant example would be a marine mollusc shell made from faience. All instances of skeumorphism are also metarepresentations, as their creation in another material relies on the viewer's ability to understand the reference to the originally intended representation.

The *true* meaning of sea-focused representation is not accessible to the archaeologist. Rather, its significance lies in the fact it was represented at all and its patterning in time and space. If sea-focused representations cannot provide an indication of *what* the meaning is, at least they can provide an understanding of *when* and *where* they are significant. The full extent and nature of these cognitive associations through iconography can be given more colour through a consideration of the use-context of the objects and contemporary chronological developments. This chapter, therefore, addresses the metarepresentation of seascapes in material culture. The focus is placed on the range of physical and sensory interactions with the sea evident in representation, though is not just limited to this, addressing the thematic aspects of the data also. The term representation is here used to cover both iconographic and skeuomorphic representation of seascapes and includes a variety of material culture upon which sea related themes were inscribed, as well as objects from different materials intended to imitate a marine object.

The Aegean region is blessed with a wide range of material culture media, upon which a wide range of representational motifs and forms were elaborated. The range of media includes glyptic representation, from seal stones, sealings, rock peckings and some pottery, painted representation, in the form of pottery and frescoes and skeuomorphic representation in the form of objects made to imitate either full-sized or scaled-down versions of another object or creature, such as boat models or sea creatures made in terracotta. A substantial corpus of Minoan seals is relevant to this analysis, though many examples lack secure provenances. These seals can only be stylistically dated and it is unknown if they were produced and consumed in the study area. As a result, unprovenanced seals assume only a minor role, supplementing discussion of themes explored in provenanced material culture.

Methodologically, the focus is placed on the use context, for example type of material and interpretation of functional space, utilising an embodiment perspective. The discussion of the evidence follows in a chronological manner, highlighting developments over time. Another important perspective is the nature of visual perception as being dependent on past memory/experience and future expectation, suggesting an "acculturation" of the viewer.[746] The recognition of objects/motifs, therefore, is linked to the viewer's previous experiences and the appropriate setting for the object/motif.[747] This is useful, as it gives us some form of context for marine representation.[748]

5.2 Marine flora and fauna

Few works have considered marine representation from a holistic perspective, but focused on more restricted regional areas or material types.[749] A marine theme has frequently been only one element of a larger work and rarely considered a central subject in its own right. Prevalent throughout has been the issue of environmental determinism in the decision to represent sea creatures.[750] The motive behind the representation of marine animals has also been explained as a result of their economic significance,[751] or *iconographic reinforcement* of the function of the vessel.[752] Others have stressed more social factors, in their role in creating and reinforcing identity.[753] Accuracy in marine representation has also been the subject of scrutiny, with some research exploring the potential for the identification of species represented,[754] while others have questioned the marine knowledge of craftspeople.[755] Debate, there-

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[746] Muskett 2001, 31–32.
[747] Boring 1930; Bugelski & Alampay 1961.
[748] Ingold (2000, 130) on cave-paintings: "Their purpose is not to represent but to reveal, to penetrate beneath the surface of things ... The division, along with the dualism of nature and culture on which it rests, is of modern provenance, and it lies behind the conventional notion of the work of art as proof of a uniquely human capacity for the creative thought and expression."
[749] Exceptions are Saunders (2008), who utilised a range of material in her analysis of Neopalatial marine representation and von Rüden (2015), who although in a restricted overview, serves to tie up a range of material sources on marine representation through a bold embodiment perspective.
[750] Best summed up by Bosanquet (1904, 321) "At ports where sailors and fishermen… came and went, it was natural for an imaginative race to acquire that sense of the magic and mystery of the sea…".
[751] Gill (1985, 81) suggested: "Though decorative in effect, marine subjects seem to have been selected by the Minoans for practical rather than aesthetic reasons: to ensure the continuity of harvests from the sea by depiction of those creatures most useful to man".
[752] Morris 1995, 193; Mountjoy 1985, 23.
[753] Powell 1992, 314; Shapland 2010, 124.
[754] Gill 1985; Mylona 2000.
[755] Berg 2011, 127–129.

fore, has been polarised between functionalist interpretation and more metaphysical interpretations. The aim here is to explore the patterning of these representations, both temporally and spatially, in light of their role as metarepresentations of the sea and how they relate to seascapes.

5.2.1 Fish

Fish are the most common species of marine fauna represented throughout the study period. The earliest representations appear as a minor feature on EC I/II frying pans, such as **5**.**3**, as well as on slightly later EC IIA Cycladic frying pans from Chalandriani on Syros (**5**.**128**), as well as petroglyphs considered in detail later. The earliest representations *without* accompanying ships can be found on a sherd carrying an incised fish (**5**.**1**) at Markiani on Amorgos, dated to EC IIB, with another incised on an almost intact deep bowl from the same site (**5**.**2**). The first was recovered from an area of the site termed the "scarp area" together with a disproportionate number of spindle whorls.[756] The latter come from an area in which a conical cup, a copper object, a blade, stone tools and other ceramics were also recovered, though the evidence was mixed.[757] Given that these fish decorate ceramics, we can suggest that they were considered a suitable decorative motif for food consumption, especially **5**.**2** from an almost complete bowl. Also interesting is that these images come from EC IIB, a period of considerably less fish consumption (Chapter 3.2.4), in contrast to EC IIA, when more fish was consumed at Markiani. The tail of a fish is evident on a dark burnished sherd (**5**.**4**) from Akrotiri on Thera, probably dating to EC III, though this sherd was found in a sounding and has no specific use context.[758]

Outside the Cyclades, and considerably further inland, are examples from the Archanes Phourni cemetery on Crete, where three objects representing fish were recovered from the EM III Tholos Tomb C, (**5**.**5**, **5**.**6** and **5**.**7**).[759] These persons may have had a link to the sea, which was significant enough to be adopted as a personal emblem and deposited in the tomb with them. In addition, fish and the sea more generally may have had a greater symbolic significance at Archanes Phourni, which seems to be borne out through the recovery of contemporary deposits of seafood and marine shells deposited in the cemetery and grave contexts (Chapter 3.2.6).

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[756] Marangou *et al*. 2006, 43–44.
[757] Marangou *et al*. 2006, 63, table 4.5.
[758] Sotirakopoulou 1986, 311: pl. 19e.
[759] Sakellarakis & Sapouna-Sakellaraki 1997, 635–636, fig. 690; 2002, 114–118.

Fish representations are not overwhelmingly common in the EBA but, on the other hand, iconography of any sort is not common either.[760] It is important that at the sites mentioned, representations of other forms of fauna, such as terrestrial fauna, are rare and so these fish representations are a significant indicator of the importance of the fish and sea to some EBA communities.

The MBA sees a much greater quantity and clarity of fish representation than the preceding period. A particular concentration on pottery is noted at Phylakopi on Melos. On an *askos* were three solidly painted fish with fins alongside blocks of squares (**5**.**8**). Another example comes in the form of a body sherd depicting an incised stylised fish or bird (**5**.**9**). Other ambiguous examples on pottery include the crosshatched body and possible fins of a schematic fish (**5**.**10**), while another could be a fishtail inside a triangular feature, though the overall scheme is unclear (**5**.**11**). More certain representations of fish tails are visible in other examples. On the rim of a *pyxis*, two fish, one above the other, are discernible through their forked tails, with the upper portrayed with an additional set of fins (**5**.**12**). On a body sherd, the forked tail of a fish is also evident (**5**.**13**). Other examples include a bridge-spouted jar with the lower half of a fish (**5**.**14**) and an unclear schematic fish from a rim sherd (**5**.**15**). A final example comes from a dark burnished barrel jar, where the scene portrays two highly schematic elongated fish, with the forked tail of only one visible, while the other is evident in a long body, with fins and a forked tail (**5**.**16**).

Other examples from the early MBA come from Crete. From Vasiliki, comes a decorated polychrome jug (**5**.**17**) with fish swimming around the central area (Fig 5.1). A similar example is known from Palaikastro, where half of a schematic fish was portrayed in light-on-dark (**5**.**18**). Two further representations were found at Palaikastro. The first is from a rim sherd of a cup, where the front half of a squat fish is evident, while the lower half of another fish is noticeable, separated by a dividing panel (**5**.**19**). In the second, the lower half of a fish is portrayed, with spines, from the rim of a Kamares cup (**5**.**20**).

An impression from a clay sealing (**5**.**21**) from the MM II Hieroglyphic deposit at Knossos depicts a fish along with a cuttlefish (*Sepia*). This find, from inside the palace at Knossos, is an interesting context for the use of marine imagery, giving the impression that such an image may have been the personal emblem of an individual in connection with the various functions of the palace, despite the coast not being immediately adjacent to the area. While

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[760] At Markiani, most ceramic decoration prior to EC IIB consists of incised linear decoration (spirals, slashes and stamped herringbone designs). In EC IIB (Ma IV) schematic fish are represented. while the only other figurative design comes in the form of a possible incised double axe (Marangou *et al*. 2006, 155). The character of the EC ceramics at Akrotiri are similar to that at Markiani, where incised spirals and linear motifs are the only other forms of ceramic decoration (Sotirakopoulou 1986, 298).

only one find, the suggestion of a contemporary focus on seafood consumption by some elite groups at Knossos (Chapter 3.3.2), implies that the importance of marine imagery may have concerned more than just sustenance.

Many contemporary fish representations come from seals. A MM II steatite seal was found in House B11 at Palaikastro (**5**.**22**), depicting two large fish, which given their size, may have been tunny (*Scombridae*). The same scheme of decoration is paralleled in two other steatite seals (**5**.**23** and **5**.**24**), both unprovenanced but also dated stylistically to MM II. A steatite seal from the 'Atelier de Sceaux' at Malia depicts a fish, next to either another, more schematic fish, or some form of long implement (**5**.**25**). Several unprovenanced examples of fish can be found in Appendix 5B. Fig. 1 (*Supplementary material*).

An example in ceramic, recalling **5**.**17** and **5**.**20**, is the partial representation of a fish on a polychrome cup from "lakkos" in Sector III at Petras (**5**.**26**). This context was discussed in Chapter 3.2.4 and it is not a stretch to suggest that the inclusion of marine imagery in this deposit, ascribed a cult and elite character,[761] implies the significance of fish and by extension the sea, to elite competitive consumption at Petras. An almost complete, identical version of this design is found on a cup (**5**.**27**) from close-by Gournia.

A small number of fish representations are known from the MBA–LBA transition on the mainland. Two possible examples come from Argos in the Argolid, both from burial contexts. An early LH I cup decorated with a schematic fish (**5**.**28**), was recovered during the hospital excavation, though it could also be a boat or something completely different. This cup has been argued to be imported from Phthiotis, based on the ceramic fabric.[762] A matt-painted sherd was also recovered from a MBA tomb (not dated more specifically), on which was portrayed either fish or dolphins (**5**.**29**). Fish representation is unknown prior to this period on the Greek mainland and it is significant that the first to appear derive from mortuary contexts.

Several further examples derive from late MBA contexts at Phylakopi. A series of sherds from the same large closed vessel carries a net or scale design, as well as two fish tails (**5**.**30**). A large fish with a forked tail and fins is represented on the rim of a basin (**5**.**31**). The fish swims below a wavy line, which could represent the surface of the water. A remarkable example depicts a fork-tailed fish being either carried by a bird, or bearing a bird on its back (**5**.**32**). The bird is recognisable by a remaining leg, as well as the lower part of the body, which is coloured in red, as other contemporary birds are decorated on bird jugs.[763]

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[761] Haggis 2007, 715–775.
[762] Papadimitriou 2010, 55, fig 10.
[763] Nikolakopoulou 2010, 215.

At Palaikastro, fish are portrayed on a light-on-dark bridge spouted jar (**5**.**33**). Most MM III marine representations from Crete otherwise come from seals. From Malia is a brown steatite seal with the pattern of a fish, found unstratified but dated by the excavator to MM III–LM I (**5**.**34**). Two further examples were found in *pithos* burials at Gournia Sphougaras. The first is an amethyst seal with a fish, sea urchin and other features represented (**5**.**35**). The second is a steatite seal with marine elements and a stylised fish (**5**.**36**). Both are grave offerings and probably personal items, suggesting a significance of these images as power symbols in death. Additional unprovenanced examples are also known and listed in Appendix 5B, Fig. 2–3 (*Supplementary material*).

By the start of the LBA, fish images became yet more common in a variety of media. From Phylakopi, fish are a common decorative element on basin vessels. On one example, a polychrome sherd, a tail fin and lower part of a fish, with a red inlay are represented (**5**.**37**). There are additional similar examples (**5**.**38** and **5**.**39**). As previously, however, the weight of the evidence comes from Crete. In ceramic is a round, spouted cup of dark-on-light ware from Palaikastro, with a possible stylised fish, where elements of a tail and fins are preserved (**5**.**40)**. A seal from Knossos with two flying fish (*Exocoetidae*) may come from the palace (**5**.**41**). From the nearby cemetery at Mavrospelio is a similar example, with what appears to be a solitary flying fish on a red jasper seal from Tomb IX Chamber D (**5**.**42**). Two fish, probably also flying fish, are portrayed on a jasper seal from Graves I–III/IV–VI at Mochlos (**5**.**43**). Discussed further below, the Flying Fish Fresco from Phylakopi (**5**.**184**) contains a LC I representation of flying fish in fresco form. From Palaikastro is the fragment of a steatite seal, in which two fish are represented, though the break in the seal does not allow for another species identification (**5**.**44**). Flying fish are common in marine faunal iconography of LM I Crete, with several further examples found in Appendix 5B, Fig. 4 (*Supplementary material*). Many are schematic, though **5**.**45** and **5**.**46** contain more naturalistic renderings and parallel the representations seen in **5**.**184**.

5.2.2 Dolphins

Representations of dolphins are easily confused with fish (see for example **5**.**29**, which could be either), depending on the manner of rendering, though during the MBA, particular features become evident which help in their identification. The first examples are from early MBA Phylakopi. A rim sherd bears the head of a dolphin, identifiable by the beak and large eyes, as well as part of another probable fish/dolphin (**5**.**47**). The complete profile of a cup likely bears the lower part of a dolphin, with the head missing, identifiable by the dorsal fin (**5**.**48)**. Another example is evident through the beak and body shape of the animal (**5**.**49**). A common feature for all are the large eyes of the dolphin, which makes isolated examples of large eyes likely to be part of dolphin representations (**5**.**50**, **5**.**51**, **5**.**52** and **5**.**53**).

Dolphins adorn two burial *pithoi* from MM III Pacheia Ammos on Crete. The first is a light-on-dark *pithos* with dolphins, rocks and a possible seabed at the base of the vessel (**5**.**54**). In the second, several dolphins are also represented in a dark-on-light style (**5**.**55**). Dolphins are also known from seals; one unprovenanced example engraved with two such animals and a seabed or stylised ship (**5**.**56**) and a second contemporary steatite cylinder seal from Knossos with two dolphins (**5**.**57**).

Dolphins become a more popular subject theme in LB I, with a wider variety of examples. An offering table from Akrotiri bears dolphin decoration (**5**.**58**) and a *pithos* from the same settlement is decorated with a range of animals, including large dolphins and small dolphins/fish above wavy lines probably representing the seabed (**5**.**59**). Another contemporary example is from a basin decorated with dolphins (**5**.**60)**. From Zakros on Crete, a chlorite conical *rhyton* (**5**.**61**) has three dolphins engraved above marine rockwork (Fig 5.1). Cretan seals also carry dolphin representations. A clay impression on a burial *pithos* at Gournia Sphougaras depicts no less than seven dolphins in a synchronised swim (**5**.**62**). Four dolphins swim in a synchronised fashion around a central point (**5**.**63**) on a seal from Knossos. It was dated stylistically to LM I, though it was actually found in Hogarth's tomb, in a Geometric context (900–700 BC). A similar unprovenanced example shows three dolphins swimming around a star or urchin, on an agate seal (**5**.**64**). A range of additional, unprovenanced examples of dolphins are known (Appendix 5B, Fig. 5, *Supplementary material*). Of special note is a seal engraved with two dolphins, a bird and a probable cuttlefish (**5**.**65**) and another with a dolphin next to a series of rings of unknown function (**5**.**66**), though possibly related to fishing or representations of subsurface sea topography.

From the Cyclades, there are two fresco paintings in which dolphins feature. At Agia Irini on Kea the Dolphin Fresco portrays at least six dolphins in a reconstruction (**5**.**67**).[764] The plaster fragments are difficult to combine, but appear to show dolphins swimming in a group. In the Flotilla Fresco from Akrotiri, discussed further below, dolphins swim between and around the boats (**5**.**168**). A similar theme is also depicted in the Dolphin Fresco from the Queen's Megaron at Knossos on Crete (**5**.**180**). In these instances, it may be the case that the dolphins were a shorthand mnemonic, or metarepresentation of the concept of the open, deeper sea, rather than the coastal, neritic spaces. Two dolphin representations can be found on the Greek mainland at Mycenae, echoing the use of the imagery in the Minoanised southern Aegean. On a one-handled gold cup from Shaft Grave III in Grave Circle A at Mycenae, dolphins are rendered in repoussé (**5**.**68**). From Shaft Grave V is an ostrich egg *rhyton* decorated with at least five faience dolphins (**5**.**69**).

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[764] Coleman *et al*. 1973, 293–296. The dating, however, is LC I–II, so may slightly post-date the study.

5.2.3 Marine Molluscs

Given the high incidence of marine molluscs from some settlements (Chapter 3) and their use as material culture (Chapter 4), one would expect an iconographic repertoire akin to that of fish. Marine molluscs are rare in iconography, however. There are a range of skeuomorphic representations of marine molluscs (Chapter 5.5.4), though as these are mostly found in cult contexts, discussion of these examples is placed there. [765]

A steatite pendant from Tomb VII at Knossos Mavrospelio bears a cockleshell (**5**.**70)**, broadly dated by context to MM II–LM I. A few unprovenanced examples are also known, e.g. a seal impression with four molluscs (**5**.**71**). Other examples include a representation of two triton shells (**5**.**72**:Fig 5.1). A few molluscs from unknown or non-cult contexts are represented skeuomorphically in different materials. The earliest is a moulded cockleshell (**5**.**73)** from House B at Knossos, perhaps an item in domestic ritual or simply a toy.[766] A clay mould (**5**.**74**) for triton shell applique ornamentation on ceramics (5.5.4) was recovered from the Potter's workshop in Quartier Mu at MM I–II Malia. A perforated marine shell in crystal (**5**.**75**) was found in Tomb IV at Knossos Mavrospelio, likely a pendant worn by the deceased. A mould for making shell ornaments (**5**.**76**) was found at MM III Knossos, while in the area of the Landing on the Grand Staircase at the same site, a sealing depicting a row of figure-of-eight shields with a triton shell below (**5**.**77**) was found. From Grave III in Grave Circle A at Mycenae, a white faience triton shell (**5**.**78**) was also recovered, probably a *rhyton*. A vessel with marine shell relief applique at LM I Sissi (**5**.**79**) was probably a product of the workshop in which it was found. Finally, a tiny bronze cockleshell from Gournia (**5**.**80**) may have been some form of decoration for a bronze vessel or a small pendant.

[765] A few examples of skeuomorphic triton shells are known without provenance, from private collections. Baurain & Darque 1983, 70, no. 19, fig 51.
[766] Evans 1935, 108, fig 75.

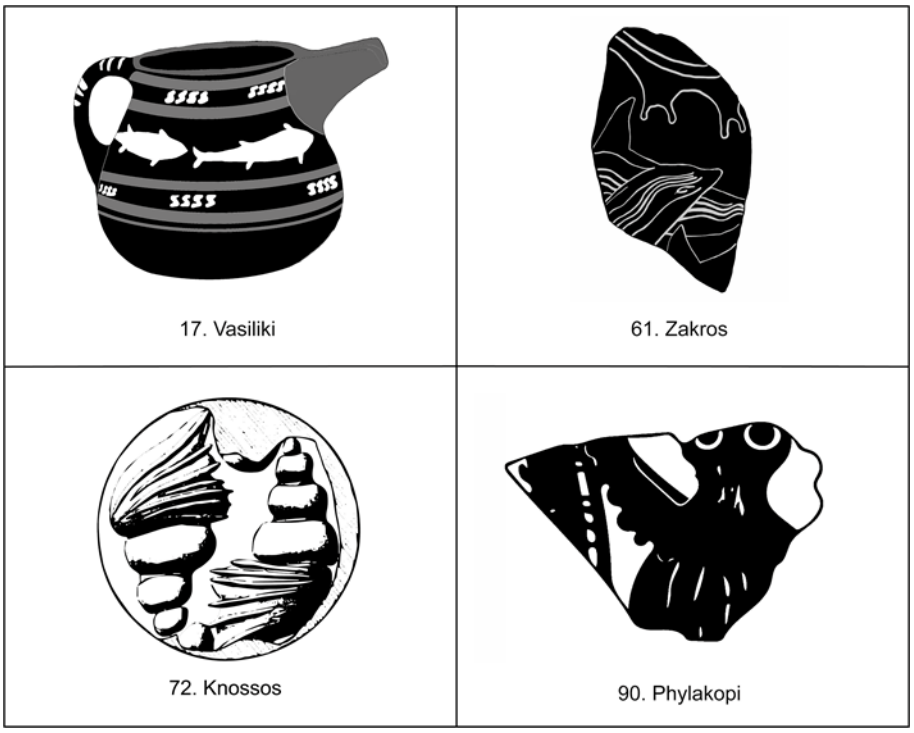

Figure 5.1. Various examples of marine faunal representation. Redrawn by author.

5.2.4 Echinodermata

Representations of sea urchins and starfish are difficult to distinguish and hence few. Many pointed stars in combination with marine elements are probably sea urchins, but when such identifiers are lacking, the interpretation is tenuous. In one example from MM III Tomb I at Mochlos, a chalcedony seal is engraved with a sea urchin, an octopus, and two fish (**5**.**81**). Aforementioned seal **5**.**35** from Gournia Sphougaras also depicts a sea urchin together with a fish. Another example is **5**.**64** where dolphins swim around a star/sea urchin. Two unprovenanced seals contain possible sea urchins with one bearing two sea urchins or starfish and a dolphin/fish (**5**.**82**) and the other a large, central sea urchin next to a fish (**5**.**83**).

5.2.5 Crustacea

Crab depictions are rare. Moulded and painted terracotta reliefs of crabs and other marine objects were recovered from a MM III context in the West Court *kouloures* at Knossos (**5**.**212**). A similar suite of objects were also found in Quartier Mu at Malia (**5**.**226**). Two sealings from the Temple Repositories at

Knossos contain clear crab motifs (**5**.**84** and **5**.**85**), while a third unprovenanced example is only partially preserved (**5**.**86**). The three instances are remarkably similar, though **5**.**85** is somewhat smaller than **5**.**84**[767] and cannot come from the same seal. It is probable, however, that they come from the same craftsperson or workshop.

5.2.6 Cephalopods

The cephalopod grouping includes a range of different species, such as octopus, argonauts and cuttlefish (Appendix 5, Fig. 6). While their representations can at times blend between the different species, there are sometimes perceptible differences in their appearance. Argonauts can be recognised by the representation of their shell, from which their tentacles emanate. Cuttlefish (including here squid [*Loligo*]) have a more flattened body, while octopus can be recognised by the presence of its suction padded tentacles and large, ovoid head. Iconographic evidence for cephalopods first appears during the MBA. The earliest depiction is from a three-sided steatite seal from Tomb X at MM I Mochlos (**5**.**87**), where one side contains an argonaut. Another early example is a sealing from the MM II Hieroglyphic Deposit at Knossos, which depicts a cuttlefish and a fish (**5**.**21**). A particular feature of the representation of cuttlefish is how it ambiguously shades over into other motifs.[768] For example, an unprovenanced seal stylistically dated to MM II depicts a central body along with curved elements that may represent tentacles (**5**.**88**). However, another similar motif is known as the Rams head, which is also represented in a similar manner.[769] Due to the uncertainties here, these representations are omitted from discussion. Another rare, contemporary seal suspected to be from Knossos consists of a central element with six probable tentacles, likely an octopus (**5**.**89**).

Towards the end of the MBA, there is a noticeable increase in the representation of octopodes (**5**.**81**, **5**.**89–5**.**92**, **5**.**95**, **5**.**99–5**.**103**: all from MB III or later), especially in burial contexts. A sherd from a basin or bowl at Phylakopi carries the body and tentacle system of an octopus (Fig 5.1), more naturalistically rendered than previously (**5**.**90**). A burial *pithos* from Pacheia Ammos on Crete bears the representation of a large octopus with six tentacles (**5**.**91**). A steatite *rhyton* from the Throne Room at Knossos is engraved with an "ambushed octopus", more naturalistically rendered (**5**.**205**).[770] At least six tentacles are depicted facing upward as in **5**.**90** rather than downwards as in **5**.**91**. A cylinder seal from Tomb I at Mochlos also portrays the body of an octopus,

[767] Krzyszkowska 2005, 167.
[768] *Contra* Onassoglou 1995.
[769] For example Marinatos 1993, 143, fig. 114.
[770] Evans 1928, 502–503, fig 307.

with tentacles curled into rings (**5**.**81**). In another example, a large, central octopus has been stylised to include a series of circles to represent the suction-pads and half-moons to portray the tentacles (**5**.**92**). That humans fished for octopus is clear from a seal from Knossos (**5**.**114**). Three cephalopod representations can be found in graves at Knossos Mavrospelio. From Tomb VI, a green jasper seal (**5**.**93)** depicts a stylised cuttlefish and the same motif occurs on a red jasper seal (**5**.**94**) in seal in Tomb IV. From the same cemetery, though not assigned to a tomb, comes a limestone conical *rhyton* (**5**.**95)** with two octopus tentacles in relief preserved, rounding off a curious concentration of cephalopod imagery at what is an inland cemetery.

In LB I, argonauts appear more regularly in marine imagery.[771] From Knossos come a steatite seal with two argonauts (**5**.**96**) and a composite image of an argonaut, a bird and a butterfly (**5**.**97)**. Another octopus also adorns a steatite seal from Knossos (**5**.**98**). A peculiar and unprecedented glut of cephalopod imagery comes from Grave Circle A at Mycenae. In the fill of Grave IV, fifty-three gold cutouts of seven-tentacled octopus were found, likely to have adorned a burial shroud of the dead (**5**.**99**). This should also be considered in conjunction with likely elevated marine protein consumption from multiple individuals found in Grave IV,[772] suggesting that the marine in both life and death, were significant to this social group. From Grave III comes another cache of gold octopus items, with a range of types, including roundels representing an eight-tentacle octopus (**5**.**100)**, gold octopus cut-outs with eight tentacles hanging down (**5**.**101)**, a gold octopus cut-out with six tentacles (**5**.**102)** and a gold octopus cut-out with eight tentacles ending in spiral curls (**5**.**103)**.

5.2.7 Flora and the sea

Iconographic representations of peripheral elements of the marine realm, such as rocks and marine foliage, are few and rarely represented as the central feature. An unprovenanced MM II steatite seal shows a starfish or sea coral (**5**.**104**). Sea foliage is also evident in a few examples (**5**.**60**, **5**.**66** and **5**.**83)**. Marine rocks appear exclusively in Minoan iconography. The motif occasionally serves as a useful border and perhaps indicates a greater awareness of subsea topography. Some examples have rockwork patterns decorating the borders of the image (**5**.**21** and **5**.**205)**, while others incorporate a similar pattern around the octopus (**5**.**91)**, perhaps communicating that the octopus was in hiding amongst the rocks. It is noteworthy that all examples come from Knossos. Given that the coastal area closest to Knossos was rocky, perhaps this

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[771] Argonaut jewellery in metal, glass or stone are a particular feature of the Late Helladic period, in particular LH II–III, beyond the chronological scope of this study. Their omission here is regrettable, though for a thorough analysis, see Saunders 2008, 221–222.
[772] Papazoglou-Manioudaki *et al*. 2010, 218; Richards & Hedges 2007, 220–230.

attribute given to some marine scenes is in some form a reference to local marine topography, or that there was a preference for sea rocks in association with marine images. On a *pithos* from Pacheia Ammos, a pebble-sand floor is represented below swimming dolphins, while a curvilinear line above them may represent the sea (**5**.**54)**. In a similar fashion, a *pithos* from Akrotiri also depicts some form of seabed, as well as possible sea foliage in association (**5**.**59)**.

The sea as a physical substance itself is rarely represented. Spirals are a reoccurring feature of EC II frying pans from Chalandriani on Syros and most likely represent the waves of the sea, given the presence of boats and fish in the images (**5**.**128**). Among these examples, the interconnected series of spirals often surround the boats and are likely to present the illusion of a rough sea. Other examples, however, have spirals without the accompanying presence of boat or fish in tow (**5**.**105** and **5**.**106)**.

With the introduction of the fresco painting tradition at the start of LB I, a more naturalistic character of the scenes mean that the sea is now represented. In a large fresco scene from Agia Irini, a Cycladic hillside town is depicted, along with a boat and humans, as well as a representation of the sea, denoted by mid-blue (cerulean) colour (**5**.**170**).[773] The sea is similarly represented in frescoes from Akrotiri. In the Flotilla Fresco, the sea is depicted mid-blue (**5**.**168**), while in the Miniature Fresco there are hints that a blue colour may have been present in places (**5**.**169**). A notable contrast is the representation of the sea in the Flying Fish Fresco from Phylakopi, where the sea is rendered in yellow (Fig 5.5), while in the interstices between the fish are blue elements, which could conceivably represent the movement of water (**5**.**183**). A similar configuration is found in the Dolphin Fresco from the Queen's Megaron at Knossos (**5**.**180**) where the sea is represented in a yellowish colour, while blue, curvilinear elements may again represent the movement of the water.[774] The limited use of blue colour in **5**.**183** and **5**.**180** may be due to the scarcity of Egyptian Blue pigment.[775]

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[773] Abramovitz 1980, 62. The example is included due to the possibility that it may have been executed in LC IA, given a similar thematic content to the LC IA Flotilla Fresco from Akrotiri. The possibility exists, however, that it could date to LC IB, or LC II.

[774] Evans 1921, 346. There is controversy over the dating of the Dolphin Fresco, with Evans originally advocating a MM III date, though more recently, Koehl (1986, 413) suggested that the fresco is LM III, as it may have fallen from an upper level. I consider that it should be dated around LB I, given similar contemporary scenes in the Cyclades.

[775] "Egyptian blue" ($CaCuSi_4O_{10}$) is a synthetic compound used initially and predominantly in Egypt to colour items blue. Chemical analysis has confirmed the presence of Egyptian blue in LH III frescoes from Pylos, and the blue in the aforementioned frescoes may also include Egyptian blue (Tsairis *et al*. 2017, 418–427). Perdikatsis *et al*. 2000, 103–118. This could explain the choice not to represent the sea entirely in cerulean, though see Cameron *et al*. (1978, 121–184) who argue that some of the blue in the frescoes may have flaked off.

5.2.8 Discussion

The earliest representation of fish are only recognisable through the depiction of fins coming from a curviform body. This schematic form is dominant until the mid-part of the MBA, when we start to see a more naturalistic rendering of fish together with additional species of marine fauna. Fish appear on a range of media, ceramics in the EBA–mid MBA and with more regularity on seals from the beginning of the MBA onwards, though are rarely represented on Crete prior to EM III, despite a reasonable quantity of prepalatial seals.[776] Most EBA fish representations come from the Cyclades, with the earliest representation of fish on Crete coming at the start of the MBA (Fig 5.2). It is clear that the emergence of marine representation on Crete correlates with the beginnings of state formation on the island. Several generations of academic work on the Minoan palaces have established the significance of land and agriculture to the functioning of the Minoan palaces.[777] The state formation process included significant social changes. As key actors in society reoriented themselves in relation to the palaces, new symbols and concepts may have gained popularity as new methods of defining individual, family or group identity. This process may have led to the adoption of marine animals by some for their insignia on seals, which may also involve a specific link between that person/clan and the sea, whether involved in fishing or seafaring. This increased interaction with the sea may also have led to a greater significance to sea related matters and their eventual adoption into cult practices (Chapter 5.5). A point in favour is that, while Chapter 3 demonstrated that marine molluscs were regularly consumed as both food and material culture, they were rarely depicted in iconography. This suggests that the representation of specific marine animals was not a passive reflection of animals encountered, but an active and meaningful choice.

The choice to represent flying fish and dolphins suggests an interest in the pelagic zone of the sea. This may imply that the sea may have had different zones of perception, from the more shallow, littoral spaces where food is collected, to the deeper, darker waters where unknown and unfamiliar creatures roam. As dolphins frequently follow ships on their voyages, their behaviour may have led to them being given a special significance, perhaps as messengers from deities or as sentient beings. The same argument could be made for the imitation of triton shells, which as a deeper water species, may have only rarely turned up on the shore.[778] These will have been collected by divers.[779] The physical act of diving and searching for marine molluscs may have opened up a new dimension of visual experience, transforming the sea from a

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[776] Karytinos 1998, 112–113; Yule 1980, 118–176.
[777] Manning 2008, 114; Whitelaw 2004, 236–237; Renfrew 1972, 291–296.
[778] Karali 1999, 22.
[779] Papadakis 1983, 58–65.

flat, liquid space to a place with topography and order.[780] The significance of triton shells in representation and use in a range of contexts has rightly been linked to their predatory power,[781] and the representation of marine molluscs in both life and death may be linked to their powers as metonyms for the sea. As mollusc shells wash up on the beach frequently, the representational focus may have been on shells in a dead form, rather than as animate animals. An exception, however, are representations of argonauts, which usually include the living animal, suggesting differing rules for the representation of different marine creatures. By contrast, fish are always represented as animate. The representation of different marine animals, therefore, may suggest differing levels of engagement with the sea from the embodied, as evinced through the representation of fish, dolphins, triton shell and cephalopods to solely littoral interaction as shown in the representation of other marine mollusc shells.

Cephalopods, like dolphins, could have attracted interest as a result of their sentient and transformative behaviour.[782] A significant number of cephalopod representations come from funerary contexts. The octopus has been linked to regeneration by several commentators.[783] While the octopus can regenerate tentacles, it is unlikely that this was actually observed by people in prehistory, making a link to regeneration unlikely.[784] Picking out the representations from Grave Circle A at Mycenae in particular, allows for some potential explanations. In similar contexts in the Grave Circles, lions and gryphons are also represented and, along with cephalopods, may have formed part of an iconographic syntax focusing on the animals as fearsome hunters, cephalopods from the marine realm, lions from the terrestrial realm and gryphons from the mythical realm. Another possible link may be the sea as a place connected to death,

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[780] von Rüden 2015, 49.

[781] Hitchcock *et al*. 2016. At Chryssi (outside the study area), a significant proportion of murex shells bore traces of predation holes, suggesting to the excavators that marine molluscs were kept alive in baskets or basins before being processed (Brogan *et al*. 2019, 104). It is not inconceivable that some triton molluscs could have been collected alive and their hunting of other molluscs witnessed first-hand.

[782] See Caldwell *et al*. (2015) on octopus behaviour and hunting methods. Octopuses possess large, intelligent eyes, can manipulate objects beneath and above the surface of the sea with their tentacles, transform their colour to blend in (and out) of backgrounds, in addition to their blue blood and ink spewing abilities.

[783] Most notably by Marinatos (1993, 142, 195) and Laffineur (1987, 125–132).

[784] Firstly, even if an octopus was kept alive and its regenerative properties observed, it could take up to six months for a tentacle to fully regrow. Secondly, if an octopus lost a tentacle in the sea, there would be no way of knowing that a second octopus with eight tentacles was the same specimen. For these reasons, I find it unlikely that the octopus, and cephalopods more generally, were thought to have regenerative properties. The scientific experiment undertaken by Fossati *et al*. (2013, 93–99) revealed that only a small stub emerged three days after limb loss, which remained for one month, before the limb slowly regrew over the following five months.

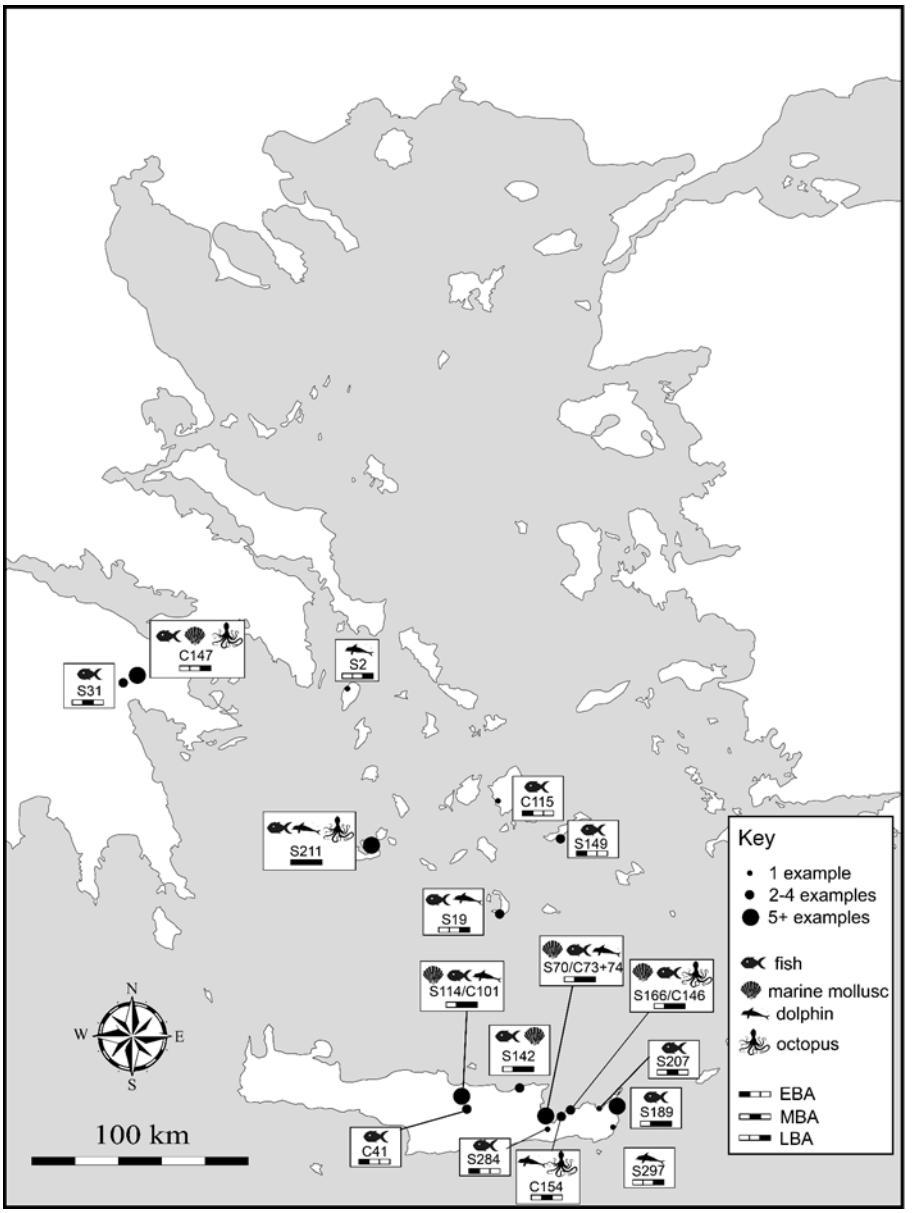

Figure 5.2. Distribution of catalogued marine animal iconography across the study area.

that the cephalopods represent the realm of the underworld, perhaps as guardians or affiliated beings. Another, more functional, explanation may be the fact that cephalopod tentacles often curl into spirals, which are recurring motifs in the iconographic repertoire throughout the Bronze Age. Given the incidences of cephalopod representation in grave assemblages and burial containers around Knossos, the Mirabello bay (Pacheia Ammos) and Mycenae in MH

II–LH I, one could suspect that cephalopods had some significant role in eschatological belief, perhaps as metonyms for the afterlife.

5.3 Fishing

5.3.1 Evidence

Limited coverage has been given to the iconographic representation of fishing.[785] The evidence for fishing imagery occurs relatively late in the Aegean iconography repertoire, especially in contrast to the early representations of seafaring and the physical evidence of fishing. The earliest hints come in the form of unprovenanced seals dated stylistically to MB II, in which marine fauna are represented with a net-like backdrop. In a green jasper seal, a central fish with a large eye is depicted surrounded by a crosshatched pattern (**5**.**107**). This crosshatch pattern has been argued to be a simple representation of the sea,[786] but is more likely a net.[787]

A similar and more convincing example comes from a clay sealing in which a fish or dolphin is depicted surrounded by a crosshatched pattern which also appears to have a thick outer structure, probably a fishing net (**5**.**108**). In another example, a seated human is depicted along with a large circular object, which appears to contain a cephalopod (**5**.**109**). This could be a crude representation of a cephalopod caught in some form of net or trap.

In another example, a large fish is represented swimming alongside a rod, from which five circular objects are attached through smaller connections (**5**.**110**). This image in itself does not make sense until compared with another series of images (Fig 5.3). All dated stylistically to MM II, the image recurs in **5**.**111**, **5**.**112** and **5**.**113** where a human figure is standing next to a rod, from which either three or four circular objects are attached. The composite implement, equal to or larger than human height in each example, is the same as shown in **5**.**110**, where it is seen next to a fish, suggesting that it has some role in fishing. Evans[788] suggested they were suspension pots and Basch[789] believed them to be rafts buoyed by empty pots or goatskins, though Powell[790] identified forty-four examples of this motif and more accurately interpreted these implements as objects connected to the capture of marine animals, in her interpretation, octopus or murex molluscs. The shape of the implement would

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[785] Though see Powell 1996, where iconography is used as part of an integrated approach alongside faunal remains and material culture.
[786] Peatfield 1995, 225.
[787] Confirming this is an MM II–III Kamares jar from Phaistos, where a fish is represented with a crosshatched net (Walberg 1986, 30).
[788] Evans 1894, 332.
[789] Basch 1987, 138–140.
[790] Powell 1996, 99–100.

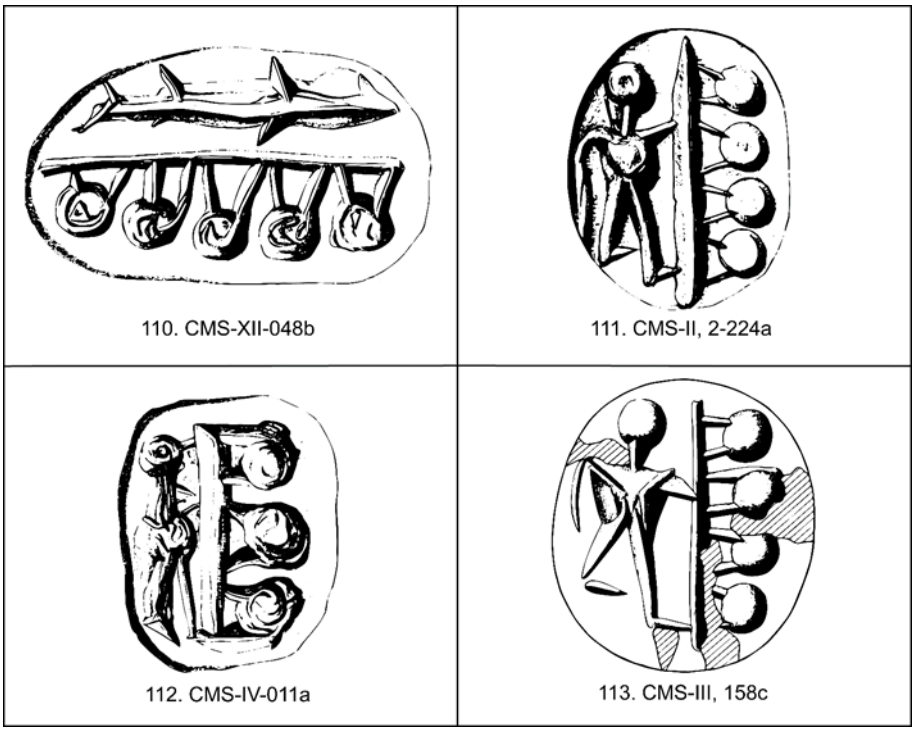

Figure 5.3. Seals engraved with a large implement, likely to have played a role in fishing, seen alongside a fish in **5**.**110**. Redrawn by author.

suggest it could be some form of long wooden stick to which vessels, either thin ceramic pots or woven baskets, were attached, which could be put out to sea and be used as fishing traps. Inside the vessels, bait and barbs could be placed, to impede the exit of the trapped marine animal. Such a method of fishing is known from ethnographic examples.[791] The majority of examples are from the "Malia steatite group" – seals suspected to come from the seal workshop at Malia – and so could elucidate a local method of fishing as iconographic parallels elsewhere in the Aegean are lacking.[792] More of this type can be seen in Appendix 5B, Fig. 8 (*Supplementary material*).

On a seal from MM III–LM I Knossos, a human figure is depicted with an octopus in one hand and a large fish in the other (**5**.**114**). The human figure is male, recognisable by the rounded shoulders and absence of a bell-skirt. Given that this scene is engraved upon a seal, it could be some form of token of

[791] Examples range from the use of woven baskets in Japan, Northern Germany, and Thailand (White 2007, 25–28), as well as the use of pottery jars tied to long lines placed on the bottom of the sea in Italy, which is effective for catching octopus (von Brant 1964, 58).
[792] Most examples come from CMS II, 2.

fishing prowess, i.e. the ability to catch both large fish and an octopus, representing some form of dominance over the marine realm. Another option is that it forms part of the individuals' identity idealised in an image.

This theme is taken further in three images from the LC I Cyclades, here considered together given their thematic unity. In the Fisherman Vase from Phylakopi, four male figures with loincloths around their waists walk in a procession from left to right (**5**.**115**). Below is a dotted zone, which may represent a sandy beach and give us the locational setting. The fishermen all carry two fish (with the exception of the second from the left), which may be dolphinfish (*Coryphaena*), given the stout and angular head/neck.[793] The vase itself is some form of stand or lamp and has been interpreted in different ways, from a mythical "return of the fisherman scene",[794] to local officials celebrating a festival[795] and adorants holding offerings.[796] The Fisherman frescoes from Akrotiri have been interpreted in a similar way (Fig 5.9). The more famous example depicts a nude youth holding two batches of fish, both interpreted as dolphinfish (**5**.**116)**, while the second depicts a similar youth holding only one batch of fish, this time some form of tunny (**5**.**117**). Initially, the presence of youths led to an interpretation of a rite of passage,[797] as well as a cult interpretation[798] though a recent convincing interpretation has moved to stress the celebration of the catch of rare fish.[799]

Also from LB I come a series of images popular on seals, which may be linked to fishing. A serpentine seal from the Temple Tomb at Knossos, carries the design of two large, stylised fish or ship-fish hybrids, with a net motif between them, perhaps implying that the fish are caught in the net (**5**.**118**).[800] A carnelian seal from Palaikastro also depicts two stylised fish with a net pattern between them (**5**.**119**). Similar motifs are known on several unprovenanced seals, most clearly seen in a carnelian seal in which a flying fish is portrayed against a background of netting (**5**.**120**). Additional examples are listed in Appendix 5B, Fig. 7 (*Supplementary material*).

5.3.2 Discussion

Fishing is represented, though rarely. It is difficult to discuss regional or chronological distributions with any certainty, given that the many examples come from unprovenanced seals, though a few salient features can be posited.

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[793] See a similar attribution from the Fisherman frescoes at Akrotiri (Mylona 2000, 565).
[794] Sakellarakis 1974, 389; Gerontakou 2007, 15–18.
[795] Mastrapas 1991, 35, no.133; 101–104.
[796] Säflund 1981, 189–203.
[797] Doumas 1987, 151–159.
[798] Säflund 1981, 189–203; Marinatos 1984.
[799] Mylona 2000, 565.
[800] This seal is dated stylistically to LM I, though it is from a disturbed MM III–LM III context.

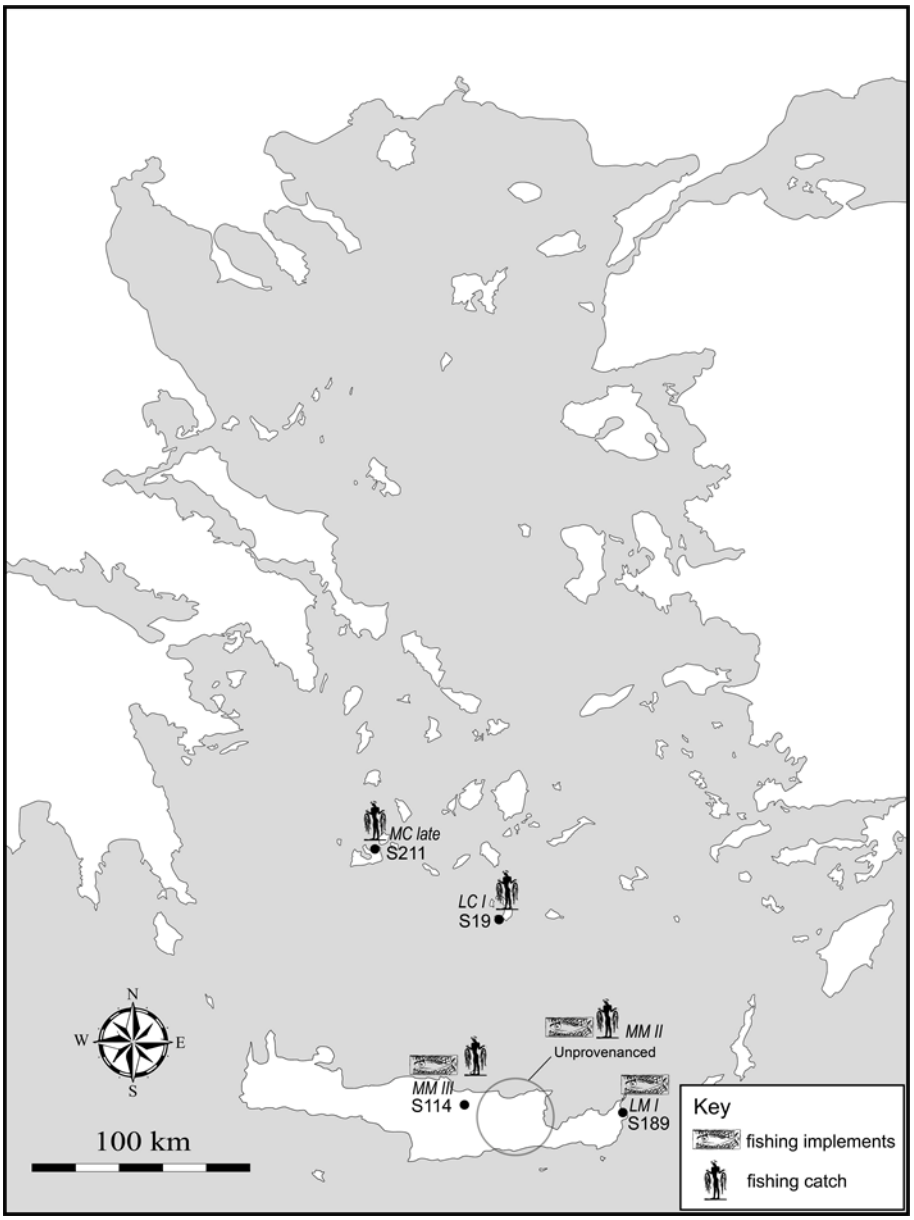

Figure 5.4. Distribution of catalogued possible or certain fishing imagery in the study area by the theme represented. Beside each is a relative phase denoting the earliest evidence for its representation.

All examples come from the southern Aegean (Fig 5.4) and, while many come from unprovenanced seals, most can be placed in the Malia steatite group, meaning that they were produced, and likely circulated, in north-central Crete. All examples can be dated after MB II, suggesting a lack of interest in the theme prior to this date. It is also recognisable that fishing iconography was

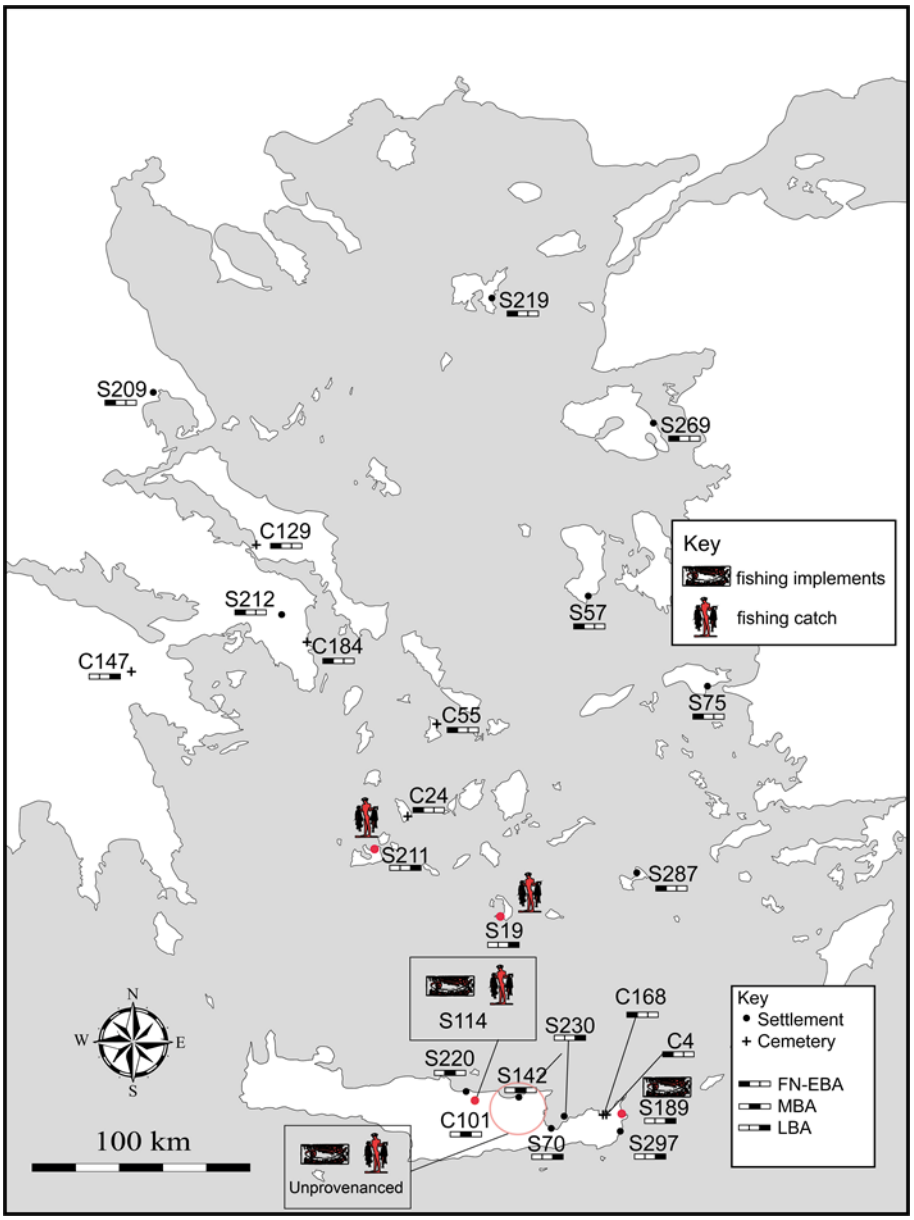

Figure 5.5. The data presented in Fig 5.4 plotted over the catalogued instances of actual fishing apparatus recovered from the study area (Chapter 3, Fig 3.1). Settlements with red circles are where fishing apparatus and fishing iconography have been reported.

only represented at specific places, rather than across the whole range of places where fishing apparatus have been located (Fig 5.5). While fishing may have been widely practiced, it may have been only at a relatively small number

of places that the act was imbued with some form of social significance above and beyond sustenance.

The evidence falls into two broad categories, representations of fishing implements (i.e. rod or net) and the display of a catch. The former, with the evidence coming entirely from seals, may have been a manner to identify occupation or social affiliation, especially as these all appear to have come from a similar region and chronological period. In this instance, they may have represented a local and specific practice, which appears to have centred on Malia and could have been intended to engender good luck for fishing ventures or aspirational ornamentalia. In the latter category, the number of media (such as frescoes and sealstones) and geographical spread is broader and the representations have a display element to them, suggesting their use as elite imagery, though notable is the absence of fishing scenes on pouring vessels or pottery generally.

The fishing scenes at Akrotiri and Phylakopi are worthy of further comment. Little can be said for the archaeological context of **5**.**115**,[801] though **5**.**116** and **5**.**117** were both found in Room 5 of the West House, where other fresco scenes were also recovered, in an adjacent room with a large quantity of loom weights, a toilet, a large number of conical cups and a tripod stand, (**5**.**58**). The space has been given a variety of interpretations,[802] although a recent analysis has stressed, through a holistic consideration of a range of data, the elite nature of the house and its likely ownership by an individual involved in textile trade.[803] The scenes, including the Flotilla Fresco (**5**.**168)**, are argued to represent a biographical narrative to the life of the owner.[804] This is a appealing interpretation, as it accounts for the contents of the rooms, the iconographic scenes and the layout of the building itself. This interpretation, however, is based more on the content of the Flotilla Fresco and the material finds, rather than the Fisherman Frescoes, which are argued in general to represent some form of dominance over the sea to promote the owners trade contacts.[805] If the scenes represent some form of narrative of the life of the owner, these fishing images may be linked to rites of passage that the individual may have undertaken during their life. A convincing case has been made for rites of passage in other frescoes at Akrotiri (Crocus Gatherer; unpublished male youths holding vessels) and this could extend to the Fisherman Frescoes as well.[806] The scenes fit well with the schema of rites of passage presented by

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[801] Barber *et al*. *forthcoming*.
[802] Interpretations have ranged from that of a shrine (Marinatos 1984), a site of "sacred marriage" (Säflund 1981) and a private house with nautical themed frescoes (Morgan 1988). See Hitchcock (2016, 18–34) for a detailed overview.
[803] Hitchcock 2016, 18–34.
[804] Hitchcock 2016, 27.
[805] Hitchcock 2016, 26.
[806] Peatfield 1995, 225.

Peatfield, such as the impurity of the socially ambiguous subject – being neither child nor adult – the importance of the margin stage of the rite of passage – the symbolic phase in which the subject is marked by nakedness – and the importance of liquid as a factor in the transformation into adulthood.[807] The tripartite scheme of division in rites of passage focus as presented are separation, margin and aggregation, though the first and last of those are difficult to portray in iconography.[808] All themes fit neatly into the representations of the fisherman frescoes. They are naked, recognisable as youths, and it is probably the important margin phase that the artist focuses on. Their catches of fish may represent some form of act of purification or "proving", in which the socially ambiguous youth transforms into an adult and member of society. The presence of water is notable, though not in the form of a libation, rather as a medium for proving, and the significance of the sea is also attested as a key stage on the transformation of the individual from childhood to adulthood. Ultimately, these images may be "tall fish" tales, designed in order to stress the skill of the fisherperson and demonstrate power within an elite context, which does not appear to be attested to on Crete.[809]

5.4. Seafaring

The representation of seafaring generally takes the form of a boat, occasionally in association with other features or human figures. Also included in this category are the skeuomorphic representation of boats. Some examples are discussed in more detail in Chapter 5.5, given their cult associations, but are briefly mentioned here, when relevant to discussion. Scholarship has focused on the theme of seafaring, from the technological aspects of boats represented,[810] cultural affiliation,[811] social contexts in which they appear[812] to possible ritual and mortuary associations of boats.[813] Boat models have also been used to discuss Bronze Age seafaring.[814] Here the focus is placed on the relationship between the evidence of seafaring imagery, their spatial and chronological patterns and how these objects relate to the material expression of seascapes.

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[807] Peatfield 1995, 226; Douglas 1966; Turner 1967, 93–111.
[808] Van Gennep 1909.
[809] Barber *et al. forthcoming*.
[810] Wedde 1992; 2000; Basch 1987. Basch (1987, 94) for example identifies eight types of boat depiction.
[811] For example, Basch (1987, 88) argues that the (Iron Age) Carians were linked to the indigenous people of the (Bronze Age) Cyclades due to the survival of a fish emblem depicted on the prow of boat representations.
[812] Wedde 1991, 81.
[813] Davaras 1984, 72–74; Vinson 1994, 50–53.
[814] Davaras 1984; Soles 2012; Papadatos 2012.

5.4.1 Rock art and pottery

Seafaring is the earliest form of sea-related image in Aegean iconography from the study area. At FN Strofilas on Andros a series of rock peckings (**5**.**121**, **5**.**122** and **5**.**123**) occur on some of the stones of walls at the settlement (Fig 5.6). The boats are stylised, large dugout boats. The scenes are likely of the same date as the settlement at large, making these by far the earliest iconographic representations of boats in the study area. After a hiatus in EB I, there is a re-emergence of petroglyphs depicting boats in EB IIA.[815] These are known from at least three Cycladic settlements and situated on terraces or fortification walls on entrance routes into the heart of the settlement. At the small settlement of Korfi t'Aroniou on Naxos, two seafaring scenes have been identified amongst several others, including processions and hunting scenes. The first portrays a small ship, similar to the type seen on frying pans (Fig 5.6), with a man holding a bow and a dagger and accompanied by a goat or donkey (**5**.**124**). The scene gives a pastoral impression with a transport of a terrestrial animal, although the bow and the dagger could indicate that the animal is being hunted. The second portrays two human figures atop a boat with a high prow (**5**.**125**: Fig 5.6). This scene could be simply two figures being transported across the sea, though we cannot rule out that the individuals are a synecdoche for a raiding party, giving the scene a potentially more sinister character. A slightly different character of rock art is evident at Vathi on Astypalaia, where a range of petroglyphs include fish, daggers, spirals and at least three boats (**5**.**126)**. The images are situated in a prominent position overlooking the acropolis area of the site,[816] where they are likely to have been visible to those entering the centre of the settlement. The mix of images is telling, daggers are located next to boats and spirals, indicating the potential for a violence in connection to the seascape. A final example comes from the site at Plaka on Andros, where petroglyphs include human heads, hands, rings and boats, though the settlement may be dated to EC III (**5**.**127)**.

Petroglyphs are notoriously difficult to date. The earliest and latest incidences listed above appear to be separated by roughly a millennium in time. It seems unlikely that all were FN and maintained relevance into EC II, though it does seem plausible that the petroglyphs at Plaka may have come from an earlier phase of the settlement, or perhaps may have pre-existed the settlement and even guided the choice in settling there in EC III.[817]

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[815] Basch (1987, 77, fig 151) presents graffito from the "Maison des Stucs" on Delos as evidence of a pre-EBA example of boats of a more primitive variety. These have been excluded here on the basis that there are other examples of graffito from the same site, which depict boats of a much more certain, and later provenance, which are beyond the chronological scope of this study.

[816] Vlachopoulos 2012, 119.

[817] *ArchDelt* 60 (2013): B2, 916–917.

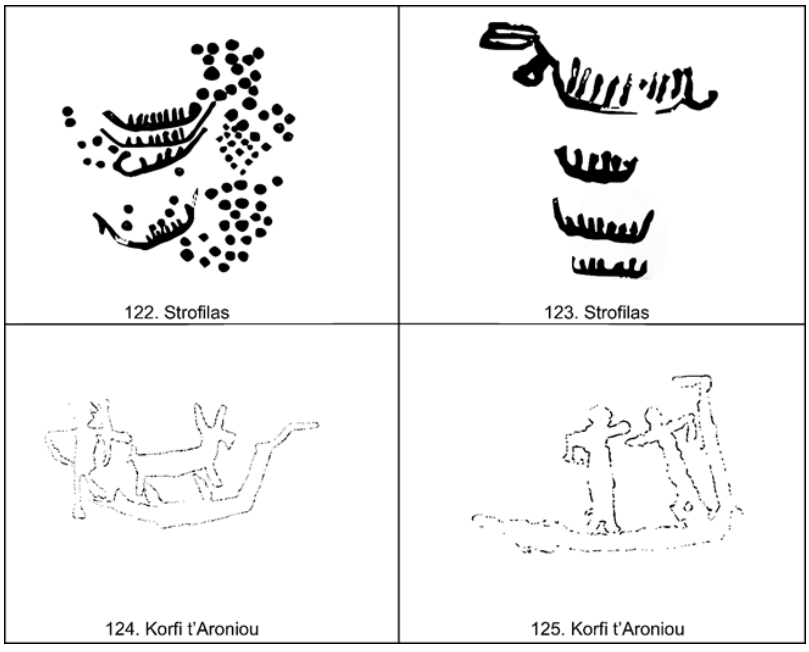

Figure 5.6. Boat representations from rock art. Redrawn by author.

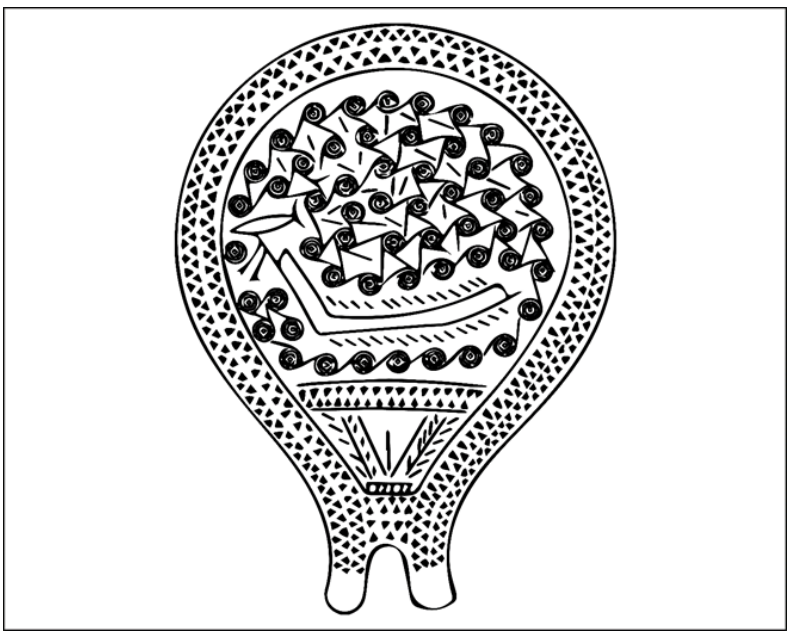

Figure 5.7. Early Cycladic frying pan (**5**.**128**) from Chalandriani on Syros. Redrawn by author.

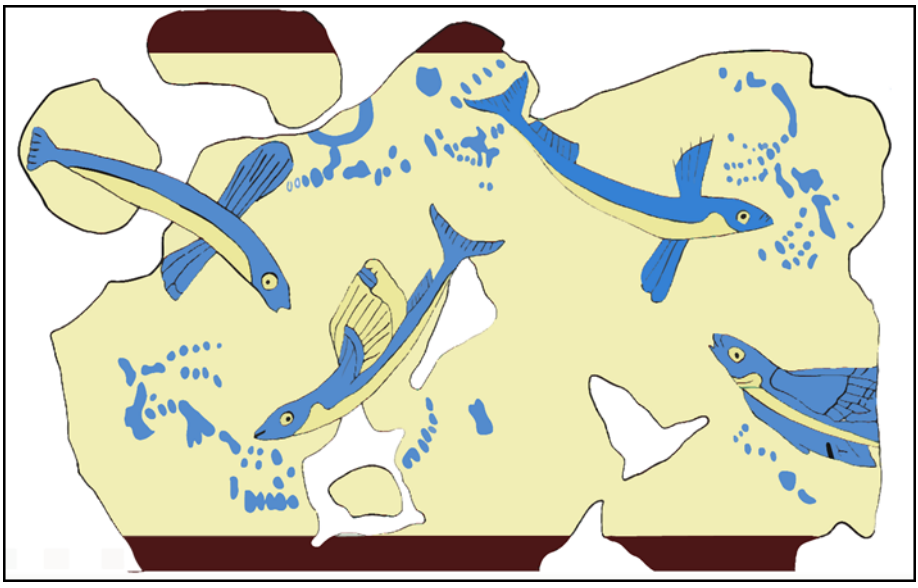

Figure 5.8. The Flying Fish Fresco (**5**.**183**) from Phylakopi on Melos. Redrawn by author.

Figure 5.9. The Fisherman Fresco from Akrotiri on Thera (**5**.**116**). Redrawn by author.

The earliest examples of seafaring scenes on ceramics are from the Cyclades, particularly from the cemetery at Chalandriani on Syros. Frying pans, many decorated with boats, were recovered from a number of tombs. The boat typically has a large prow and flat keel (**5**.**128***:*Fig 5.7).[818] Radiating from the body of the boat are often small incisions, likely oars or perhaps ripples of movement through the water. Atop the prow is always a fish emblem, with an unidentified object projecting down from the top of the prow, perhaps some form of cloth object, such as a flag or perhaps even fishing net. There are, however, some variations, such as an example with two boats depicted (**5**.**129**). The actual function of frying pans has courted considerable academic discussion,[819] though a convincing argument suggests that they were mirrors, as the application of darkened olive oil has proven to provide a clear mirror image.[820]

These frying pans are almost exclusively found in tombs and while there are several examples from Chalandriani, their total number is small (24–40 examples from approximately 1000 graves) in comparison to the total number of burials at the site.[821] It means that that the object likely referenced status or a specific group identity in the community buried at Chalandriani. Their context as grave offerings, however, give an extra dimension to their potential significance. Many examples come with an incision below the main scene, which has been interpreted as representative of female genitalia.[822] This interplay between fertility (genitalia representation), death (grave context) and seafaring (boat representation) has consequences to how we can interpret human-sea interaction amongst the dead at Chalandriani. While few in number, the significance of the frying pans may come in the representation of the sea as a metaphysically imbued place, where the dead may have been perceived as travelling to the afterlife and a place of potential return. If the blend of imagery represented on the frying pans were symbols of power deployed by a specific group, they could also represent the intersubjective beliefs of the community. Their scarcity may be a result of their deployment by a specific group in society at Chalandriani, presumably connected to the practice of seafaring, which may have restricted access to these types of material culture. The seascape at Chalandriani could have been perceived as an ambiguous place, both a place

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[818] For more detailed discussion of the typological features of these boats (Wedde Type I), see Wedde 2000, 50–52 and for more recent discussion, van de Moortel 2017, 263–265.

[819] Interpretations have ranged from drums (Varoucha 1925–6; Mylonas 1959), astrolabes (Faucounau 1978) libation vessels (Mylonas 1959; Coleman 1985; Sapouna-Sakellarakis 1987) and moulds for salt cakes (Doumas 1991).

[820] Papathanassoglou & Georgouli 2009.

[821] Coleman 1985, 205–209.

[822] Coleman (1985, 196) is dismissive of the role of the genitalia on the Frying pans, while Broodbank (2000, 253) argues for a more symbolic connection between reproduction and seafaring. See also a recent argument for a link to female menstruation and red pigment (Siotis & Aloupi-Siotis 2020, 285–296).

of death and rebirth by at least some of the community buried in the cemetery.[823]

A fragmentary but striking boat representation comes from an EC III duck vase from Phylakopi (**5**.**130**). It depicts a boat in the sea with one steering oar projecting into the sea from what is likely the arm of the steersman. The design close to the oar, of which the triangular terminal forms part, may be the body of the steersman. On either side of the boat are a series of short strokes, which could be oars, or an attempt to represent the motion of the water as it hits the side of the boat. It is unknown what two circles with dotted interiors below the front half of the boat represent. The scene is ambiguous in that it could portray a paddled longboat of the variety that are commonly represented in EC IIA seafaring scenes, as no mast is evident, though the entire scheme is incomplete. It is possible that in the missing section, a mast and curved hull could complete the scene and Broodbank draws attention to the presence of a steering oar, not present in EC IIA boat depictions, as evidence for a sailing boat.[824] Its presence here, however, could be an indication of a shift in iconographic style to represent new features, such as human figures and a steering oar, rather than a shift in technology as it is not unlikely that longer oars could have been used in longboat seafaring. This appears to be confirmed by the rock art representation of a boat from Vathi (**5**.**126**), where a steering oar is present.[825] Without conclusive proof of a sailing boat (mast), it is interpreted here as a longboat depiction, though remains an open question. Unambiguous is **5**.**131**, a body sherd of a beaked jug in matt-painted ware also from Phylakopi. Depicted is part of a boat with a mast and ropes. The key difference between the examples is that diagonal ropes from the mast are visible in **5**.**131**, while if there had been a mast in **5**.**130**, then we could expect to see diagonal ropes leading to the mast, which are not present. In **5**.**131**, a group of nine lines extending from the bottom of the ship represent oars or paddles. Towards the stern is a much larger steering oar. The scene is remarkable for its representation of a sailing boat, in an EC IIIB/MC context and perhaps is a useful illustration of the changing nautical technology during this period.

The boat represented on **5**.**131** is the last example of ceramic boat iconography of any kind in the Cyclades until much later. Given the EC focus on seafaring iconography, the abandonment of boat imagery is remarkable. As boats formed part of a powerful mnemonic suite of icons in EC IIA, the iconographic representation of masted, rather than paddled, boats may signify the clinging on to a past way of life, incorporating a new nautical technology. The subsequent lack of boat representation in Cycladic society after EC III perhaps

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[823] An incised vase handle from EH II Orchomenos is omitted here, though relevant to a wider discussion on images of seafaring in Aegean prehistory. See Wachsmann 1998, 73, fig 5.11.
[824] Broodbank 2000, 343.
[825] Vlachopoulos & Matthaiou 2014, 385, fig 6; van de Moortel 2017, 264.

implies that the social value of boat iconography decayed as a symbol of power, to be replaced by other forms of marine representation.

Ship iconography appears during the MBA on the Greek mainland. Two examples occur on Aeginetan matt-painted imports at Asine. The first is less convincing, though possibly portrays part of the rear of a boat, with a cabin raised (**5**.**132**). The second, more convincing, depicts the curved prow of the boat though only half of the boat remains (**5**.**133**). From the acropolis of Athens is a similar type of image, with a possible boat on matt painted ware (**5**.**134**). This example, while not entirely convincing, could portray the flat bottom of a boat. The most iconic examples, with no doubt as to their subject matter, come from Kolonna. The most extant example comes from a reconstructed matt-painted barrel jar where five zones of decoration are evident, separated by broad bands (**5**.**135**). In the main central register, four masted ships face to the left. Multiple short strokes with filled circles atop are likely schematic depictions of the crew. In the second example, the stern of a ship with a navigator and, presumably, a rudder is depicted (**5**.**136**). Once again, vertical lines topped by filled circles represent the crew, but this time each person wields both an oar and an upright spear (Fig 5.10). An atypical example comes from the matt-painted body sherd of a large vessel, possibly also a barrel jar. Here a male figure is depicted standing atop what appears to be a fish or dolphin (**5**.**137**). The face of the dolphin or fish may be an apotropaic device placed atop the prow of a ship and there appears to be a double line, which would fit exactly where a mast would be expected. That no sail is depicted is irrelevant, as it is not represented on **5**.**136** either.[826] If this is indeed an emblem on the boat, it is an interesting continuation of the depiction of fish on the prows of boats such those seen in EC period depictions (**5**.**128)**.

There is an interesting mix of concepts in these Aeginetan marine depictions on pottery. Firstly, the representations depict only seafaring; no marine animals are included in the sea alongside the ships. This implies that the significance of the sea was less as a source of knowledge or sustenance, rather more as a place to be traversed, a flat surface to control. Secondly, there are representations of humans in tow, a rarity in marine representation in Aegean prehistory, which suggests that human agency, in relation to the sea and seafaring was significant, adding credence to the significance of the sea as a place to perform seafaring. Thirdly, the militaristic character of the scenes are implied, with **5**.**136** representing human figures equipped with spears. Fourthly, we can add the examples from Asine to this material as Aeginetan ceramic

[826] For more detailed discussion of the typological features of these boats (Wedde Type III), see Wedde 2000, 41–45 and for more recent discussion, van de Moortel 2017, 267.

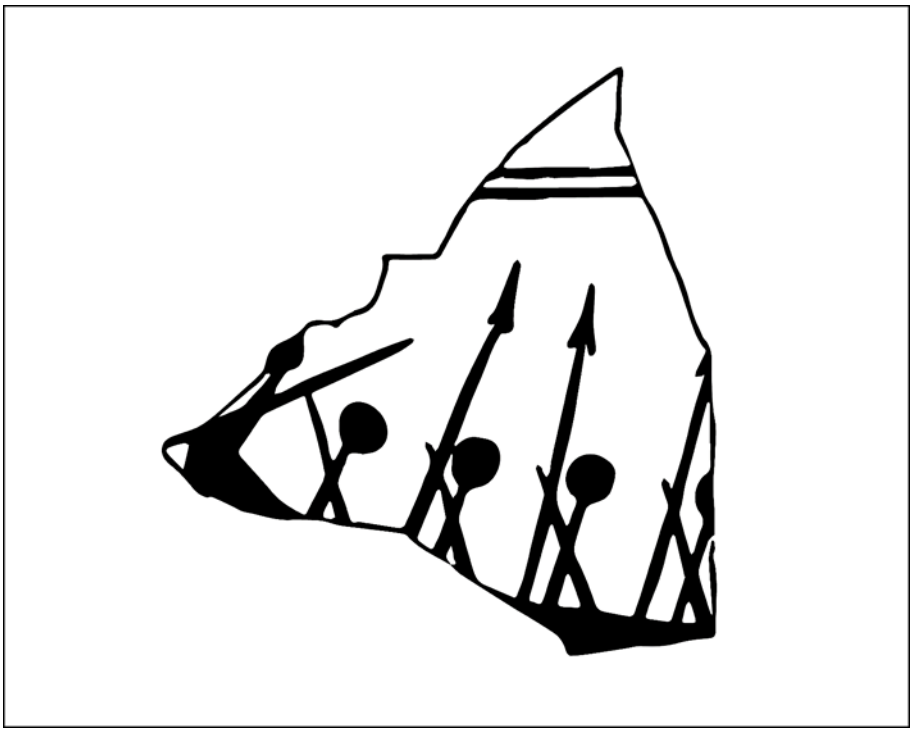

Figure 5.10. A seafaring scene (**5**.**136**) on an MH II matt-painted sherd from Kolonna on Aegina. Redrawn by author.

imports, suggesting the representation of boats on ceramics may have originated with Aeginetan potters. Finally, the chosen media for the seafaring scenes found at Kolonna are not frescoes or fine-ware drinking vessels, but barrel jars, an agricultural produce storage vessel. This is vital in understanding the significance of marine representation at MBA Kolonna. This mix of features imply that Kolonna put a significant social emphasis into seafaring, as well as military ventures and may have either conducted raids on communities in neighbouring regions, or have even maintained some form of control over the Saronic Gulf (Chapter 2.10.1) and links well with the distribution of Aeginetan ceramics known across central Greece during this period.[827] This control may have allowed inhabitants at Kolonna to obtain tribute or requisition grain stores from neighbouring communities, among other items. This is evident in the expression of wealth in the MH II shaft grave at Kolonna, where several prestige items and weaponry were included, implying a large network of contact and an interest in martial display and, potentially violence.[828] Taken as a sum, the iconographic scenes may imply that agricultural surplus was

[827] Rutter 2001, 126–127, fig 12; Tartaron 2015, 36–37; Gau & Knodell 2020, 242–262.
[828] Kilian-Dirlmeier 1997.

obtained through control of the seaways surrounding Aegina and thus were appropriate for the decoration of storage jars. The inter-subjective significance of the sea to the community at Kolonna may well have been as a place to enact control through seafaring and violence and underscored the prosperity of the settlement.

Other examples of boats are rare outside Kolonna. On a series of sherds of the same matt-painted vessel found at late MBA Iolkos, parts of two sailing boats are represented (**5**.**138**). The right fragment portrays the outline of a boat with a butted stern, as well as a series of strokes emanating from the body of the ship, representing either oars or the movement of the water. Inside is a zigzag pattern, likely a depiction of the interior of the boat. From the angle of the vessel exterior, this boat does not have the same profile as those from Crete, which generally have prows on both sides of the boat. The left fragment shows more or less the same area of a second boat, though also evident is a large, thick line, reconstructed elsewhere as part of a large steering oar.[829] The two fragments are entirely unlike contemporary representations from Crete and slightly earlier ones from Kolonna.

5.4.2 Boat models

Another method of representing seafaring comes in the form of boat models.[830] These are particularly concentrated on Crete and the earliest within the study area is from EM I Petras Kephala. The model is made of terracotta and was found in a building complex (**5**.**153**). A concentration of boat models are evident from EM levels at Mochlos on Crete. From EM IIA, an example originally interpreted as a clay model of horns of consecration, may equally well be a boat with high stern and prow (**5**.**155**), given its similarities with the boats represented in **5**.**121**.[831] The model was found beneath the western chamber of Tomb IV/V/VI, interpreted as an ossuary, and may have held a special significance to be deposited in a funerary context.

Another model at Mochlos, this time made from sandstone and found in a mixed deposit, was dated to EM II because of similarities with early models (**5**.**156**). Another example has a raised prow and short projections at the base

[829] Theocharis 1958, 15.
[830] Examples are rare in the Neolithic, though there is a Middle Neolithic example from Tsangli in Thessaly, outside the chronological scope of this study. See Marangou (1990, pls. IV, VIIb–IXd). The same is true for another Middle Neolithic example from Knossos (Theocharis 1973, 316). There is also a range of examples from southeastern Europe in the Neolithic (Marangou 1991, 22).
[831] Gray 1974, 15; followed by Soles 2012, 195.

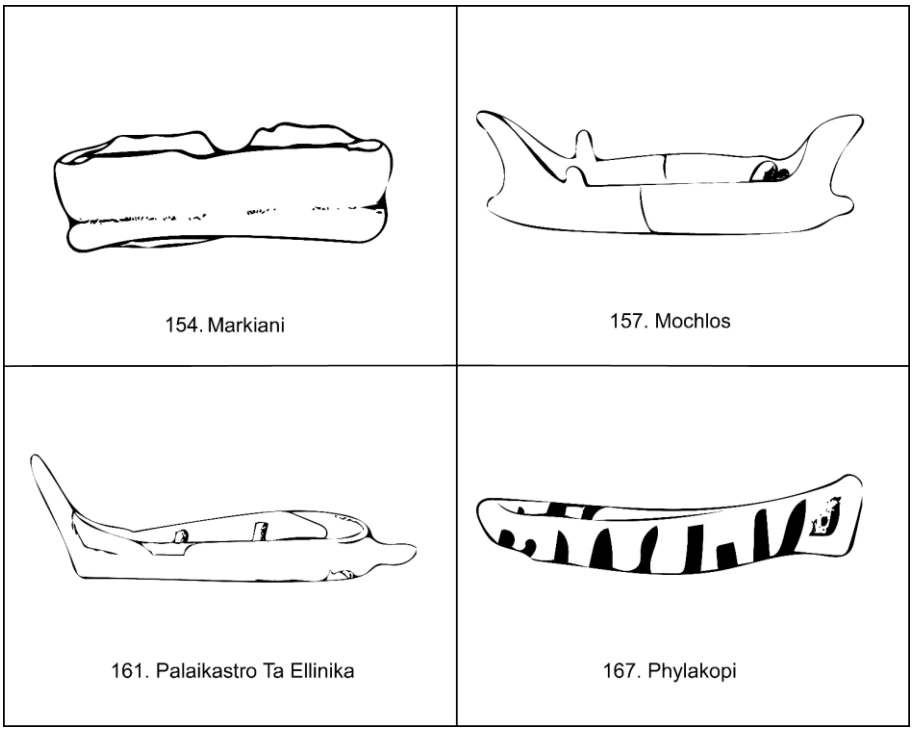

Figure 5.11. Boat model examples. Redrawn by author.

of each end (**5**.**157**). It was found in a mixed EM II–MM fill inside a later LM I building. Two further examples (**5**.**158** and **5**.**159**) were found together in a small, stone lined EM IIB "bin" in the corner of Prepalatial House 2, along with utilitarian pottery, such as bowls and jugs. Both are similar with a straight, flat deck and raised stem and stern post, likely representing a dugout or skin boat. The location of the stone lined bin may suggest some form of foundation deposit. A further example (**5**.**160**) was found in an EM IIB funerary complex built over EM I habitation remains. The room, used in EM II for a funerary function, contained a clay *kernos* to receive offerings, the boat model being one. It was broken in half, possibly purposefully. The model has a flat base and three grooves running parallel to its gunwales. An example recovered from Palaikastro ta Ellinika (**5**.**161)** has a raised prow, a projecting rudder at the stern and two thwarts (Fig 5.11). Like **5**.**155**, it was found in an ossuary, where it accompanied human remains and grave goods from expropriated tomb chambers.

Outside Crete, a possible boat model with a distinct keel and asymmetrical ends (**5**.**162**) was found at EB I–II Thermi on Lesbos. A terracotta example from EC I–II Markiani on Amorgos has been argued to represent a skin boat (Fig 5.11), rather than a dugout canoe or longboat (**5**.**154**). Another was recovered at EC IIA Agia Irini, with the model having a peaked prow and white

painted zigzags on the interior rim (**5**.**163**). A stone example comes from the Kaparis Tomb, close to Phylakopi, though no context is known (**5**.**164**). It was dated to the EBA on stylistic grounds.[832] Most examples catalogued in this study come from Crete, suggesting an increased general importance of seafaring to EM social dynamics, particularly between EM II–III.[833]

Boat models become increasingly rare after the beginning of the MBA. One terracotta boat model was found outside Building H at Zakros in a MM II–III context. The boat carries a small human figurine at the front and has as two masts (**5**.**165**). Two late MBA boat model fragments were recovered from Phylakopi. The first is a fragment of a prow or stern of a boat (**5**.**166**). Little of this remains, though the curved lip and the remnant of the bottom of a stern suggest it was part of a boat model. The second model is decorated with paint on both the interior and exterior and, in contrast to contemporary iconography on Crete, likely represents a small dugout boat, rather than a sailing boat (**5**.**167**). It was dated to the MC period on the basis of the painted decoration (Fig 5.11).[834] Additional examples of boat models found in cult contexts are discussed in Chapter 5.5.3.

5.4.3 Seals and Sealings

Seafaring is represented on Cretan seals and sealings from MB I onwards. One of the earliest examples is on an unprovenanced seal depicting a masted ship with ropes and oars (**5**.**140**).[835] Another example from Plateia A at Mochlos shows a boat on a black steatite four-sided prism (**5**.**141**). It was recovered from an LM IA level, but has been dated stylistically to MM II.[836] The boat has a sail with a high prow and mast, forming a triangle with oblique lines representing the oars. A similarly dated steatite seal from House B11 at Palaikastro bears the engraving of a sailing ship with mast, high prows and lines representing the oars (**5**.**142**). Three further comparanda are known from the Atelier de Sceaux at Malia. The first is a complete steatite seal (**5**.**143**) on which a boat similar to **5**.**141** and **5**.**142** is portrayed. The two others are incomplete and only parts of a mast and high prowed boat is discernible on each

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[832] Also noted were four lead boat models from Naxos, though their authenticity has been challenged and are therefore excluded here; see Sherratt 2000, 102, 106.
[833] Davaras 1984, 59–60; Vavouranakis 2011c, 101–108. With the exception of the examples from Palaikastro and Petras, the others from Crete were outside the geographical scope of this study. These include examples from Christos, Myrtos Pyrgos and an example from the Mitsotakis collection.
[834] Zervos 1957, pl. 230.
[835] Weiner 2013, 164, fig 12.4. This is referenced by Weiner as having been recovered in a MM I context, though it is not mentioned at which settlement, nor are any references provided for this example.
[836] Soles 2012, 192.

(**5**.**144** and **5**.**145**). In addition, several unprovenanced seals dated stylistically to MM II are known (e.g. **5**.**146**, **5**.**147** and Appendix 5B, 9–10).

A small chalcedony seal decorated with a central sailing boat motif was recovered from the MM III Tomb III at Mochlos (**5**.**148**). The boat has a central mast and ropes attached to the mast in a triangle, akin to MM II examples, though this example also has one end of the stern raised much higher than the back end. From the boat are small lines, denoting oars. To the left appears some form of offering table, with horns of consecration above and a star motif between the legs of the offering table. In panels above and below are interlocked spirals that could represent the motion of the sea. The offering table situates the other marine elements in a ritual context.

At the start of the LBA, a new form of ship representation emerges, that of the cabin boat.[837] A seal from the Chrysollakos at Malia portrays the base of a boat, a high prow, strokes emanating from the hull representing oars and a built cabin towards the rear of the boat, including large posts and an interconnecting crosshatch pattern (**5**.**149**). This design is paralleled in some unprovenanced seals (**5**.**150** and **5**.**151**), and the full range can be seen in Appendix 5B, Fig. 11, though non-cabin boat representation is not abandoned entirely (see **5**.**152**). In **5**.**152** the actual sail of the ship appears to be rolled up towards the top of the mast, which is a rare representation of an actual sail.

5.4.4 Frescoes

By the beginning of LB I, seafaring scenes appear on frescoes in the Cyclades. The most famous seascape scene from the study area is that painted on the walls of Room 5 of the West House at Akrotiri, the so-called Flotilla Fresco (**5**.**168**). Discussed above already, the fresco has been interpreted as part of a narrative, with a flotilla of ships leaving the 'Departure Town' depicted to the left and arriving at the 'Arrival Town' to the right.[838] The scene has been described at length by several commentators, so only a summary is presented here.[839] Human figures in the 'Departure Town' watch the ships start out, while above and to the left are representations flora, fauna and topographical features. To the right of the town a seascape is represented, in which eight large cabin boats are depicted, each containing human figures. Some ships appear to be more grandiose than others and the presence of *ikria* (raised platforms) on some boats suggests an elite and processional element to the scene. In and amongst the ships only dolphins are depicted, lending to the fantastical

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[837] Omitted here is the LM IB Ship Cup from Mochlos and an example of an incised LM IB *pithos* (Soles 2012, 188–189, figs. 21.2, 6). Also omitted is part of a clay boat model from the Pillar Crypt in LM IB Mochlos, as well as a stone example (Soles 2012, 188–191, figs. 21.3–4).

[838] Initially by Marinatos (1974, 44–57), who suggested a voyage to Libya.

[839] Morgan 1988; Marinatos 1974, 40–44; Doumas 1992, 47–49.

nature of the scene and, as mentioned above, a way to render the deeper pelagic sea. Along the way is an 'Intermediate Town', which is depicted before the boats approach the ornately decorated 'Arrival Town'. A range of interpretations for this scene has been offered, ranging from a voyage,[840] scenes influenced by oral poetry[841] or a local ceremonial procession.[842] A ceremonial interpretation appears most probable due to the presence of ornate ships, a multitude of spectators and the likelihood of a local topographical setting.

The same room (Room 5) also contains the Miniature Fresco, depicting armed men with boar tusk helmets and shields marching to the right, away from a town, while below, naked men drown in the sea between minimally three boats (**5**.**169**). This scene stands in contrast to the more jovial nature of the Flotilla Fresco and represents the aftermath of some form of sea battle, as well as perhaps a siege or sacking of a coastal town.

An additional seafaring scene is probably depicted in a fresco fallen from a second story of the North-East Bastion at Agia Irini. Male and female figures, deer, a town, the sea and a boat have been recognized (**5**.**170**). Although no complete reconstruction can be offered, it begs the question as to whether the scene may have resembled the Flotilla Fresco at Akrotiri, representing a populous coastal town and a boat-filled seascape, likely to have been a key feature of LC IA.

Taking these examples together, different characters to seafaring are represented, from the ceremonial and peaceful nature of **5**.**168** and possibly **5**.**170**, to the more violent **5**.**169**. As objects of elite consumption, these frescoes represent a connection or interest in the sea and seafaring by those commissioning their construction, as well as a potential indication that prosperity or destruction of a settlement was beholden to the sea. They are also an indicator that the sea was likely a *place* in which ceremonial practices could be performed, rather than a voided *space*.

5.4.5 Discussion

Seafaring as an iconographic theme occurs throughout most phases of the study period. The petroglyphs all occur at FN–EBA coastal sites in the Cyclades and are located at sites along probable sailing routes. A simple explanation could be that the iconography was simply a record of "things seen" from the settlement. This, however, does not give full credit to the complexities of rock art in prehistoric societies.[843] The appearance of FN rock art at a settlement like Strofilas on Andros was accompanied by a corresponding preference

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[840] Negbi 1994; Shaw 2000.
[841] Boulotis 2005; Watrous 2007; Cline & Yasur-Landau 2007.
[842] Niemeier 1990; Sakellariou 1980, 150–151; Morgan 1988, 143–145.
[843] For example, Ingold (2000, 130) argues that there was a lack of a division between "ecology" and "art" in representation of rock art.

for defensive settlements and the probable emergence of longboats in the northern Cyclades, creating friction that led to social change in the region and in particular the expression of seafaring as a vital component life in less arable, defensive locations. The EBA petroglyphs incorporate a number of different images, of which boats are one of the major groups. Their recurrence would suggest the significance of the boat in the lifeways of people at these places. Also depicted are terrestrial animals, fish, daggers (violence), spirals (?sea) and anthropomorphic elements. Their positioning, often on key movement routes through the centre of the settlement or upon the entrance to the settlement itself, as well as rendered on a communal venture such as fortification walls, would seem to betray a greater significance. Taken together this suite of motifs could form a package of power representation, where connection to, violence through and sustenance in connection with the sea, were part of communal expression and an indication of the intersubjective significance of the seascape as a place of seafaring to society. The public representation of motifs like these at settlements for roughly a millennium shows their enduring significance.

Boat models are found predominantly in the southern Aegean in the EBA and it may be unsurprising that they are found in association with coastal communities. Remarkable, however, is the fact that none have yet been published from the EBA Greek mainland or Saronic Gulf (Fig 5.12). The shifting contexts suggest that these models served multiple uses. Their inclusion in tombs has been linked to a belief in the boat as a symbol of the journey to the underworld.[844] They also served as possible votive offerings, suggesting a link to transcendental belief and ritual practice,[845] though it is hard to escape also more quotidian possibilities, such as their use as toys,[846] or indicator of profession.[847]

It is clear that the areas in which boat models were used were part of wider contact networks, where the paddled boat gained social prominence. There does not appear to have been a universal meaning behind the use of boat models and therefore they can be useful indicators of the multiplicity of significance that the sea and seafaring can have in varying communities. What they do serve to illustrate, at least, is that seafaring was in some way socially significant to parts of EBA society and may have been a method of generating status. For the MBA and LBA, however, their significance seems to become

[844] Schnier 1951; Davaras 1984, 72–74; Vinson 1994, 50–53.
[845] Wedde 2000, 209; Soles 2012, 197.
[846] Soles 2012, 198.
[847] Grinsell 1941, 360.

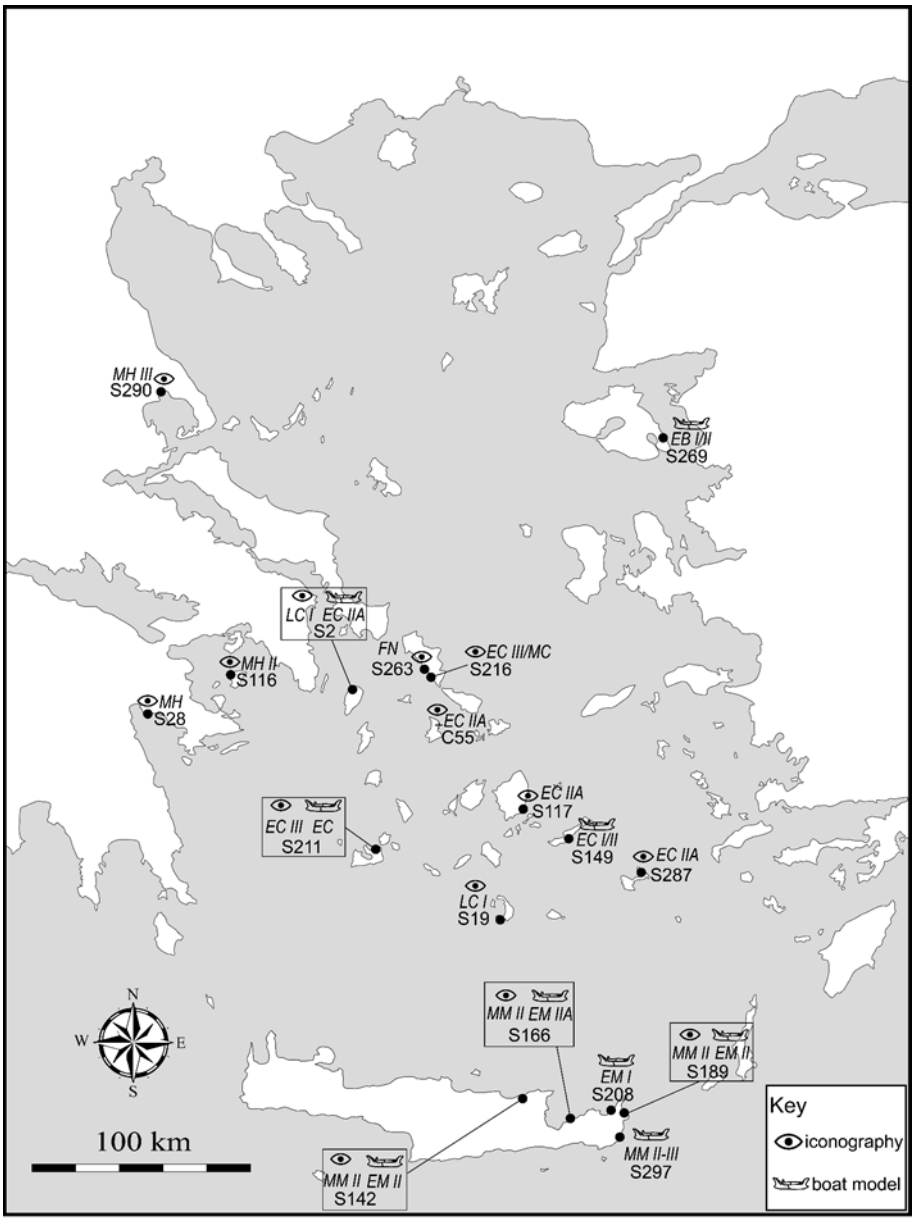

Figure 5.12. Distribution of catalogued seafaring imagery from the study area. The relative chronology denotes the first instance of the theme represented from the settlement.

the domain of cult practice on Crete, discussed below, though perhaps in relation to propitiation.

The emergence of seals decorated with masted boats coincides with the establishment of the first Minoan palaces. This does not seem to be a coincidence and it is notable that boats of any kind are rarely represented in the Prepalatial period (EM I–EM III). It is suggested therefore that masted ships may have become a representational subject associated with the social strategies of newly formed elites.[848] A connection between elite status, seafaring and island centres is further elaborated in several of the frescoes from the Cyclades. It also, however, further solidifies the power of marine subjects as elite symbols, particularly during a period in which cross-Aegean contacts were at their most intense, as well as betraying the intersubjective significance of the sea to the lifeways of the inhabitants at Akrotiri in LC I, to which prosperity and survival was dependent.

5.5 Cult performance

The final thematic section of this chapter addresses cult performance. The theme is broad and includes scenes of a suspected cult character as well as marine objects found in suspected cult places. As a result, it includes objects types and scenes relevant in earlier sections, though I argue that their deposition within a ritual context gives them added significance. The evidence centres on Minoan Crete, but also includes the later periods of the Minoanised southern Aegean. Possible associations between the marine world and cult has been visited by several commentators, particularly for Crete, though rarely as the central focus of research.[849] The significance of the marine world to Minoan society has been assessed as anywhere between minimal,[850] to significant.[851] A particular focus has been placed on LM IB Marine Style pottery and its possible cult association, derived from its recovery from shrines and a range of cult contexts.[852] Though outside the chronological scope of this study, Marine Style pottery serves as a potential latest chronological limit for the introduction of marine representation in cult contexts in the Aegean, allowing for an exploration of the context in which marine imagery emerges on Crete and how pervasive seascapes were to the performance of cult, temporally and spatially.

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[848] Broodbank 2010.
[849] Evans 1921, 519.
[850] Vandenabeele 1991, 250
[851] Boulotis 1987; Mountjoy 1985. See also Saunders (2008, 303): "The marine world permeated every aspect of daily life, from the artistic, ritual and social spheres, to the final and darkest sphere of death itself".
[852] Mountjoy 1985.

5.5.1 Iconography

The earliest possible cult scene including marine elements comes from Knossos. A MM I polychrome light-on-dark bowl is decorated with fish swimming around a miniature raised basin (**5**.**171**). Although the find circumstances of the bowl are unknown, the depicted basin has led to a cult interpretation.[853] An unprovenanced agate seal, dated stylistically to MM II–III, portrays two fish next to a double axe, a possible bird and what appears to be some form of loop handled vessel (**5**.**172**). The double axe is a well-established religious icon, so its coexistence alongside two fish hint towards a cult association in this context.[854]

From MM III onwards, a concentration of marine iconography is evident at Knossos. A sealing found in the Domestic Quarter depicts a human figure, probably female, with an arm outstretched towards a triton shell with a figure-of-eight shield below (**5**.**173**). Several sealings are also known from the Temple Repositories. In another, a triton shell is preserved in the centre, surrounded by other elements difficult to reconstruct (**5**.**174**). Other scenes depict marine content, including a crab (**5**.**175**), a dolphin (**5**.**176**) and a group of three fish (**5**.**177**). A unique sealing from the same context portrays a human male in a bracing pose atop a ship, while what appears to be a sea monster attacks (**5**.**178**). The sealings in the Temple Repositories attest to the significance of marine themes to the performance of rituals at MM III–LM I Knossos. Unfortunately, many have now been lost.[855] They represented personal insignia of officials, pointing toward a concentration of marine iconography within a cult and elite environment at Knossos. **5**.**178** takes the subject matter towards mythical territory, with the beast represented not easily identifiable and likely mythical. The representation of triton shells alongside real and skeumorph tritons from similar contexts establishes a link between this marine shell and Minoan cult. In particular, **5**.**173** has been used to suggest the use of triton shells as trumpets, though the representation is vague and could also show the use of triton shells as libation vessels (Chapter 5.6.2).

Important in these contexts is the so-called Dolphin Fresco (**5**.**179**). The fresco was recovered from the Queen's Megaron, the interpretation of which has been fraught with difficulty.[856] It was originally thought to have been found *in situ*, though it has also been suggested that it fell from a room above.[857] Added to the difficulty is the fact that little of the fresco was recovered prior to its reconstruction and so there are at least two different versions. The traditional interpretation shows two dolphins, facing opposite directions, with

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[853] Evans 1921, 182, fig 131b.
[854] Nilsson 1927, 194. See also MacGillivray 2012, 115–126.
[855] Weingarten 1989, 39, no.2.
[856] Koehl 1986.
[857] Hood 1971, 79.

smaller fish swimming between them. Uncertainty has also led to doubts over its dating, varying between MM III and LM III, though it seems that the Queen's Megaron may have also functioned as a cult place. While uncertainty persists, the representation of dolphins is clearly a theme important enough to have been committed to a fresco painting.

Marine iconography in cult contexts is also a feature of extra-urban shrines. In the Patsos Cave, part of a LM I stone object incised with a ship was found (**5**.**180**). The object may be a libation table and inside the cave were also found a range of votives.[858] A bronze plaque from Psychro Cave is decorated with a scene including a fish, bird and a horns of consecration, alongside a dancing human figure (**5**.**181**). The contexts in the cave have been heavily disturbed and the plaque could date to anywhere between MM IA and LM III. The cult associations of the horns of consecration are well attested, as are depictions of ritualised 'frenzy', hinting that birds and fish may have also formed part of this ritualscape.[859] A final example is a seal stone engraved with a large octopus (**5**.**182**), found in disturbed MM I–LM III contexts at the Mt. Juktas peak sanctuary.

Two examples are known outside Crete as well. The Pillar Room at Phylakopi, a probable shrine, was adorned with two MC late–LC I frescoes both with marine elements.[860] The Flying Fish Fresco has already been explored in terms of the fish represented (Fig 5.8), though its presence inside of a shrine is important (**5**.**183**).[861] Flying fish are pelagic and may have been a subject of interest given that, unlike other fish, they can appear to "fly". This may have been the reason they were given meaning in cult contexts. A range of possibilities exist to explain their significance in these contexts. The spectacle of fish in flight may have been representative of the bounteous nature of the sea, akin to the representation of fields full of wheat before the harvest. Alternatively, to catch a flying fish may have bestowed fishing/hunting prowess. Another possibility is that flying fish represent a blending of two separate spheres of existence (water/air). We can see from Cycladic iconography that both fish and birds were commonly depicted and the flying fish may have been perceived as a hybrid of the two, a special animal.[862]

In the same room as the Flying Fish Fresco was an additional fragmentary fresco, in which the sea was coloured blue (as opposed to yellow in the Flying Fish Fresco), where "sea-eggs", as well as scant remains of fish scales were

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[858] Warren 1966.
[859] For the "frenzy" as part of Minoan religion, see Evans (1930, 68–69), Nilsson (1950, 275); Warren (1981) and Morris & Peatfield (2004, 35–59).
[860] Hood (1978, 5) has redated these contexts to LB IB, though given the uncertainty, they are included in LB IA here, given that marine scenes are already attested at Akrotiri in secure LB IA contexts.
[861] See Marinatos (1993, 87–98) for an in-depth analysis of Pillar Crypt shrines on Minoan Crete.
[862] Nikolakopoulou 2010, 213–222.

depicted (**5**.**184**). It seems clear that a marine scene was again represented and lends additional weight to the importance of marine scenes, and in particular animals, to the performance of cult at Phylakopi. Noticeable at this settlement is a shift from an ambiguous figurative representation to more naturalistic representation. This could simply have been due to increasing Minoanisation, though there are no Cretan frescos including flying fish and so we could witness at Phylakopi a more localised significance to this particular creature and a possible metarepresentation of the pelagic sea.

None of the unprovenanced seals from Crete portray certain cult scenes, though there are hints at cult scenes in a small number. Two seals depict a standing female figure, holding a fish in each hand (**5**.**185** and **5**.**186**), while a third seal the female holds only one large fish (**5**.**187**). These scenes have been connected to the *Potnia Theron* (Mistress of the Animals) deity, usually depicted with terrestrial animals.[863] Usually, the scenes refer to wild, dangerous and mythical animals, which are tamed in order to show her dominance over the natural world. The use of fish may show that this realm was also under her command and significant to ritual belief. By extension, it also suggests that the hunt for large fish may have been a power-generating venture, which could provide some wider context for the use of marine animals in talismanic seals. We must not forgo the possibility that these were meant to be taken at face-value, that these are scenes involving fishing, or the moment before the fish were processed, which could have included both sexes.

A gold ring from Amnisos depicts a scene involving a boat upon which a tree is represented, which appears to be greeted by a tall male figure and a female figure with skirt to the left (**5**.**188**).[864] A female figure stands atop the prow of the boat, or is some form of deity descending from the sky. There are some similarities with a gold ring from Mochlos, which depicts a female figure seated upon a boat, close to an *ikria* containing a tree, which appears to be moving landward (**5**.**189**). Upright posts to the left may be part of a building façade. These scenes belong to a larger group associated with ecstatic trance as part of "epiphany scenes"[865] and as prestige items they may have represented some form of cult activity or even shamanism by elites.[866] The combination of the boat and the female figure has been linked to a Minoan "tree goddess" who may have had a protective power over the sea and voyaging in Minoan Crete, possibly adopted from the Near East.[867] This supernatural patronage has been argued to have emphasised the land-based power of the Minoans over to the sea in link with elite involvement in seafaring and the wider context of thalassocracy. The argument is convincing and represents a form

[863] Nilsson 1927, 75.
[864] Tully 2018, 1.
[865] Hägg 1983, 184–185; Tully & Crooks 2015, 138.
[866] Tully & Crooks 2015, 142.
[867] Tully 2018, 8.

of domestication of the sea. Since ships were made predominantly of wood, a land-based material, some elite Minoans may have seen it fit to link ships and seafaring to a tree goddess who maintained her authority over trees even when outside her land-based domain.[868]

5.5.2 Libation

Marine objects are occasionally used for libations. From early MC Phylakopi comes a nippled ewer decorated with winged "goblins", consisting of an anthropomorphic face connected to a circular body with large wings and feet with claws, as well as a long curved tail (**5**.**190**). Between the winged goblins are stylised, hatched fish. The winged creatures are enigmatic and probably mythical, though their relation to fish, and therefore the sea, is important. Perhaps the creatures are anthropomorphised birds or bird/human hybrids, or part of a mythical scene set on the sea. It may not be a coincidence that the scene occurs on a nippled ewer, a vessel associated with domestic/household ritual and in particular fertility.[869] The fact that these vases have swollen centres, necks and breasts, constitutes another possible link between the marine realm and the female/reproduction in the prehistoric Cyclades, as previously seen in EC II frying pans. As a general type, these pouring vessels likely played a role in ritual cleansing or libation. Most carry designs of birds, rather than fish, which makes **5**.**190** an exceptional example. Figuratively decorated and intended for ritualised use, probably in a communal setting, the significance of the sea is attested to either in relation to ritual belief or to group identification.

A recurring feature of cult contexts on Crete is the skeuomorphic imitation of triton shells in a variety of materials. Natural examples have been interpreted as a trumpets,[870] a ceremonial summoning horn[871] and as vessels, though what of imitations of triton shells in other media? The answer may be found in a chlorite shell recovered from the Palace at Malia, engraved with a scene depicting Minoan *genii* upon a singular platform (**5**.**192**). The smaller *genius* pours liquid from a double spouted ewer onto the paws/hands of the other, giving an iconographic representation of a libation.[872] Yet further still, the object itself had a hole in it, giving us a material and iconographic reinforcement that this objects served as a *rhyton*.[873]

The earliest skeuomorphic triton shell is a terracotta example from MM I–IIA Gournia (**5**.**193**). Two MM IIA examples in the same material are known from Knossos, one from the Miniature shrine (**5**.**194**), and another from the

[868] Tully 2018, 8.
[869] Marinatos 1984, 176; Tyler 2012.
[870] Cameron 1961, 94.
[871] Gill 1985, 79.
[872] Baurain & Darque 1983, 6–20.
[873] Logue 2004, 155; Peatfield 1995, 225.

East slope, likely an outcast from a cult area (**5**.**195**). A limestone example was recovered from the Treasury of the West Quarter at Knossos (**5**.**196**). Two made of serpentine came from the Unexplored Mansion at Knossos, dated to MM IIIB–LM IA (**5**.**199** and **5**.**200**). A few examples also come from Malia. Three parts of a terracotta shell model were recovered from the MM II Independent Bench Sanctuary complex (**5**.**197)** and another terracotta example from Bastion E (**5**.**198**). A rare obsidian example was encountered in a LM I contexts in Block Y4 at Palaikastro (**5**.**201**). Skeumorphs also occur at non-palatial sites. A steatite shell model appeared in mixed MM I–LM III contexts in the vicinity of the Mt. Juktas peak sanctuary (**5**.**202**). By the start of the LBA, shell models begin to be found also outside Crete. One is known from Akrotiri (**5**.**203**), while an amethyst example was recovered from the acropolis at Mycenae (**5**.**204**).

We find marine scenes on conical *rhyta* as well. Two examples derive from MM III–LM I contexts in the Throne Room at Knossos. The first, in steatite, depicts an ambushed octopus against a backdrop of marine rockwork (**5**.**205**). The second shows a dolphin above marine rockwork (**5**.**206**). Before a remodelling of the Throne Room at the beginning of the Mycenaean phase, the room likely served as a shrine with a lustral basin nearby.[874] Given the marine subject matter in the Temple Repositories, similar themes would be expected in contemporary shrines, which is the case. This serves to suggest that they there were not separate shrines for the worship of different deities or themes, rather that marine representation was part of a recurring network of cult associations repeated in shrines at Knossos during the Protopalatial and Neopalatial periods.

A final remarkable, yet ambiguous scene is portrayed on part of a LH I *rhyton* from the Apollo Maleatas sanctuary at Epidavros.[875] On the preserved part is depicted is a row of human figures, evident by their legs and lower half of the body, who appear to be standing on a rocky ledge (**5**. **139**). Below is a dolphin, which appears to be either leaping from the water, or portrayed in the water surrounded by ambiguous circular and curviform shapes. To the immediate right of the dolphin is the head of a human figure preserved, with either the side of a ship or a tower shield covering the rest of the body. To the left of the dolphin are three additional human figures, square chested or behind tower shields, with one human figure holding a spear, which is not aimed directly at the dolphin. The scene is puzzling in its character. Does it portray a dolphin hunt, perhaps with some form of cult significance, or is the presence of the dolphin supplementary to a naval battle?

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[874] Hitchcock 2010, 111–112.
[875] Koehl 2006, 185, nos. 818, 819.

Xenaki-Sakellariou argued for a Near Eastern origin on the basis of the clothing and weapons of the soldiers depicted,[876] however, this can be ruled out as the dolphin represented is akin to those depicted in the southern Aegean (for example **5**.**61**). A Greek mainland origin can also be discounted as marine creatures were rarely represented on the Greek mainland before LH I (Chapter 5.2). Together with the marine scenes from Grave Circle A at Mycenae, it is likely that these scenes reflect a mainland concept transmitted through a Minoan medium, much in the same way as the contemporary "lion hunt" scenes, as humans and marine creatures rarely appear together in "active" scenes on Crete.

Secondly, if it was a Minoan import, what was it doing at Apollo Maleatas, in the higher lands of the Argolid? It is difficult not to connect *rhyton* fragments, of a type commonly used in cult contexts on Crete,[877] with the sanctuary at Apollo Maleatas constructed over the remains of the MH settlement in LH I.[878] Its function is difficult to ascribe with certainty, though as it was found in the lower levels of the sanctuary, alongside animal sacrifice debris and votives, it seems reasonable that the *rhyton* was used for pouring ceremonies connected to the cult performed at sanctuary.[879] The choice to incorporate a maritime scene within the cult syntax of the practices performed at the sanctuary is an indication that the sea and sea-related themes may have begun to play a role in elite expression and ideology in the Early Mycenaean Argolid, a situation likely influenced by Minoanisation.

5.5.3 Votives

The marine world was occasionally the inspiration behind deposition of votives in cult areas. Models of fish is one such category. The earliest example comes from a mixed MM I–IIB context at the Vrysinas peak sanctuary, made in terracotta (**5**.**207**). It was found with other votives, such as bovine figurines. Two fish models (**5**.**208** and **5**.**209**) were also found at the Traostalos peak sanctuary, in mixed MM I–LM I contexts, where they were found with numerous *ex-voto* limbs and animal figurines. Another example, an ornate sea bream made from gold plates, was recovered from the East Treasury Deposit at MM III Knossos (**5**.**210**). It is clear that fish models were not especially numerous in comparison to votives of terrestrial animals, though their presence atop peak sanctuaries is an interesting juxtaposition. While these votives could simply be viewed as an attempt to incur success on fishing trips, their presence at peak sanctuaries may suggest a desire to mix different spheres of

[876] Xenaki-Sakellariou 1971, 10-11.
[877] Rehak 1994.
[878] Lambrinoudakis 1981, 59-65.
[879] Koehl 2006, 313.

knowledge, moving a concept out of its original context into another. This process may have served to reinforce the role of Minoan ritual in uniting various spheres of experience.

A range of other marine animals are skeumorphically represented from MB II onwards, usually on Crete. In the *kouloures* of the West Court at Knossos, several marine skeuomorphs were buried in the voids along with refuse. Included was the terracotta model of an argonaut (**5**.**211**), and a cache of moulded terracotta crabs (**5**.**212**). These terracotta marine moulds likely derive from a Protopalatial shrine, being deposited along with the refuse from the destruction of the Protopalace at the beginning of the Neopalatial period.[880]

There are examples of marine votives outside Crete. At the Agios Georgios sto Vouno peak sanctuary on Kythera, terracotta relief applique in the forms of oysters (**5**.**213**), fish (**5**.**214**) and an argonaut (**5**.**215**) were recovered from MM IB–IIB contexts. They originally decorated vessels, but were probably deposited individually as votives.[881]

Another form of votive are boat models. The earliest in a cult context is made of terracotta and was recovered from the MM IB–IIA "lakkos" at Petras (**5**.**216**) with fine ware pottery and other ritual paraphernalia. An example is also known from the Traostalos peak sanctuary, found along with a range of votive offerings in a mixed MM I–III deposit (**5**.**217**). A palatial parallel is found at LM IA Malia, where two terracotta boat models (**5**.**218** and **5**.**219**) were found in the Agora area (*La maison de la façade a redans*), argued to have had a cult character as horns of consecration, miniature vessels and anthropomorphic figurines were also found there. It has been suggested that **5**.**218** carried a bird-head sculpture on the prow of the model,[882] which is possible, though it could also represent other animals such as a snake or fish.

5.5.4 Ritual paraphernalia

A reoccurring phenomenon are drinking and serving vessels decorated with relief imitations of shells. Several examples come from Knossos. One of the earliest comes in the form of a MM II bowl fragment with moulded shells applied to the rim (**5**.**220**). It was found in one of the *kouloures* and so may

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[880] MacGillivray (2007, 145) pointed out joins in several sherds from the material in the *kouloures* and surrounding houses, making it almost certain that they were purposely filled in at the start of the Neopalatial period, likely as refuse from the destruction of the Protopalace (Privitera 2014, 432–433). Zoomorphic terracotta reliefs can be associated with cultic contexts in Neopalatial contexts (Knossos (Temple Repositories): Evans 1921, 517–521) and are likely to have come from a destroyed shrine space within the Protopalace, later to be cleared into *kouloures* during renovations at the start of the Neopalatial period. It cannot, however, be discounted that these items were deposited with intentionality, perhaps as some form of foundation or propitiatory deposit.

[881] Sakellarakis 1996, 87.

[882] Basch 1987, 107.

have been a cult item deposited when the area was filled in after end of the Protopalace. An object of a similar date and nature is a fine MM II polychrome cup with a relief band moulded with shells (**5**.**221**), which was found in the area of the Stratigraphic Museum excavations. Another example comes in the form of a jug with moulded molluscs on the rim, from a MM IIIB context at the House of Frescoes (**5**.**222**), a probable ceremonial space.[883] In the MM III–LM I Temple Repositories, cult paraphernalia include at least twelve cockle-shells (**5**.**227)**, six argonauts (**5**.**228**), two flying fish (**5**.**229**) and a fragmentary miniature basket with relief cockleshells on the rim (**5**.**230**), all made of faience. The objects were found together with terrestrial animal models, flower models and the famous "Snake Goddess" figurine. Marine objects were apparently an important element in the performance of cult.

There are examples outside Knossos as well. Dated slightly later, though similar in character, are some marine objects from LM I Malia. From Quartier E comes an open vase with a flat shell relief (**5**.**223**), a large vessel with triton shell attachments (**5**.**224**) and an open vessel with a rounded shell impression (**5**.**225**). Slightly earlier examples are also known from the settlement in the form of shells and crabs applied as decoration to various vessels at Quartier Mu (**5**.**226**).

5.5.5 Discussion

While not a dominant theme in Minoan religion, the marine (and to a lesser extent, maritime) world is consistently present in Minoan shrines in a range of forms. In fact, the theme only appears on Crete or in areas influenced later by Minoanisation (Fig 5.13), indicating its penetration into Minoan cult practice. On stone *rhyta*, marine scenes are a theme that goes alongside combat, bull leaping, peak sanctuaries and *genii*.[884] Several examples were fragmentary upon recovery, leading some to suggest that the vessels were deliberately broken after use.[885] The fragmentary nature of most stone or terracotta triton shells and marine-decorated stone *rhyta* presented here suggests that they may have been part of a symbolic vocabulary in which specially crafted items were destroyed as a part of ceremonies, in acts of conspicuous consumption.

Another important theme is the transference of sea-related matter to mountaintops. This is evident through the recovery of fish and boat models at peak sanctuaries. Their presence in these contexts may be reflective of propitiatory acts, for example to garner goodwill for a voyage or for fishing ventures. The

[883] Chapin & Shaw 2006, 65.
[884] Rehak 1994, 1–6.
[885] Rehak 1994.

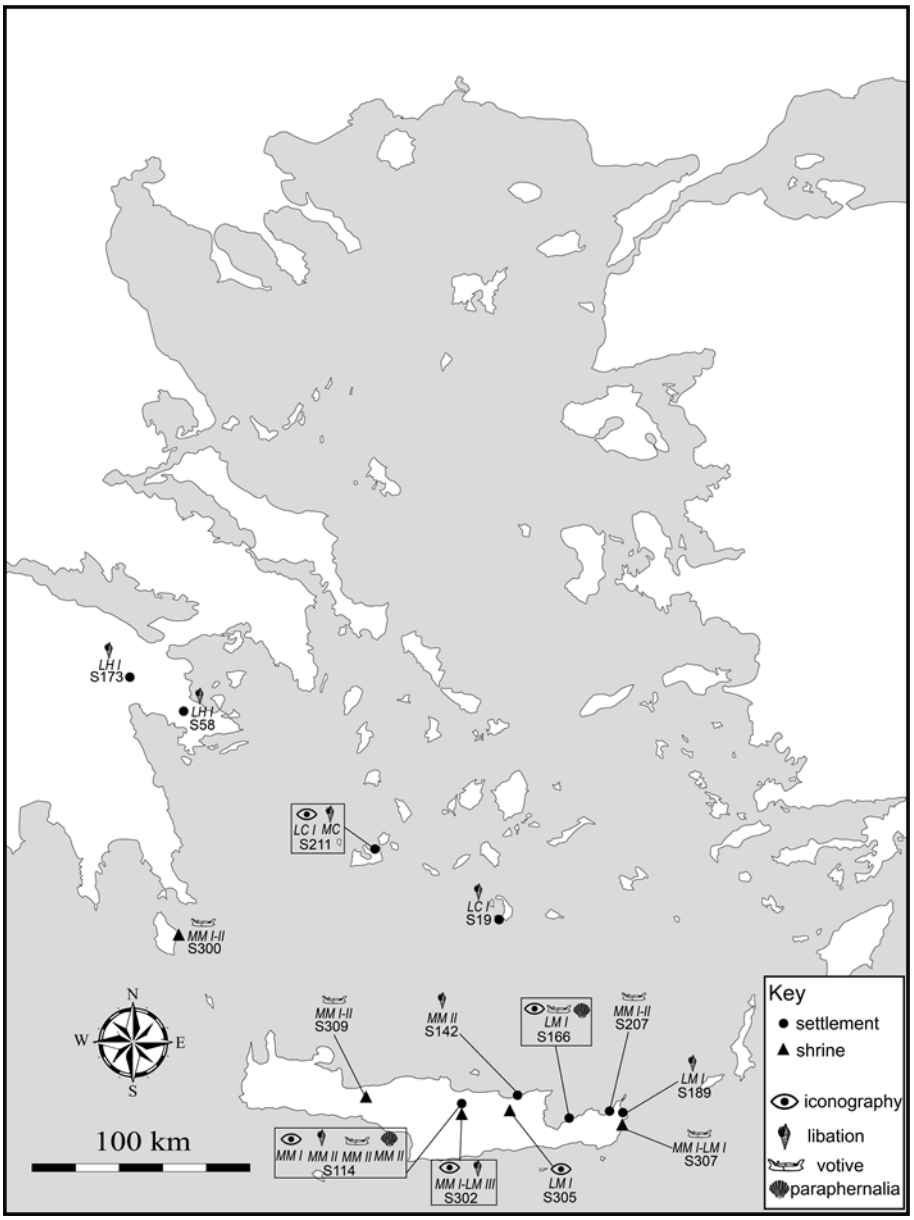

Figure 5.13. Distribution of catalogued examples of marine imagery from probable and certain cult contexts. The relative chronology denotes the first instance of the theme represented from the settlement.

presence of sea-related material at mountain shrines, two opposing geographical areas despite intervisibility, is an indication of the significance of the marine world to the performance of Minoan cult, even atop mountains. This is

further strengthened by the recovery of actual fish and marine shells at peak sanctuaries (Chapter 3). The deposition of fish models are difficult to interpret. They could indicate the significance of fish to Minoan life, but they could also serve as metarepresetations of the sea. It is also difficult not to see a link between the socio-political realities of Minoanisation, in the agency of Minoan seafarers, and the deposition of boat models in shrines. Boats are further enmeshed in Minoan religious iconography through their association with goddesses on some scenes and the boat, as an image, may have come to represent a distinct set of ideas linked potentially to commerce, the marine world and religion.

The repeated appearance of marine-related objects in peak sanctuaries, urban shrines and cave sanctuaries is an indication that the theme is pervasive. It is also a major subject theme on seals deposited in a range of Minoan cult places, suggesting a significance first as a marker of individual identity but possibly also priestly status or connection with a specific marine focused de ity. The significance of a marine theme in Minoan religion is further highlighted by the use of natural and skeuomorphic triton shells, argued here to mostly be used as libation vessels, as well as a smaller number of *rhyta* decorated with marine scenes. The use of triton shells, real or imitated, may have been a way for participants to metarepresent the sea within cult performance. Drinking or serving vessels decorated with marine-shell usually appear on vessels that would likely have contained liquids. While this link could be a form of iconographic reinforcement (i.e. this vessel is for liquid, just as the dolphins swim in liquid), it seems more likely that the significance of marine imagery on these material culture is a metarepresentation of a seascape, which as highlighted can have a social, political and religious dimension.

5.6 Conclusion

Sea-related depiction (iconographic and skeuomorphic) across time shows that the sea was significant in a various parts of the Aegean. Seafaring was important to the communities of the early Cyclades (Fig 5.14), where it may have been a marker of social prestige, evident through ceramics and petroglyphs, items of public display in the FN, as well as between EC IIA–III. Marine animals were depicted in the Cyclades on items of public display (vessels and petroglyphs) as well as symbolic significance (frescoes) from between EC I to LC I. Evident is an increasing sophistication in the range of specific marine animals represented as time passes (dolphin: MC early; octopus: MC late; flying fish: LC I). The role of the EC Cycladic islanders as the drivers of intra-Aegean contact may have led to a focus on seafaring imagery. Later in the MBA, at Phylakopi in particular, marine animals were favoured and the representations of boats entirely abandoned. There seems to have been a shift in what the sea meant to the inhabitants, indicating a change in the understanding

of the seascape. This may be linked to a wider shift towards the use of figurative pottery in general as a means of the promotion of group solidarity in a new socio-cultural setting after the demographic change associated with nucleation at these settlements.[886] If this is the case, then clearly the marine world was a significant part of this promotion of group solidarity, particularly at MBA Phylakopi.[887]

Minoan interest in marine animals comes later than in the Cyclades but becomes enmeshed into a range of later cult practices (Fig 5.14), highlighting a symbolic investment in the sea, where the theme stands alongside others in Minoan religion, such as sacrifice (double-axe) or Mistress of Animals. The skeuomorphic representation of boats in the form of boat models centred mostly on Crete, but is present in southern Aegean communities in EB I–IIA, before becoming a mostly Minoan practice. Model boats are typically associated with symbolically charged environments (burials, shrines) and are likely to have played a symbolic role.

The social context of sea-related depiction is integral. EC IIA frying pans were likely status items, denoting a specific identity, such as seafarer, while MM seals and sealings were likely insignia, denoting the affiliation of the individual or group to a specific practice (seafaring, fishing). Neither necessitated an elite status, though it seems reasonable to assume that their possession and deployment was at least an indicator of material culture bearing sea-related themes as status objects. Frescoes, cult objects and ornate stone *rhyta* on the other hand point toward a more elite patronage of sea-related themes. Nevertheless, the choice to incorporate sea-related themes is an indicator of the intersubjective social significance of the seascape to society, as the representation of these images would have carried a social value, intended to be comprehended by the rest of society. For direct evidence of sea-related depictions from non-elites, we are more in the dark. Restraint should be expressed in the retrojection of later attitudes toward the social status of fisherpeople, that they were inherently of low status, back into prehistory. Minoan sealings, the fishermen vase from Phylakopi and the fishermen fresco from Akrotiri should serve to caution against this assumption. For non-elites, perishable items made from wood could have been a key source of sea-related depiction lost to taphonomy, though from the evidence presented in this chapter, it is difficult to make the case for a non-elite iconography of the sea.

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[886] Nikolakopoulou 2010, 220.

[887] *Contra* Nikolakopoulou (2010, 215), who argues that fish representation is rare at both MBA Akrotiri and Phylakopi. This may be the case for Akrotiri, though as Chapter 5.2 has shown, fish and the marine world more generally were well represented in MC representational art.

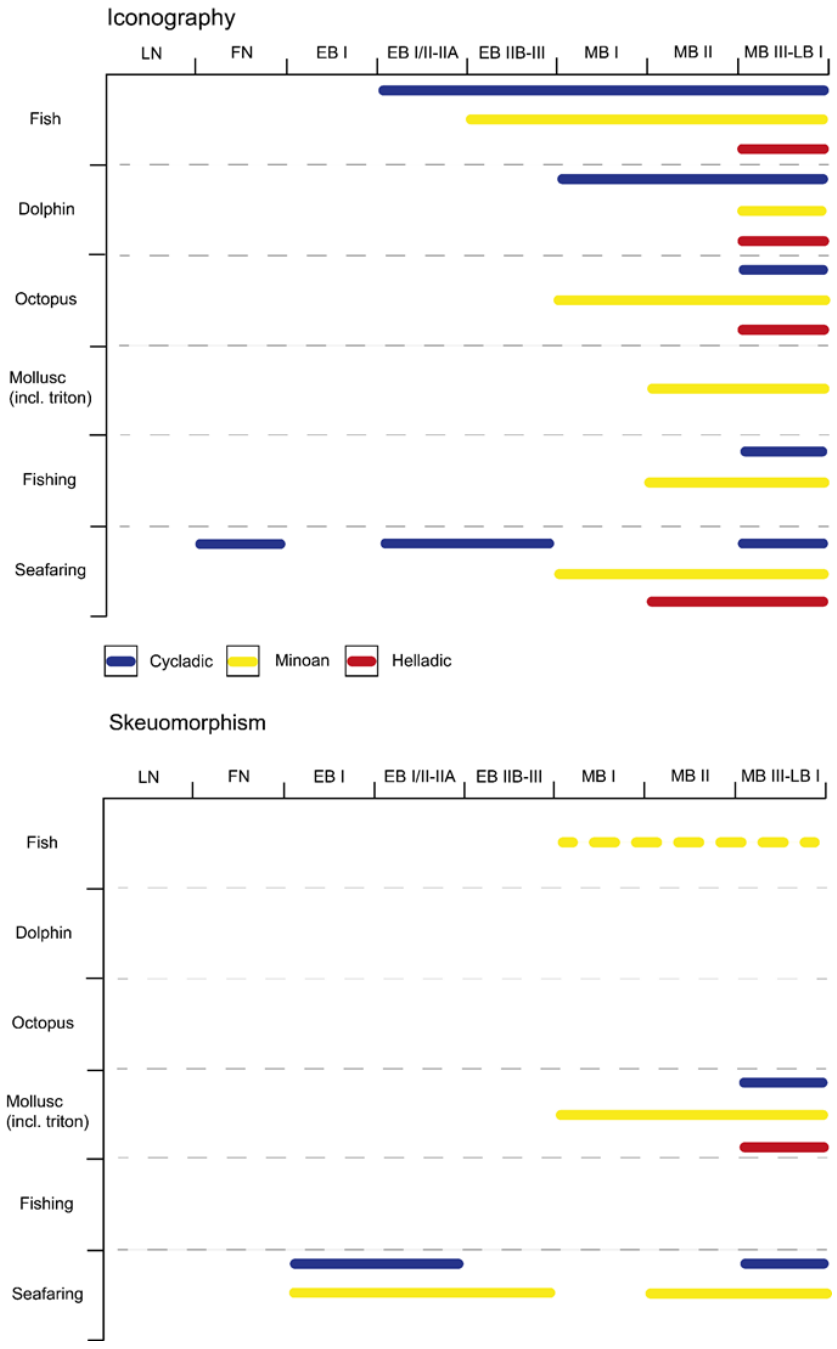

Figure 5.14. Diachronic focuses of sea-related representation in both imagery and skeuomorphism in the different regions of the Aegean. Note that the islands of the north and east Aegean, as well as the northern Greece (Macedonia, Thrace) are not included due to a lack of evidence.

For the Greek mainland, sea-related iconography is, for the most part, not present in any substantial manner until the latter part of the MBA (Fig 5.14). Seafaring imagery was significant at MH II Kolonna, and given the association between seafaring, violence and sustenance, the settlement may have held some form of control over the Saronic Gulf. For the community at Kolonna, the sea may have been a place to control, a place of violence and a means of deriving individual or group status. The Greek mainland, however, is remarkably quiet on the subject of the marine world in the EBA–MBA. Some imagery is evident in the MBA, though it is not enough to suggest a meaningful association with the sea. Why this iconographic theme does not develop here is puzzling. A wide-range of EH IIB sealings are known for the Greek mainland, where a range of abstract images is engraved,[888] yet there are no marine images in this material. That animal representation generally appears to have played an insignificant role in Helladic iconography in EBA–MH II, compared to Minoan and Cycladic counterparts, may itself account for the lack of marine imagery. However, this cannot be explained as a lack of embodied interaction as faunal evidence suggests that some mainland communities were consuming seafood. Added to this is the fact that in the EBA, particularly in the Argolid and Attica, the settlement patterns have a decidedly coastal nature, suggesting that this lack of representation of sea related animals was not due to a lack of interaction with the sea. In explaining this, the communities of the Greek mainland may not have attributed deeper significance to the sea and as a result, the concept was not important in local identity or power generation. To put it succinctly, the sea for the communities of the Greek mainland was consistently a *space*, rather than a *place* from the LN to MH II.

By MH III–LH I, marine themes emerge at a few places in the Argolid, suggesting the adoption of a new iconographic repertoire. This may have been a result of emulation, or a Minoan origin of some of the individuals buried in the Grave Circles. Chapter 3 presented the case for individuals from Knossos having higher levels of marine protein in their bone collagen from isotopic analyses, and the same has been recognised at Mycenae. The range of marine images represented, dolphins, triton shells and octopus, is an indication that, to this elite group, the seascape was not necessarily a place of seafaring, rather the focus is placed on the natural world in accordance with material found in Minoan shrines. The incorporation of marine themes to local iconography in the Early Mycenaean Argolid (alongside images of battle and hunting) may be more of an indication of Minoan iconographic preferences, which at the time included similar types of marine animal representation. The significance of marine animals as images may not have penetrated into Early Mycenaean society as a whole, rather they may have been deployed as exotic status symbols.

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[888] Heath 1958, 81–120, pls. 20–22.

Central to the understanding of the depiction of sea-related themes is that they are all essentially metarepresentations of a seascape. To elaborate further, none of these depictions are convenient or functional, there is a specific choice to represent a fish or a boat, when a house or bull might be just as easy to depict. While the majority of depictions of sea-related matter come from coastal and insular regions, it should be borne in mind that several long-lived Helladic coastal settlements never developed an iconography of the sea, despite being as proximal to the sea as places where sea-related themes are depicted. The same could be argued for the island of the north and east Aegean, where the settlements were coastal throughout the timespan of this study and yet no sea-related iconography developed. These examples should caution against the basic assumption that the depiction of sea-related themes in iconography are a natural result of living beside the coast, a passive regurgitation of things observed. To the contrary, the depiction of the sea was an active choice, informed by local circumstances, the interplay between local social groups and embodied practice. In short, the depiction of sea-related themes in material culture is an indication of the importance of the sea, animated into a seascape.

To summarise, from the evidence presented and discussed in this chapter, three themes have been highlighted. First, the representation of sea-related themes is an indication of the social significance of a seascape, especially when incorporated into material culture of display or communal consumption. Second, the elite nature of many sea-related depictions mean that we do not have direct evidence of the importance of seascapes to non-elites, though the likelihood of its intersubjective significance makes it probable. Finally, representations of sea-related subjects are metarepresentations of seascapes, the genesis of which is informed by local choices, rather than being an inevitability of inhabiting coastal places.

6. Seascape and Society, discussion and general conclusions

This study has presented an analysis of human-sea interaction from a seascape perspective, aided by the material engagement theoretical approach set out in Chapter 1. In the preceding chapters, human-sea interaction based on embodied and embedded action in the littoral and island regions of the Aegean was presented. The spatial relationship between *locales* and the sea – 'coastality' – was examined with the aid of GIS (Chapter 2). Embodied action with the sea in cuisine and material culture was then scrutinised, with a focus on temporal and spatial patterns of intensity (Chapters 3 and 4). Finally, representation of the sea and sea-related matters was surveyed, with a focus on embodied action and context, both archaeological and social, of the objects (Chapter 5). This concluding chapter brings these narratives together to discuss seascapes and their impact on Aegean society 4800–1600 BCE. It achieves this through explicitly linking the theoretical framework of this study to the results of the study, before a general chronological discussion of human-sea interaction is presented utilising the concepts presented in the preceding section. Following this is a more specific region-by-region discussion before the results are contextualised in light of previous research. Finally, suggestions for future research are outlined to aid future work on this research topic.

6.1. Thinking seascapes

The theoretical framework of this study focused on material engagement theory, highlighted in Chapter 1.3, where it was suggested that the cognitive significance of the sea could be determined through its penetration into material culture (representation, food and objects) as a result of spatial and cognitive proximity between communities and the sea, with the sea becoming a meaningful agent to society, in short a seascape. The evidence for seascape dialogues (human-sea interaction) can be broken down into spatial evidence, food evidence, material culture evidence and finally evidence of representation.

Spatial evidence concerns the proximity to the sea for human action or 'coastality'. Coastality underpins all other forms of evidence. While it is true that the evidence for deeper seascape dialogues is predicated on coastality, evinced through the recovery of greater evidence for seascape dialogues in

coastal places, seascape dialogues are not an inevitable outcome of coastality. To elaborate, not all coastal settlements provide evidence for a deeper interaction with the sea, suggesting that there was an element of choice in seascape dialogues. Food and material culture can be taken together as evidence of embedded interaction (repeated embodied practices contingent on local environment) with seascapes, with the consumption of seafood and the use of marine faunal material for the production of objects. At no settlement surveyed is there evidence of seafood forming the dominant protein source in local diet. This first suggests that consumption of seafood was not a biological necessity due to the availability of other food sources. Secondly, it also means that when seafood consumption is identified, it is a local choice. However, as seafood (especially fish) consumption suffers heavily from taphonomy, less emphasis can be placed on this evidence. Material culture is not as taphonomically hindered as seafood and marine shell material culture is not overwhelming, suggesting that there was also a choice involved to utilise marine shell over other forms of raw material for specific objects, rather than being a necessary raw material. Representational evidence concerns the depiction of sea related themes on material culture. Again, there is an element of choice here, as other forms of motif can be and are represented, so the representation of fish and boats are not an inevitability of coastal habitation. Seascapes therefore are a multifaceted entity with various features, including its physical properties, ability to serve as a bridge or barrier to movement and communication (insularity), the sustenance it can provide (foodways), the material culture that can be produced from its fauna (production/processing) and the extent to which it can be represented, negotiated or manipulated as an image in material culture.

Four varieties of seascape engagement are evident across the prehistoric Aegean as a result of this study. The first group can be characterised by an entire absence of direct seascape engagement. The second, termed *coastality*, is simply a spatial relationship between humans and the sea. In this level of engagement, the sea is a zone of network contact, evident through important material culture and a closer proximity to the coastline. In the third level of engagement, *embedment*, the sea becomes a central backdrop for the daily lives of the inhabitants of coastal communities. There is evidence of external contact through sea-focused networks, as well as an exploitation of a variety of marine resources. This includes the consumption of seafood and the utilisation of marine faunal remains in material culture. The final and most intense level of seascape engagement is an *entanglement* with the sea. In this level, all previously mentioned forms of interaction are present, while sea-related themes begin to filter through into iconographic representation in material culture, which is a reliable indicator of the importance of the sea to social dynamics, cognitive processing and ultimately to local identity.

Beginning with the first level, places without direct seascape engagement, there is no embedded interaction with the sea and low coastality (Fig. 6.1:A). Examples include EM Debla, FN Tharrounia and EH Apollo Maleatas. In each

case, coastality is low and there is no evidence of embedded interaction with seascapes and where non-local items are identified, there is a reasonable case for suggesting they moved via down-the-line exchange rather being evidence of direct interaction with external, sea-focused networks.

In the *coastality* class of seascape engagement (Fig. 6.1:B), there may be a close proximity between the sea and places of habitation as well as evidence of external interaction, though there is little evidence of substantial embedded interaction with seascapes. Examples of this class include settlements such as EH Askitario, EB Paradimi and EC Panormos. At these places, there is little evidence of published seafood consumption despite the relative proximity to the coast, while there was also no local evidence of seascape representation.

This study has also shown that there were other, varying degrees of seascape engagement in the study area. Some communities inhabit coastal positions and have evidence for external interaction via the sea (networks) and evidence of embedded interaction with a seascape via the use of marine faunal material culture or the consumption of seafood. It is argued here that in these cases, interaction with the seascape is *embedded* within the community (Fig 6.1:C), yet seascapes do not taken on as great a social significance as they do in entangled communities. The reason why this should be the case is the same as with why some communities become more entangled with seascapes, the element of social determination or in short, choice. This choice is not social determination without consideration for physical context. For example, it would be difficult for a community c.20km from the coast to become socially entangled with seascapes, rather to go from one level of interaction to the next, there would have to be a greater social investment in seascapes. Examples of embedded interaction abound, for example, EH–MH Lerna and Asine, EH Agios Kosmas, EC Koukounaries and EH–MH Pefkakia. In each case, there is evidence of embedded interaction with seascapes, external contact and a close proximity to the coast and yet the communities in these places did not manifest seascapes materially and seascapes do not appear to have played such a central role in the collective psyche of the communities, evinced through the absence of representation.

It is to the fourth category we must place greatest emphasis. It is in representation where interaction with seascapes transcends the boundary from practical to symbolic, indicating a deeper integration in the collective psyche of a community: a commonly understood intersubjective syntax of motifs indicating the significance of the seascape to the functioning of a community. In concert with embedded interaction, such as seafood consumption and the use of marine material culture, it could then be argued that the seascape was an *entangling* agent to society (Fig 6.1:D). Examples of such entanglement can be

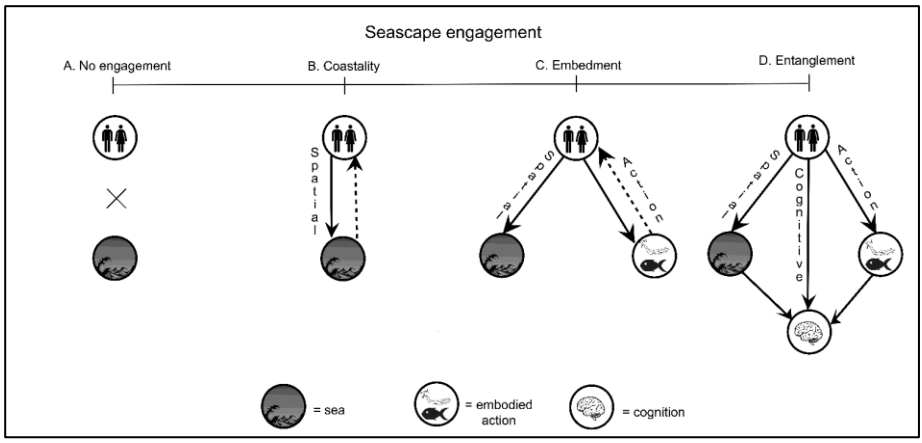

Figure 6.1. Seascape dialogues. Different classifications of seascape engagement.

found throughout this study, for example in specific social groups at Neopalatial Knossos, Malia and Palaikastro, EC IIA Chalandriani, MC–LC Phylakopi, MH Kolonna and LC I Akrotiri. In each of these instances there is a rich representational repertoire of sea-related matters, in addition to reasonable coastal proximity, external contact through networks and, where permitted to by taphonomy, evidence of seafood consumption and/or the utility of marine faunal material culture.

To return to the theoretical framework, it is argued here that entangled interaction with seascapes is a result of extensive bodily and cognitive interaction with seascapes, which may have led to metaplastic cognitive change (the ability of the individual to re-evaluate their cognitive system conditional to their physical and social environment) for some members of these communities, which is reflected in the greater evidence of seascape dialogues. It is also argued that these changes are not inevitable. The differing degrees of seascape engagement suggest that seascape dialogues have varying characters and that human responses to seascapes are culturally specific and open to renegotiation over time.

6.2. Seascapes over time

The long-term approach of this study affords a rare opportunity to trace the manifestation, development, manipulation and decay of seascapes from a large dataset over a considerable time span. This section highlights general chronological trends, aiding in understanding how seascapes rise and fall over time, presenting the chronological evidence for seascape dialogues within the study area. Primacy is given to those developments directly connected to seascape dialogues in this overview, while discussion of areas where the evidence is more scant can be found in Chapter 6.3.

Late Neolithic

Figural representation is not a common feature of the LN and so it is a little unfair to state that there were no communities entangled with seascapes. Rather engagement may have been manifested in forms of evidence that are not traceable in this study. Nevertheless, there is evidence of human-sea interaction at various places in the Aegean, from northern Greece to Crete via the Cyclades. The evidence at Knossos is worthy of comment given the quantity of marine shells noted in these layers and it was suggested in Chapter 4 that these shells were converted to objects in some form of local industry, despite Knossos being a reasonable walk from the coast. At Saliagos in the Cyclades, seafood was consumed in reasonable quantities and marine shell functioned as utensils. Perhaps the deepest interaction with the sea during this phase comes in the form of the *Spondylus* shell network, where *Spondylus* objects were seemingly hoarded at Dimini and were found at various sites from the central and northern Aegean.

Final Neolithic

The FN sees the first introduction of seascape representation in the study area. This comes in the form of petroglyphs at Strofilas on the island of Andros, where stones of the fortification wall were decorated with rock art including representations of boats, among other motifs. Elsewhere in the study area, the evidence of seascape dialogues is not overwhelming and it appears that in some areas there was a shift away from the coast (Attica), or a movement to inhabit defensible places (Crete), while in other areas there is a shift toward the coast. At no site was seafood consumption particularly extensive, though the evidence for small-scale exploitation can be found in a few places. In total, the evidence from the FN is mixed, suggesting divergent trends in different places, while the appearance of maritime iconography at Strofilas could be an indicator of the increasing localised importance of maritime connectivity, along with the range of practices (exchange, raiding) that it entailed.

Early Bronze I

The evidence of seascape dialogues in terms of material culture in EB I is remarkably scant, given the changes later observed in EB IIA. What is observable is that most regions see an increase in coastality, suggesting that settlements were closer to the coast than in the preceding period and in the case of the Cyclades, East and North Aegean, the settlement patterns had a high degree of coastality. That the material remains of seascape dialogues (seafood, marine faunal evidence) are scant can be explained as a result of the fact that many EB I settlements are overlain by EB II or later habitational layers, meaning that such evidence may have been lost or is obscured by later deposits.

What cannot be squared, however, is the entire lack of seascape representation, especially in the Cyclades, where it is recognised both in the phases preceding and following EC I. In going some way to explain this, it is suggested here that the higher coastality for the Cyclades in EC I could be an indicator of a more egalitarian seascape, where smaller communities could access intra-Cycladic contact networks by using small dugout craft. That inter-regional contact is not as evident in EC I as it is in EC IIA, may suggest something of an introversion of Cycladic culture in EC I, in which seascapes played less of a role in society. The chronological anomaly here, however is the recovery of a boat model at Petras Kephala in EM I, which may be a first step in the direction followed later in EB IIA.

Early Bronze I/II–IIA

This chronological grouping can be unevenly broken up into two different, yet connected trends. EB I/II sees the foundations laid for the 'international spirit' southern Aegean network seen later, evinced through the presence of Cycladic pottery (and tombs) in northern Crete, as well as in East Attica. This phase sees the introduction of marine imagery (fish) into the iconographic repertoire and the EB I/II phase probably sees the first sustained steps of Cycladic seafarers out of intra-Cycladic contact into inter-regional networks. While the representational evidence is scant, the emergence of fish alongside other figural motifs on Kampos-phase frying pans may be an indication that the seascape had begun to be incorporated into mortuary practice, something also reinforced by the recovery of marine faunal remains in tombs.

Picking up where EB I/II left off, EB IIA continued the trend towards broader exchange networks, now including the Argolid, Euboia and Western Anatolia in addition the Cyclades, Attica and Crete. This wider interaction network is accompanied by a range of maritime imagery in multiple media forms. The first, are the several frying pans from Chalandriani on Syros depicting boats in scenes of seafaring. The second consists of a rock art from Vathi on Astypalaia and Korfi t'Aroniou on Naxos, which though different in their form, represent boats in addition to a range of other motif forms (dagger, fish, terrestrial animals, spirals). Key also here is the accompanying presence of daggers, perhaps symbolising violence, in addition to other motifs. The third is made up of EM IIA boat models recovered from both Mochlos and Palaikastro on the northern coast of Crete, typically associated with tombs. The impression is that seascapes were places of seafaring, a theme significant across a wide range of the southern Aegean, at the same time at which interaction networks were at their widest extent so far. Most regions of the Aegean present higher coastality, with settlements closer to the coast and it is in this phase in particular that the defensive FN–EM I/II settlements on Crete are abandoned, suggesting something of a reorientation of communities away from the interior and closer to the coast. Also recognisable is seafood evidence

from a range of settlements, in the Cyclades, Attica, Euboia and the Argolid. It is difficult to show conclusively that communities consumed more seafood in EB IIA in comparison to other periods, but it is clear that while never intensive, we can at least suggest that seafood consumption was extensive in its scope. Another further point of note is that when excavation of EB IIA deposits explicitly incorporate seafood into recovery strategies, remains tend to be found. This phase also sees the inclusion of fishing hooks in some tombs, which may be an indication of an embedded exploitation of the sea in life, but a deeper significance to the connection to the sea in death.

Early Bronze IIB–III

As with the previous, the EB IIB–III chronological grouping can be broken down into two phases. EB IIB sees some continuities and discontinuity from the preceding phase. In terms of continuity, most regions of the Aegean continue in the trend toward higher coastality. On Crete, more model boats have been found in EM IIB contexts, particularly at Mochlos, where they have been recovered from both settlement and mortuary contracts, indicative of the centrality of the seascape to the community in both life and death. Accompanying this on Crete is a high coastality, a stark contrast to the situation observed in FN–EM I. In terms of discontinuity, some EC IIA settlements in the Cyclades are abandoned entirely (Chalandriani, Korfari t'Aroniou, Koukounaries) while new settlements are established in defensible locales (Kastri, Panormos). Accompanying this is the cessation of burial at most EC IIA cemeteries. The reasons for this may be manifold, though it appears that the collapse of the 'international spirit' network, replaced by the Anatolian Trading Network and the probability of a period of drought were the key drivers for social change. The region sees an entire cessation of maritime imagery too, though fish motifs have been recognised on contemporary pottery from parochial Markiani, suggesting that the seascape was at least still significant there. The abandonment of boat depiction may indicate something of a reorientation of Cycladic communities away from seafaring, something that can be understood within the context of network collapse. Evidence of seafood consumption is now stronger on the mainland and Crete than elsewhere in EB IIB.

EB III is more difficult to unpick. Maritime imagery returns to the Cyclades, this time located in the southern part of the region at Phylakopi on Melos. Elsewhere the abandonment of EC IIB defensive settlements means that the archipelago is much altered, with settlements now mostly nucleated at larger conglomerate coastal settlements. Crete sees some discontinuity in its seascape dialogues. EM III maritime imagery ceases for the most part and coastal communities such as Palaikastro and Mochlos, where model boats had been located in the EM IIB, are almost entirely quiet now on the subject of the sea,

perhaps indicating a shift in perspective.[889] The best evidence curiously comes from Archanes Phourni, where Tholos Gamma contained a few examples of fish imagery (pendant and seal), which goes in tandem with the recovery of marine shells deposited in some tombs, an interesting concentration of marine (note not maritime) imagery, given its position inland (LCP 34306). It is difficult to suggest that members of this community were fisherpeople, and so the local interest in the sea could either reflect a movement of population from the coast to the inland at Archanes, or that there was a local investment in the sea as a meaningful space in the performance of some mortuary rituals. Evidence of seafood consumption and marine shell ornamentation in the Argolid and Crete are further indications of the continuation of embedded seascape interaction in these regions.

Middle Bronze I

The MB I grouping incorporates some of the latter EC III seascape dialogue evidence from the Cyclades, of which there is plenty. Most of it originates from Phylakopi, where a masted boat is depicted, of the same type as those illustrated on MH II boat depictions from Kolonna, the last boat motif in the Cyclades until the fresco painting tradition of LC I. The depiction of a masted boat is categorical evidence of the changing boat technology during the preceding phase. The cessation of its representation, however, coincides with another phase of introversion for the Cyclades, where extra-regional contact ceases until later. Rock art representation of boats from Plaka on Andros are difficult to tie chronologically, given the similarities in representation with rock peckings at FN Strofilas and it could be that these may predate the EC IIIB–MC settlement.[890] Elsewhere there is the emergence of fish representation, in a small quantity at Phylakopi. Crete sees examples of marine faunal imagery, mostly fish, from MM I Palaikastro, Vasiliki, Mochlos and Knossos. Marine faunal remains are recovered with greater frequency from coastal Cretan settlements from this period onward and are found at a select few coastal settlements on the mainland as well (Lefkandi, Lerna, Eleusis). Accompanying this are marine shell pendants at some Cretan settlements (Gournia, Knossos and Palaikastro) with the weight of evidence together suggesting a meaningful dialogue between Cretan communities and the sea, which starts to become entangling for some communities. It is important to state that this shift occurs on Crete at the same time as state formation on the island and could indicate the significance of seascapes to some social groups in both group identification and social competition.

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[889] Vavouranakis 2011c, 108.
[890] *ArchDelt* 55 (2000): B2, 960–964

Middle Bronze II

MB II sees the beginning of a deeper penetration of seascapes into Minoan society. This is exemplified through the increasing utilisation of triton shells in Minoan shrines (Chapter 4.5), the intensification of purple dye exploitation at settlements on the north coast of Crete (Chapter 4.2) the increasing elaboration of marine and maritime themes on contemporary seal stones (Chapter 5) and the continued presence of seafood consumption at settlements across the north coast of the island (Chapter 3.2.4). At Knossos it was also noted that some members of the community buried in the various cemeteries associated with the settlement had elevated levels of marine protein in their diets, indicating that some elite members of the community at Knossos had regular access to and preference for seafood.

This intensive interest in the sea is also noted at Phylakopi on Melos, where there are several depictions of fish and dolphins decorating ceramics at the settlement. This representational interest in the natural world of the sea is not shared in other regions of the Aegean, despite good evidence for the consumption of seafood and the use of marine shell ornaments in body ornamentation, for example of the type accompanying burials at Lerna. While it could be argued that the seascape played a role in the community there, in contrast to Phylakopi and the communities of north Crete, the seascape did not become entangling to the community. A Helladic anomaly is Kolonna on Aegina, where seafaring imagery noted at the settlement surely indicated the role of the settlement as a fundamental component of contemporary network interaction and potential dominance over the Saronic Gulf region. At Kolonna, this connection to seafaring permeated social interaction at the settlement and became part of an intersubjective syntax of motifs, where the importance of seafaring represented the prosperity of the settlement and local ideology and power dynamics.

Middle Bronze III–Late Bronze IA

This chronological grouping, short despite its two phases, sees a continuation and, in some areas, an intensification of the trends highlighted in MB II. Seascapes continue to be depicted on seal stones on Crete, and there is a greater elaboration of sea-related objects, both natural (Chapter 4.5) and imitated (Chapter 5.5), in shrines during this period. The exploitation of purple dye continues on Crete, if a little reduced on the north coast, but is now evident at off-island places connected to Crete through Minoanisation, such as Kythera, Karpathos and Rhodes (Chapter 4.2). Marine faunal representation continues

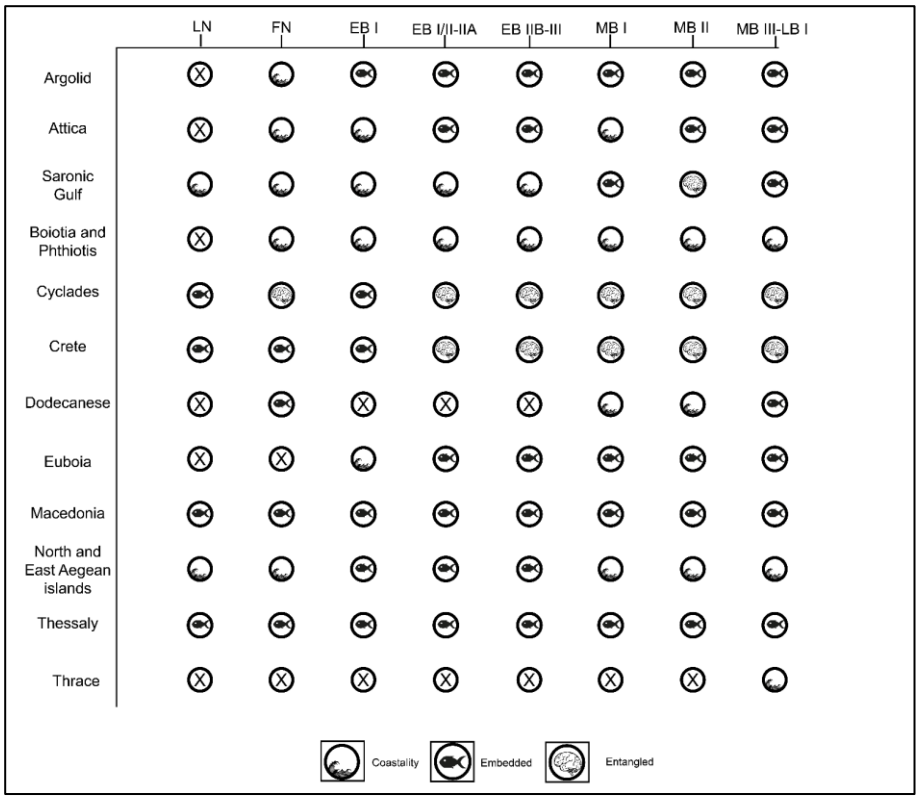

Figure 6.2. Chronological and regional overview of the extent of regional seascape engagement. The highest level (more engagement) evidence for each region is presented, incorporating the ideas presented in Chapter 6.1.

on pictorial pottery at Phylakopi in MC late and culminates in a broader representation of the marine world (fish, dolphins and octopus), while marine faunal imagery is also evident at Akrotiri (Chapter 5.2). The focus on both the marine and the maritime world at Akrotiri is remarkable, though in the absence of widespread excavation of earlier MC layers, it is difficult to suggest whether this interest in seascape representation was only a feature of MC III–LC I or like at Phylakopi, was also present earlier. What is clear at Akrotiri is that there is a significant investment in seascape representation, indicating an elite investment of the sea, which goes alongside the more embedded interaction evinced through the recovery of seafood remains and the presence of marine shells, in both quotidian and special contexts.

Seascape imagery of the kind observed on Crete also appears to have been transplanted to the Shaft Graves of Mycenae, where marine imagery (not maritime) accompanies some of the dead buried at the cemetery. The entire lack of marine or maritime imagery at Mycenae, and in the Argolid more generally, prior to this point would direct us away from interpreting this change as a result of greater entanglement through embedded interaction over time and

rather as a result of the import of Minoan sea imagery, either directly or mimicked through the presence of Minoan craft workers. The evidence for elevated marine protein consumption in some members of the community buried in Grave Circle A is observed, akin to that seen in MM II–III Knossos. This may be an indication of incomers from more coastal regions (islanders or Cretans) or for a mimicry of Minoan elite culture, in which seafood may have been consumed in greater quantity by some, as well as well as the presence of the marine world on material culture.

6.3. Seascape and society: regional developments

With the chronological developments outlined (Fig. 6.2), the regional developments that can be teased out from the study are presented below. More emphasis is given to discussion of those sites that have been more thoroughly excavated and published.

Argolid

Settlements in the Argolid are not present during the LN to the same extent as in Thessaly, Macedonia and Attica. Instead, human activity focused on caves. The FN is only represented by a small number of coastal settlements, such as Lerna. EH I saw a shift toward the coast, though there are also inland settlements within and outside the study area, suggesting that the infilling of the landscape included both coastal and inland areas. In EH I/IIA previous patterns continue. Cycladic imports at coastal settlements indicate an incorporation into the pan-Aegean 'international spirit' network. EH IIB Corridor Houses and similar structures are known or suspected at several settlements in the Argolid. The role of these structures in the distribution of agricultural produce amongst local communities[891] would point towards the increasing significance of agricultural land in power dynamics, though it is also important that these types of structures are commonly found at coastal settlements.[892] In these places, perhaps social storage mechanisms were more significant at the interface between external contact networks via the sea and Helladic social interaction hubs. The fall of the Corridor Houses did not coincide with any significant change in settlement patterns, suggesting that change may have

[891] Weiberg 2007, 37–39.

[892] Corridor Houses or similar function buildings have been confirmed at Lerna, Tiryns, Kolonna, Helike and Akovitika on the coast, while the recovery of roof tiles leads to speculation as to whether they were present at Asine, Raphina and Askitario on the coast. Inland examples are known from Thebes, Zygouries and possibly Tsoungiza (Shaw 2007, 137–151).

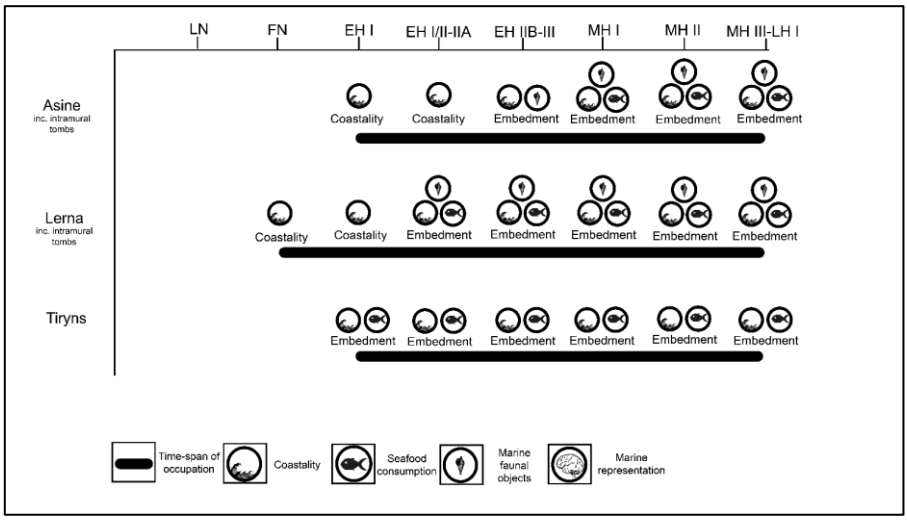

Figure 6.3. Seascape dialogue trends over the chronological span at selected settlements in the Argolid, incorporating the ideas presented in Chapter 6.1.

been social. It is clear, however, that settlements were not as large in EH III–MH I as previously, nor were they comparable to those of contemporary Crete.

In MH II, both Asine and Lerna remain important MH coastal centres, though their significance pales into comparison to that of contemporary Kolonna. The presence of marine shell necklaces in MH burials at Lerna may indicate some form of local significance and, as argued in Chapter 4, it appears to be skewed towards subadults. The coastal settlement focus through EH III–MH II is an indication of the significance of coastal areas for the maintenance of society, including sea-focused networks. MH III witnesses the beginning of a "colonisation of the interior", with inland settlements slowly being reoccupied or established. By MH III–LH I, the emergence of the shaft grave wealth at Mycenae is an indication of the increasing centrality of inland areas. At both Asine and Lerna there is evidence of seafood consumption from both domestic and funerary contexts throughout the MH–LH periods, suggesting that coastal centres utilised locally available food sources.

Despite the presence of central coastal nodes in the Argolid throughout the Bronze Age, it is inland at Mycenae where major developments took place. In contrast to other areas of the Aegean, the sustained coastal settlement pattern in the Argolid never led to the manifestation of seascape iconography. As Fig. 6.3 suggests, there was significant network interaction with the sea at some places, as well as embodied interaction through the consumption of seafood, though the sea never amounted to anything more than a functional space. In the Argolid it appears that communities did not make the investment in the sea for it to become entangled in lifeways to any significant degree and no seascape representation is evident until the beginning of LH I. Its introduction

at this juncture could be seen more through the lens of Minoanisation, effectively a splicing of seascape representation from Minoan cultural practice onto the mainland, where it is unlikely to have had the same significance, at least until much later in the LH period.

Attica

The LN settlement pattern of Attica had an inland focus. Unlike most other areas of the Aegean, the FN settlement pattern in Attica becomes less coastal, a further indication of a general avoidance of the coast and, in particular, the FN propensity for placing settlements on hilltops. The presence of a small number of coastal FN settlements is an indicator of potentially overlapping coastal and inland networks and the beginning of a gradual integration of Attica (particularly the eastern portion) into Cycladic and Aegean networks. FN patterns continue into EH I, though more substantial coastal settlements, such as Agios Kosmas and Askitario, become more prominent. Across the region, metals start to become more significant, evinced through the increasing presence of metal litharge at EH I settlements, which continues the gradual integration of Attica into sea-focused networks. In EH II, some inland settlements are abandoned, while the occupation of the coast and the arable areas, particularly the Mesogeia, continues.

Cycladic imports are present at several sites in Attica and at some places, Cycladic-type burial practices are adopted. Despite Cycladic influence, a seascape-focused iconography does not develop in Attica at this time. Earlier trends continue further in EH IIB as inland settlements, particularly those in the uplands, are abandoned. It was argued in Chapter 2 that this shift may be a result of a reorientation towards coastal networks, or prompted by the collapse of the Corridor House phenomenon. EH III–MH I saw the abandonment of several previously important coastal centres and it was argued that there was increasing evidence for occupation inland around the acropolis at Athens from this point onwards. Nucleation likely accounted for the abandonment of many settlements, though the fact that coastal settlements were not the beneficiaries of newcomers, unlike the pattern seen in the Argolid and Cyclades, would suggest a general avoidance of the coast. Those coastal settlements that do exist during this phase are located in areas of increasing significance, such as the Marathon bay and close to Lavrion. Indeed, later in the MH, it is in these places that the first *tumulus* and *tholos* tombs are located. By the mid-MH, the arable areas are the focus of settlement, such as the area around the acropolis, the Mesogeia plain and the Marathon bay, with a general preference for defendable locations. The presence of Aeginetan pottery both inland and in coastal areas, however, is an indication that sea-focused networks were important for many communities of the period.

Throughout the study period, Attica transforms from being an inward-looking region, between LN–EH I, before becoming more incorporated with sea-

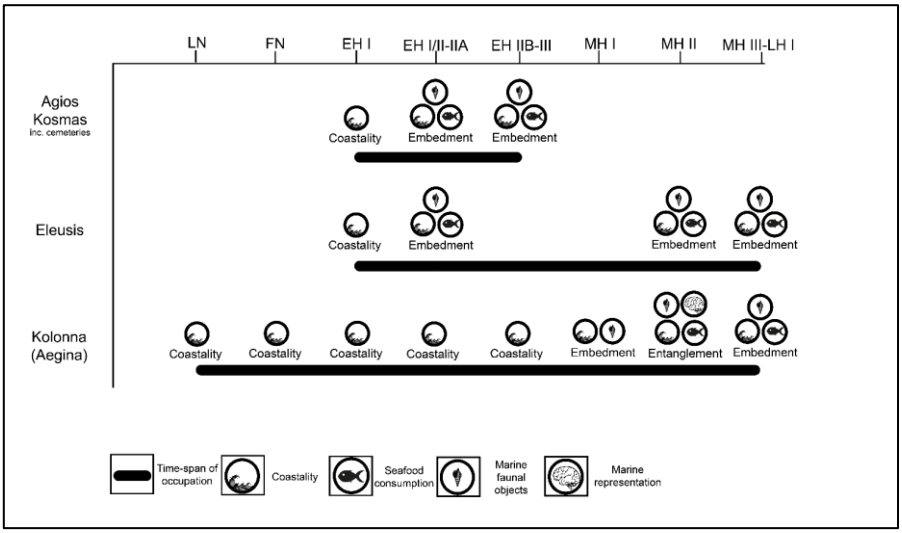

Figure 6.4. Seascape dialogue trends over the chronological span at selected settlements in Attica and the Saronic Gulf, incorporating the ideas presented in Chapter 6.1.

focused networks between EH II–III and then reverting to a region where coastal and inland settlements were present from MH I–LH I. There is a general lack of evidence for human-sea interaction in the area, with the exception of Agios Kosmas and Eleusis (Fig. 6.4) and exacerbated by rescue excavation in the region, where time has rarely allowed for the thorough study and publication of marine faunal material.

Saronic Gulf

Discussion of the Saronic Gulf includes the islands of the Saronic, as well as the coastal areas bordering it for a comprehension of wider developments. In LN–FN the only habitation is at Kolonna on Aegina, which even at this early stage is an outlier in comparison to the rest of the Greek mainland, where coastal habitation is rare. In the EBA, small settlements are apparent on the southern coasts of Attica, Salamis, eastern Corinthia and also on several Saronic islands, including the tiny islet of Modi. This dispersed habitation of the islandscape was probably influenced by the dominant method of travel of the time, paddled boats or longboats, with each of these small settlements being suitable stopping points on journeys north-south between Attica and the Argolid, and east-west between the Corinthia and the Cyclades.

The abandonment of most settlements in EH III could have been prompted by two mutually exclusive developments. Firstly, the appearance of sailing boats in the region may have prompted the abandonment of the transport system this settlement pattern depended on and, secondly, Kolonna appears to become an increasingly substantial power in the Saronic Gulf as the EBA

wears on. By the middle of the MBA, Kolonna is one of the key players in the Aegean. Maritime iconography focused on seafaring – with a military undertone – indicates that Kolonna was a central maritime hub of the region, suggesting that some social groups at the settlement associated identity with seafaring (Fig. 6.4). This appears to be corroborated by the appearance of several fortified MH III settlements in southern Attica, eastern Argolid and Salamis.

Boiotia and Phthiotis

Boiotia and Phthiotis are grouped together here because of their geographical proximity, but also the scarcity of evidence for seascape dialogues. Key Boiotian sites such as Lithares, Eutresis, Thebes, Orchomenos and Gla all fall outside the geographical scope of the study. This tells us two things. Firstly, it is clear that in all periods, the inland areas are the central focus of key developments in Boiotia and rarely do settlements fall within the catchment area of this study. Secondly, that the geography of the region did not include extensive coastal plains unlike, for example Attica or Thessaly, and so the focus of habitation was on the fertile interior, rather than the mountainous coasts.

In contrast to Boiotia, there are coastal plains in Phthiotis, and yet there does not appear to be any major centres in the region until the establishment of Mitrou at the end of the EBA. That Mitrou occupied a coastal promontory is suggestive of an incorporation into sea-focused networks, though with the exception of activity between modern Atalanti and Tragana (Mitrou, Atalanti cemetery and Proskynas), the rest of Phthiotis appears vacant. Perhaps most of the population of Phthiotis was focused in this specific area, or future archaeological research will discover new settlements on the coasts of the region.

Crete

Human-sea interaction on Crete is a tale of two halves, with an apparent lack of engagement outside Knossos in LN–EM followed by increasing engagement from EM II onwards (Fig. 6.5). LN Crete appears to have been generally underpopulated, with the only major settlement inland at Knossos. Over the course of the FN–EM I periods, a range of elevated, defensive settlements were established suggesting a general instability on the island. Married to this is a lower coastality, with only a few exceptions. By EM IIA,
however, this picture begins to change. Elevated, defensive settlements were abandoned and boat models appear with more regularity at coastal settlements and are also deposited in tombs, suggesting an increased importance of seafaring to Minoan social dynamics, as well as identity in death.

In contrast to other areas of the Aegean, EM IIB was a period of continuity. Coastality further increases and seafaring appears to maintain a social significance. EM III–MM I sees the beginnings of a series of developments that

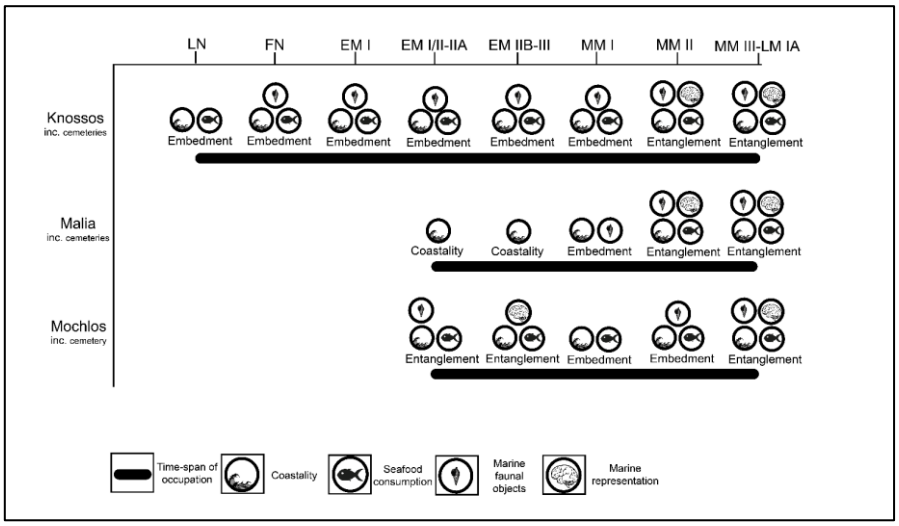

Figure 6.5. Seascape dialogue trends over the chronological span at selected settlements in Crete, incorporating the ideas presented in Chapter 6.1.

eventually led to the formation of the first palaces on Crete. Boat models cease to be deposited in graves while marine animals begin to be represented, suggesting a shift in how seascapes were conceptualised and expressed. From this period onward, the consumption of seafood is evident at most coastal settlements on Crete, although only as a supplementary role in local diet.

By the early second millennium, a vivid imagery of the sea is evident on personal sealstones, particularly focused on MM II Malia. Marine objects begin to be deposited in palace shrines, cave sanctuaries and atop peak sanctuaries, suggesting an entanglement between the sea and Minoan cult practice. This is evident throughout the Protopalatial and succeeding Neopalatial periods with triton shells, both real and imitated, in cult performance as well as the incorporation marine animal representation on a range of material culture forms in association with cult places. By LM I, this interest in marine themes was manifested in fresco paintings and exported to the Minoanised southern Aegean, before marine motifs proliferate on LM IB 'Marine Style' pottery.

Cyclades

In the Cyclades, the placement of most LN settlements on coastal bays suggests the importance of extra-island contact networks. At Saliagos on Antiparos, a range of marine faunal remains suggest significant consumption of seafood which needs to be verified further at other contemporary settlements to establish a trend. The FN period sees possible competing networks at play, the Attic-Kephala network centred on the northern Cyclades, eastern Attica and southern Euboia axis and the south and eastern Cyclades centred on Thera and

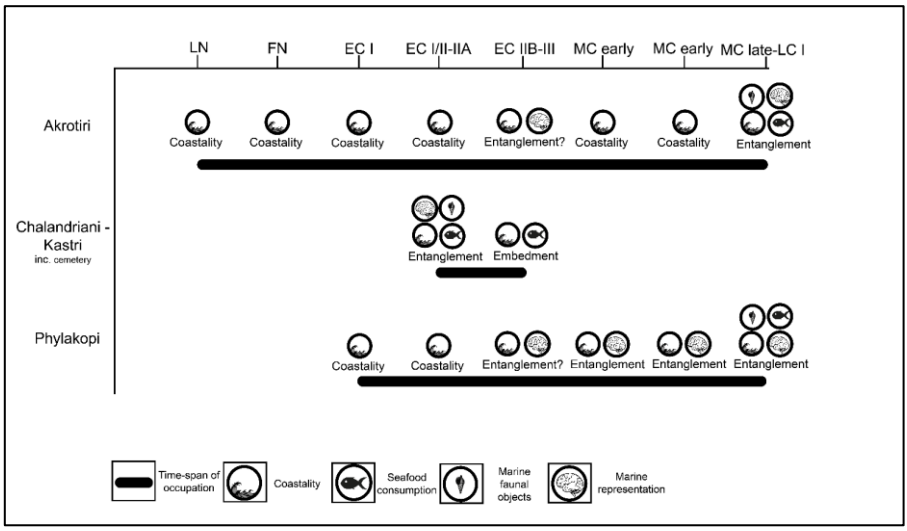

Figure 6.6. Seascape dialogue trends over the chronological span at selected settlements in the Cyclades, incorporating the ideas presented in Chapter 6.1.

Naxos. Is not a surprise that seafaring imagery appears on Andros, one of the more elevated and wooded islands, and may be instructive of the potential for intra-island conflict in the archipelago.

The ensuing EC I saw a long, stable period of small settlements and a coinciding cessation of seafaring imagery. By EC IIA, however, seafaring imagery returned, stimulated by the role of Cycladic seafarers and the 'international spirit' network (discussed in greater detail in Chapter 6.2). The collapse of this network in EC IIB is likely a result of a perfect storm of climatic stress (drought), new technology (sailing boats) and network conflict (Anatolian trading network). The uncertainty of this period is reflected in the focus of settlement in defensive positions and surrounded by fortification walls.

Almost all defensive settlements were abandoned at the end of EC IIB and by EC III–MC Early the Cyclades appears to have been a much changed region. The focus of settlement shifted toward coastal places, where entire island populations appear to have been nucleated. This nucleation, as Chapter 2 argued, is likely to have been a result of "coalescent settlements", where people moved from dire living situations to coastal settlements on larger islands such as Melos, Naxos and Thera, each of which had fresh water sources. This configuration suggests that violence was not the catalyst (no defensive settlements) and the focus on larger islands suggests a need for resources (water, food), while the preference for coastal settlements also implies the necessity of external contact networks. Remarkably, this period also appears to have generated an interest in marine imagery, particularly decorating pottery at Phylakopi (Fig. 6.6).

The cohabitation of a patchwork of populations may have led to increased internal competition among individuals and groups, some displaying markers

of personal identity through the iconographic incorporation of marine animals. That boat iconography is hereafter avoided, suggests that the meaning of the Cycladic seascape changed after EC III. By the late MC period, the configuration of coastal settlements at key points across the islandscape led to greater entanglement with Crete, which brought new material culture and technology, though an interest in the sea persists throughout.

Dodecanese

There are few settlements in the Dodecanese islands before the start of the MBA. In the LN, cave sites appear to have been important and while there is scant evidence for non-cave habitation, it is not overwhelming. The FN sees the occupation of smaller islands, such as Leros and the tiny Alimia islet and this may be an indication that additional FN habitation awaits discovery on smaller islands in the future. The entire EBA is almost invisible and, with the exception of an increasingly visible EB III (Seraglio, Asomatos and burials on Kos), the entire EB I–IIA sequence is missing. This is either the result of a lack of adequate archaeological exploration in areas where these settlements are to be found or a sign of a real lack of habitation in the area, which puts it in stark contrast with the contemporary Cyclades. My thoughts are that increasing archaeological focus in the excavation of already known EBA site scatters, rather than further survey, will bear fruit in bringing the EB I–II period to light in the Dodecanese.

After the beginning of MB I, the islands of the Dodecanese begin to resemble those of the contemporary Cyclades, with nucleated settlements, typically one or two on each major island placed beside favourable anchorages for sailing ships. As a result, the Dodecanesian settlements of the MBA became increasingly entangled in a web of Minoan networks, which stimulated cultural changes at specific settlements. Unlike in the contemporary Cyclades and Crete, however, there is little indication of the formation of seascape iconography during the study period.

Euboia

A lack of LN–FN settlements on Euboia may be a result of the habitation of caves, such as in the area around Tharrounia and Agia Pelagia. Coastal habitation starts in EH I, particularly in central Euboia. By EH II, the north and south Euboian gulfs appear to take on a greater significance and the island has a higher coastality than some other insular regions. Throughout time, there are periods in which some areas of Euboia appear to be pulling in different directions to the rest of the island, with the south more in contact with the islands and Attica, the centre with Boiotia and Pthiotis and the north with Thessaly.

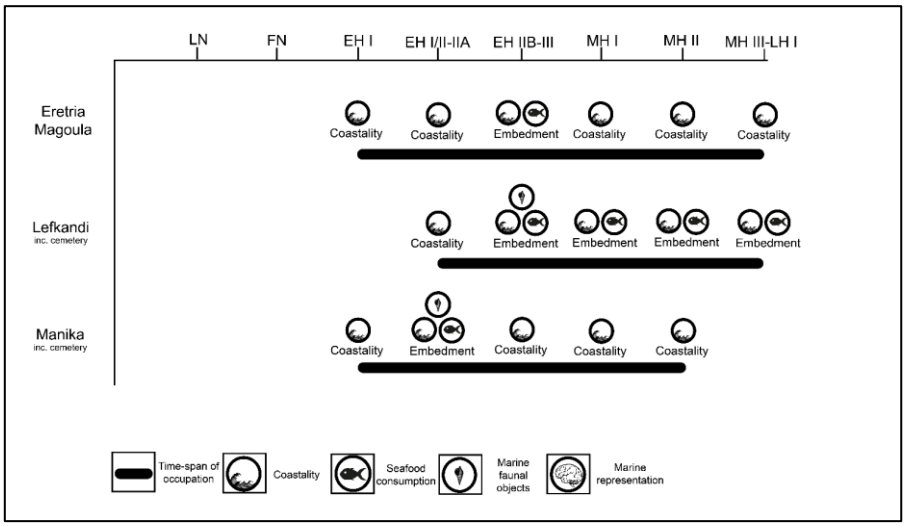

Figure 6.7. Seascape dialogue trends over the chronological span at selected settlements in Euboia, incorporating the ideas presented in Chapter 6.1.

Manika, in particular, becomes one of the predominant settlements of the Aegean and the presence of Cycladic imports attests to the importance of sea-focused networks.

Unlike the rest of the Aegean islands, Euboia is not as affected by the changes associated with the Lefkandi I/Kastri phenomenon and greater evidence for seascape dialogues can be found in this period (Fig. 6.7). In the MH period, the island sees a range of settlements along the south Euboian gulf, connecting Euboia to Attica, the Saronic Gulf and to the Argolid, though some MH settlements are located further inland, suggesting a range of different motivations in settlement patterns. A lack of indisputable LH I settlements in the region does not allow any meaningful discussion of later developments, though it is likely that most of the major coastal MH settlements continued during this period.

Macedonia and Thrace

The LN settlements of Macedonia are focused inland, on fertile plains. From the FN to EB II there is increasing evidence for higher coastality, likely a result of interaction with vibrant north and eastern Aegean island coastal networks, linking coastal Macedonia with the southern Aegean but in particular, western Anatolia. From EB III–LB I, there is evidence for increasing nucleation at the coastal settlements of Toroni, Agios Mamas and Toumba.

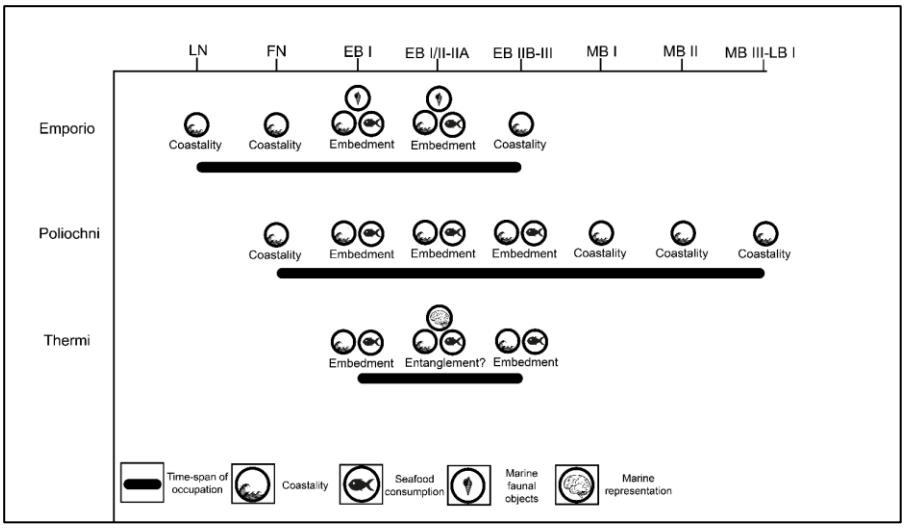

Figure 6.8. Seascape dialogue trends over the chronological span at selected settlements in the north and east Aegean islands, incorporating the ideas presented in Chapter 6.1.

Toumba stands out in particular in MB–LB I as a settlement well connected with the rest of the Aegean. The evidence for intensive production of murex dye at the settlement is a geographical anomaly, with most other evidence located in the southern Aegean, particularly in areas well connected to Crete. This murex dye exploitation is sound evidence of human-sea interaction in the area and perhaps the increasing significance of Minoan contact in the area. At present, the MBA and LBA of these regions are not well understood.

Thrace, of all the regions included in this study, is the least represented. As suggested in Chapter 2, this is a result of an avoidance of the coastal plains, as there is substantial evidence of habitation further inland, outside the catchment area.

North and east Aegean islands

The northern and eastern Aegean islands appear to be among the most stable areas throughout the study period. In all periods, coastal settlements dominate and the stability of these settlements indicates the centrality of coastal living. From FN–EB IIB these islands appear to have been key nodes in an Anatolian Trading Network connecting western Anatolia with the Greek mainland and Aegean islands. This network sees its zenith in EB IIB, when this network is part of a wider system connecting the Aegean to central Anatolia and Mesopotamia. The collapse of the network after EB III did not lead to the abandonment of these coastal settlements, which continue to be occupied throughout the MBA and LBA.

In these settlements, evidence for marine food consumption is not overwhelming, suggesting that despite a network focus on the sea, seafood did not play a defining role in local diet. Rather it appears that the most significant development at these sites was the exchange of metals and local production of metal items. Despite a high degree of coastality for over two millennia, there was never a significant local investment in seascapes (Fig. 6.8), which contrasts to the situation seen in the Cyclades.[893] The communities of the north and east Aegean islands may have rather perceived the sea in more functional terms, as a place of network contact and communication.

Thessaly

Thessaly appears to follow a similar developmental trajectory as Macedonia. Large tell settlements are present in the LN, with several key settlements located outside the study area. The focus of habitation on the coasts of the Pagasitic bay, however, is an indication of the significance of the sea as a resource. Fish remains have been recovered from LN Pevkakia, while at Dimini there is abundant evidence of marine shell object production making LN Dimini one of the key centres of *Spondylus* shell object production. These patterns remain much the same in the FN.

From the beginning of EH I onwards, Pevkakia increasingly emerges as one of the key centres of network exchange in the central Aegean, with strong links to the southern and northern Aegean, as well as Anatolia. In contrast, occupation at Dimini appears to diminish during the EBA, which may have been a result of the receding coastline between the LN and the end of the EBA. Correspondingly, occupation at Volos appears to begin at the same time, which may be an indication of the movement of population from Dimini. Pevkakia remains central throughout the MBA and Aeginetan and Minoan imports attest to its participation in longer-range sea networks. Toward the end of the MBA, the settlement at Volos appears to become increasingly important, coupled with reoccupation at Dimini. These developments may indicate a reversal of nucleation, which may have been prompted by population

[893] A boat model from Thermi on Lesbos is a solitary example of seascape representation in the region, though could be an import rather than being of local inspiration.

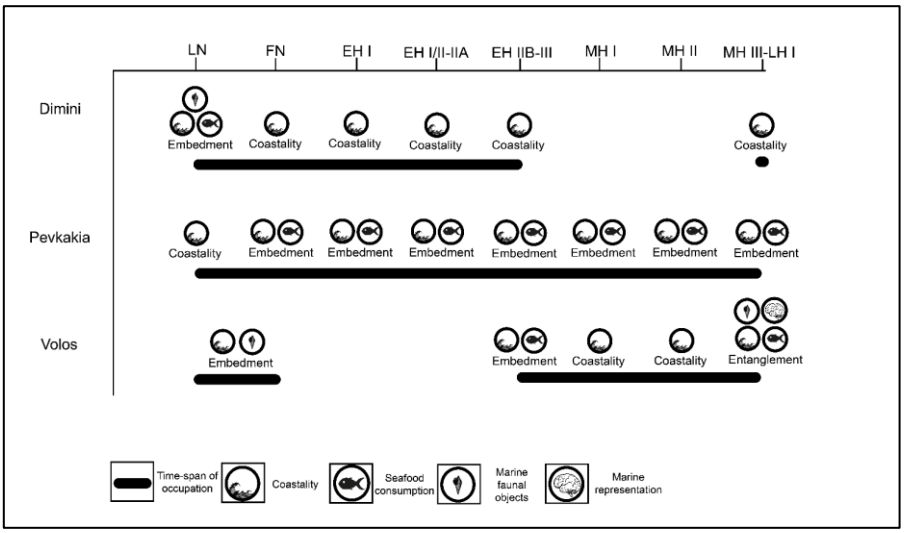

Figure 6.9. Seascape dialogue trends over the chronological span at selected settlements in Thessaly, incorporating the ideas presented in Chapter 6.1.

increase. The presence of boats on a few MH III sherds may suggest the increasing importance of sea networks at Volos and are perhaps an indication of a local power attempting to derive social meaning from seafaring, much in a similar manner to that seen in the Saronic Gulf at Aegina (Fig. 6.9), though the evidence is admittedly scant. The presence of distinct local settlements in a geographically restricted area, such as Dimini, Volos and Pevkakia, may have caused tension and competition between communities, which may have driven a significant social investment in the sea as a means of community identity.

6.4. Contextualising the results

In the introductory chapter, the aims and questions of the study were laid out. The overarching aim of the study was to better understand prehistoric Aegean human-sea interaction from a regional and temporal standpoint. In order to contextualize the enquiry, previous research on seascapes was presented from both outside and inside the Aegean and a series of research gaps were identified. These included a lack of focus on embodiment, the use of only one material source in addressing seascape-related questions and a lack of exploration of the deep and complex relationship between seascapes and mortuary practices. There has been a lack of spatial approaches to seascapes and few studies have taken a pan-Aegean perspective spanning multiple periods. It was suggested that more research was needed on "cultural responses to seascapes".

The remainder of the chapter addressed theoretical and methodological concerns of the study. Material Engagement Theory (MET) was outlined as the theoretical heartbeat of the study, highlighting the importance of the brain-body interface, embodiment and embedment in thinking, as well as the role of material culture in understanding the significance of environment in thought. The methodological framework outlined the geographical and chronological limitations as well as an overview of environmental factors and explanation of the contextual approach to the study.

The spatial relationship between locales, places of habitation or burial, and the sea was the core subject of the second chapter. By using GIS analysis and "least-cost paths", the cost of travel to the coast from locales was modelled, determining their "coastality". This coastality – an expression of spatial proximity to the coast – was utilised to determine regional or chronological fluctuations in the spatial relationship between locales and the sea. Regional patterns were related to wider developments. It was determined that there were periods and regions showing greater coastality, for example EC I Cyclades, EM III Crete and MC Cyclades. The role of networks was central to the development of higher coastality. It became clear that coastality was a fundamental prerequisite for the formation of seascapes, though the formation of seascapes was not an inevitable outcome of coastality.

The purpose of the third chapter was to determine the extent of seafood consumption focusing on a *chaîne opératoire* of embodied *praxis* including acquisition (fishing and collection), processing (storage and cooking) and consumption (quotidian, cult or burial contexts). An overview of taphonomic concerns of the marine faunal data was outlined and it was concluded that cultural and natural formation processes played a large role in the formation of the data currently available. Central, however, has been the lack of adequate methodological and recovery practices in archaeological excavation, added to an unfortunate neglect of marine faunal data, a situation that has begun to be rectified only in recent years. Stable isotopic data was also utilised in answering the questions posed in the chapter, though until its wider application and a more extensive database of samples has been gathered, its usefulness is mitigated. This is exacerbated by uncertainties of identifying marine protein in stable isotopic data. More extensive consumption of seafood was found on Crete, as well as a relatively few sites outside Crete. Seafood detritus is found in a range of contexts on Crete, from domestic areas, urban shrines, extra-urban shrines and cemeteries. At no place, however, does it appear that seafood was anything more than supplementary to local diet.

The fourth chapter presented evidence for the utilisation of marine faunal material (predominantly marine mollusc shell) used in a wide range of embodied practices. These include the production of murex dye, manufacturing debris associated with the production of marine shell material culture, the utilitarian function of marine shell objects, the use of marine shell objects in cult practices and finally the use of marine shell objects as body ornaments for

display. Marine shell objects found a wide utility in the prehistoric Aegean, though chronologically, they tend to be focused in the LN–EB III periods. Exceptions include the increased production of murex dye on Crete in particular, but also in the wider Aegean towards the MBA–LBA transition and the use of triton shells in cult places in Crete from the MBA onwards.

The fifth chapter determined that aspects of the sea led to various iconographic representations of seascapes throughout time and space. Seafaring was among the earliest sea-related themes to be represented and held a particular currency in periods when there was some form of tension or conflict in network interaction. Examples include the representation of boats in the FN and EC II Cyclades and the MH II Saronic Gulf. The importance of seafaring on EM Crete was represented through the use of boat models rather than seafaring iconography, highlighting different approaches to the visualisation of seascapes. An interest in different marine animals is perceptible from the mid-EBA onwards and it was argued that these motifs served as metarepresentations of the sea. Sustained interaction with the sea eventually led to the incorporation of marine themes within an archaeologically visible syntax of cult paraphernalia and practices on Crete, beginning in the early second millennium but accelerating in the Neopalatial period. It is clear that Minoan interest in the sea was present prior to the appearance of LM IB Marine Style pottery.

With the findings outlined above, how do they compare with previous research and what new avenues of inquiry have been uncovered? This study has shown that cultural attitudes towards the sea were temporally, geographically and culturally specific; they were in a continual state of renegotiation and were not an inevitable outcome of life in the Greek landscape. It has also presented an analysis of cultural attitudes to the sea, highlighted as an important avenue for the seascape perspective by Theodoropoulou.[894]

The argument put forward by Vavouranakis that seascapes were an important resource of manipulation and deployment within funerary rites in Prepalatial Crete,[895] is supported by the study presented here. Focusing on the north coast of Crete at least, the seascape appears to increase in significance in EM IIA, evinced through the recovery of boat models in mortuary spaces at Mochlos and Palaikastro and this pattern becomes more intense at Mochlos in EM IIB (Chapter 5.4.2). In EM III, the deposition of boat models ceases and it appears that seascapes become less significant in the mortuary arena, the big exception being the Archanes Phourni cemetery, where the marine world is represented by marine shells and visual media.

Broodbank's assertion, that the physical act of seafaring could be transformed into a status-generating venture,[896] is supported multiple times across

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[894] Theodoropoulou 2011, 62.
[895] Vavouranakis 2011c, 91–118.
[896] Broodbank 2000, 256.

this study and is applicable not only within the context of the EC IIA Cyclades, but equally valid in the context of MH II seafaring at Kolonna on Aegina and MM II–LM I Crete. In each of these cases, the physical act of seafaring, the control of network access, precious object supply and exotic knowledge could be converted into social currency through the production and display of images connected to seafaring in various material culture media. To an extent, these images may have had an esoteric component, but their deployment in contexts of communal or public display suggest an intersubjective knowledge and common understanding of the connotations of seafaring imagery, even if the specifics were unknown.

In discussion of insularity, it was argued that communities could make a significant investment in the sea, through maintaining external contact in order to overcome insularity, argued in the case of the EC II community at Chalandriani on Syros.[897] What this study has shown is that, in a similar manner, a deeper relationship with the sea is achieved only through a greater communal investment in the sea, as is observed at Chalandriani, but at several places across time and space in the Aegean, from FN Strofilas on Andros, to MC–LC Phylakopi on Melos and MM–LM Knossos on Crete.

Unsurprisingly, given its rich archaeological record, seascape dialogues in the MBA–LBA southern Aegean has been the source of much discussion. The role of seafood consumption in providing social and symbolic value within communal and public display[898] can be supported by the findings of this study. Seafood appears to have played a role in some elite social groups connected to Knossos, suggesting that some groups were making the choice to consume more seafood than other groups buried in the cemeteries. This appears to have been mimicked at Mycenae, where isotopic evidence suggests that some of the elite buried there consumed more marine protein than others. Marine faunal remains have also been recovered from palatial and large non-palatial settlements (Malia, Palaikastro, Gournia, Zakros, Knossos) suggesting that seafood consumption was practiced in these more elite spaces, not just by those at small coastal settlements.

Connected to this, the idea of the seascape as a place exploited by some groups in Neopalatial Crete[899] can be supported also in this study and in fact, interpretation can go above and beyond. It is outside the remit of this study to verify Haysom's argument as to whether the Minoan palaces had a land-centred view,[900] though the lack of a palace at Mochlos, a community with heavy maritime leanings in EM II, may hint towards this interpretation. Despite this land-centred view, the marine world appears to have permeated cult practice

[897] Broodbank 1993, 337.
[898] Mylona 2020, 179–213.
[899] Haysom 2011, 139–160.
[900] Haysom 2011, 153–154.

at various places and, as argued with seafood consumption above, seascapes could be deployed by elites through the use of marine imagery and ritual orchestrating objects of a marine origin or imitation. While the palaces probably had a land-centred focus, the marine world also played a role in power dynamics, social strategies, cultic symbolism and elite food consumption. Until research incorporates comparative analyses of terrestrial and marine faunal remains and comparative studies of terrestrial and sea imagery, the extent of the role of the sea cannot be quantified with any certainty.

As a result of this analysis, it is difficult to support the idea that there was some form of taboo on seafood consumption.[901] If there were some form of taboo, we would not see the exploitation of the sea in both the Protopalatial and Neopalatial periods, at palatial and non-palatial settlements alike. This can be observed through seafood consumption, the utilisation of marine fauna in objects, which take on a cultic significance (triton shells), and the exploitation of purple dye at several locations across the north coast of Crete in MM II–III. Any arguments based on the lack of marine faunal remains and a lack of evidence as suggested by isotopic data extrapolate what are already a thin basis for interpretation. Marine faunal evidence has suffered heavily from taphonomy and yet, despite this, there is ample evidence for the consumption of seafood at several Minoan communities, which perhaps not more than a subsidiary level of consumption, is certainly more than would expected if there was a taboo. Similarly, the isotopic dataset for Minoan Crete is in no way sufficient enough to represent Minoan society as a whole until large scale programs of isotopic analyses provide a more substantial evidence base from which to draw conclusions. Using such a small sample size to generalise about Minoan society runs the risk of glossing over regional and localised differences in marine consumption and the isotopic evidence from Knossos, where some groups appear to have consumed more marine protein, warn against the assumption that seafood was not consumed in any substantial manner at the land-centred Minoan palaces.

It is also difficult to support an ambiguity towards marine imagery on Crete. Representation of fish becomes increasingly naturalistic over time and new species are incorporated into a marine representational repertoire, such as octopus and dolphins. It is clear that there indeed was a keen interest and knowledgeability of the marine world in Palatial Crete, as suggested by von Ruden,[902] which is also visible at select settlements in the southern Aegean (MC–LC Phylakopi and LC Akrotiri), suggesting an interest in the marine world was not just limited to Crete.

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[901] Berg 2011, 13–20.
[902] von Ruden 2015, 57.

This study has also highlighted aspects not covered at any great length by previous research. One such is the relationship between seascapes and eschatology, touched upon by both Vavouranakis and Georgiadis.[903] Throughout the study, it is clear that funerary practices are one of the key areas for the expression of seascapes. For seascapes as an eschatological place, the evidence is unfortunately scant. A concentration of *pithos* burials across the shorelines around Pacheia Ammos and Gournia in the MM may indicate some form of preference for coastal burial which may reflect a deeper incorporation of the sea into eschatological beliefs on Crete. This may eventually have manifested in the incorporation of marine motifs on burial containers as seen in the LM period, as well as the integration of marine objects into cult practices. This potentially brings in MC settlements of the Cyclades, where it was suggested in Chapter 2 that sea burial may account for the comparative lack of MC–LC burials, especially when compared to the EC period. The EC IIA burials at Chalandriani could be read to have given some form of greater significance to the sea in eschatological belief, with maritime motifs accompanying the dead, tough the evidence could as easily be read as a connection to seascapes as a bodily performance and status-generating activity in life.

An underappreciated feature of the study of seascapes is the role of social stratification.[904] It has proven difficult to ascertain the role that seascapes may have played in the lives of non-elite groups and individuals. In the best evidence of the incorporation of seascapes into iconographical syntax, Neopalatial Crete, there is a distinct impression that the deployment of seascapes was patronised by elites. This is illustrated particularly by the plethora of marine and maritime scenes on MM–LM seals, which presumably were personal insignia of elites or sub-elites. The performance of cult was likely dictated by elites and so the use of a range of marine-derived material culture in these contexts is likely to have been used by high status attendants. While it is clear that the archaeological visibility of seascapes is in some way correlated to elite status, this does not mean that ordinary individuals or groups living in the littoral zone did not have their own range of seascape-derived beliefs and deeper cognitive integration with the sea. The issue is one of archaeological visibility, the material evidence of the existence of non-elite seascape interaction is predicated solely on stray fishing hooks and the evidence of seafood consumption in non-elite architectural settings. Unfortunately, an "iconography of the sea" is not archaeologically detectable in non-elite contexts.

A final statement can be made about the creation of seascapes. It is clear from this study that entangling seascapes are not an inevitable outcome of human-sea interaction. There are several instances where communities had a long-term engagement with the sea through coastality, seafood consumption

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[903] Vavouranakis 2011c; Georgiadis 2003.
[904] Except for Haysom 2011, 141.

and utilisation of marine objects in material culture but where entangled seascapes did not develop. In Chapter 3 it was argued that deficiencies in marine faunal data accounts for current pessimistic estimates of the extent of marine food consumption in the prehistoric Aegean. Evidence for such consumption alongside an incorporation of the marine world in cult practice and individual identity is present on Crete, but lacking on the mainland. It is clear that the consumption of seafood does not always directly lead to the formation of seascapes. The appearance of sea-related imagery indicating a more intensive embedment of seascape in local communities only appears when there is some form of friction or competition in exchange networks, different competing networks or internal competition within a society. This comes in two forms, a maritime emphasis and a marine emphasis. To elaborate, a maritime emphasis is evident in EC II Cyclades and MH II Kolonna. In the first example, various large Cycladic settlements such as Dhaskalio, Vathi and Chalandriani played a central role in the 'international spirit' network. Competition between them for prominence is likely to have driven the need to express a connection to seafaring. For the second example, Kolonna appears to have been an exceptional settlement in the region. Its larger population and island situation led to a local investment in seafaring, which is likely to have led to its central role in the distribution of local ceramics, as well as its potential military intervention in the lands it bordered. Seafaring imagery along with a military theme decorating food storage vessels suggests a deep link between sustenance, the sea and power.

For other areas, the iconographic visibility of the seascape centres on marine animals. This is best exemplified by the substantial shift from seafaring in EC IIA Cyclades toward the representation of marine animals, such as fish and dolphins in the MC. It is suggested here that this shift reveals a changing conceptualisation of the seascape. The marine animals so abundantly represented at Phylakopi formed metarepresentations of the concept of the sea and served to express competing identities between different groups, some of which may have been connected to the sea. On MM Crete, this form of expression led to the incorporation of the marine world into the performance of cult, suggesting a deeper symbolism between the representation of marine animals and religion. We cannot forgo the possibility that this may also have been the case in the MC Cyclades. Although there are few identified shrines, the continued representation of marine animals on ceramics may tie these objects to the performance of some form of cult centred on the sea. That flying fish and fishermen with bountiful catches of fish should be chosen to decorate elite, possible cult places in the LC I Cyclades may therefore not be the result of the import of a Cretan symbolic syntax, but the archaeologically visible expression of a local link between the sea and religion in the archipelago.

6.5. Suggestions for future research

The research undertaken in this study has highlighted several issues on which further research would be beneficial. A variety of issues were highlighted already in the literature review in the introductory chapter, and while some of these were addressed in the preceding chapters, others remain to be tackled in the future. The first suggestion is the need for an extensive and incisive theorisation of what seascapes are and the role they played in human society. This study has presented one interpretation of what seascapes are, how seascapes form and the role they played in ancient cultures, though just as the sea could play a multitude of roles in the formation of seascapes in the past, a seascape can be theorised in different ways in the present.

Due to the spatial and chronological boundaries of this study, a relatively small slice of the Greek mainland was incorporated into the analysis. Future work could focus on the incorporation of entire regions, e.g. Peloponnese, Thessaly or the entire Greek mainland, in order to determine how prevalent marine food consumption was further inland and to compare between coastal and inland regions more effectively. Another option would be to compare between different regions of the Mediterranean, for example the expression of seascapes in local culture between the Aegean, Cyprus and the Levant. The future possibilities of using a seascape perspective to guide research are numerous.

The authoring of Chapters 3 and 4 were only possible due to the fantastic work of a relatively small number of marine faunal specialists. Marine faunal analyses have commonly been relegated to appendices at best and at worst, missed out entirely. Aegean prehistory as a field of research can do better. It is important to challenge the interpretations offered in this study and others, which only becomes possible with more and higher resolution data. This work has steadily been underway on Crete for some time now, though it is important that archaeological research in other areas of the Aegean catches up so that we do not ignore one of the fundamental, ever-present resources to ancient people, the sea.

The concept of coastality has emerged through this study as a useful index of sea-focused network access rather than just an expression of seascapes. Further work on this concept would help to determine how coastal regions or specific areas were through the incorporation of survey data. The method used by the author to derive a coastality value could be further refined by technologically perceptive researchers to produce a more accurate value for the cost of human travel. A development, for example could be to tie the value for travel to a time measurement. In a sense, this would give an amount of time as an expression of coastality, which could be achieved through experimental archaeology.

7. Περιληψη

Στην παρούσα μελέτη παρουσιάζεται η ανάλυση της αλληλεπίδρασης του ανθρώπου με τη θάλασσα, με βάση την ενσώματη και την ενσωματωμένη δράση του ανθρώπου στις παράκτιες και νησιωτικές περιοχές του Αιγαίου. Η χωρική σχέση των τόπων δράσης του ανθρώπου με τη θάλασσα (*coastality*) εξετάστηκε με τη βοήθεια συστημάτων μελέτης γεωγραφικών πληροφοριών (GIS.).[905] Μελετήθηκε επίσης η ενσώματη διάδραση με τη θάλασσα, τόσο στην μαγειρική όσο και στον υλικό πολιτισμό, με έμφαση στα χρονικά και χωρικά μοτίβα έντασής της. Η εικονογραφική αναπαράσταση της θάλασσας στον υλικό πολιτισμό έχει επίσης μελετηθεί, με έμφαση στην ενσώματη δράση του ανθρώπου, καθώς και στο αρχαιολογικό και κοινωνικό συγκείμενο των αντικειμένων.

Στην εισαγωγή της παρούσας μελέτης, *Κεφάλαιο 1: Εισαγωγή στις θαλασσογραφίες*, παρουσιάστηκαν οι ερευνητικοί στόχοι και τα ερωτήματα της μελέτης. Στόχος ήταν η κατανόηση της αλληλεπίδρασης ανθρώπου-θάλασσας στο προϊστορικό Αιγαίο αναφορικά με τις θαλασσογραφίες (*seascapes*), τα πρότυπα έντασης και μεταβολής τους, καθώς και η παροχή μιας πιο εις βάθος κατανόησης αυτής της αλληλεπίδρασης, τόσο από γεωγραφική, όσο και από χρονική άποψη. Μια σειρά προηγούμενων ερευνών για τις θαλασσογραφίες, τόσο εκτός όσο και εντός του Αιγαίου, μελετήθηκαν σε βάθος, και βάσει αυτών επισημάνθηκαν μια σειρά ερευνητικών κενών. Αυτά περιλάμβαναν την έλλειψη εστίασης στην ενσώματη ανθρώπινη εμπειρία, τη χρήση μίας και μόνο πηγής του υλικού πολιτισμού για τη μελέτη ερωτημάτων που σχετίζονται με τις θαλασσογραφίες, καθώς και την έλλειψη διερεύνησης της βαθιάς και πολύπλοκης σχέσης μεταξύ των θαλασσογραφιών και των ταφικών πρακτικών. Πρόσθετες προτάσεις που διατυπώθηκαν ήταν πρώτον, ότι οι ερευνητές πρέπει να οδηγήσουν τα ερωτήματά τους σχετικά με τις θαλασσογραφίες, προς την κατεύθυνση των "πολιτισμικών απαντήσεων", δεύτερον, ότι απαιτούνται περισσότερες γεωγραφικές προσεγγίσεις για την ανάλυση των θαλασσογραφιών, και τρίτον, ότι εν ελλείψει μελετών που έχουν παναιγαιακή προοπτική, η έρευνα χρησιμοποιεί συχνά μια βραχυπρόθεσμη και γεωγραφικά περιορισμένη προσέγγιση των θαλασογραφιών. Το υπόλοιπο κεφάλαιο ασχολήθηκε με τους θεωρητικούς και μεθοδολογικούς προβληματισμούς της διατριβής. Η Θεωρία της Υλικής Δέσμευσης – *Material Engagement Theory*

[905] My sincere thanks to Charikleia-Ainta Zikidi for helping with the translation of this text into Greek.

– χρησιμοποιήθηκε ως ο θεωρητικός παλμός της μελέτης, αναδεικνύοντας τη σημασία της διεπαφής εγκεφάλου-σώματος, της ενσάρκωσης και της ενσωμάτωσης στη σκέψη, καθώς και τον ζωτικό ρόλο του υλικού πολιτισμού στην κατανόηση της σημασίας που έχει το περιβάλλον στη διαμόρφωση της ανθρώπινης σκέψης. Το μεθοδολογικό πλαίσιο περιέγραψε τους γεωγραφικούς και χρονικούς περιορισμούς αυτής της έρευνας και παρείχε τόσο μία επισκόπηση των περιβαλλοντικών παραγόντων που επηρέασαν τα αποτελέσματα αυτής της έρευνας, όσο και μία επεξήγηση της συγκειμενικής προσέγγισης αυτής της μελέτης.

Η χωρική σχέση μεταξύ των τόπων δράσης, των τόπων κατοικίας ή ταφής, και της θάλασσας ήταν το κεντρικό θέμα του *Κεφαλαίου 2: Η χωρική σχέση των τόπων αλληλεπίδρασης του ανθρώπου και της θάλασσας, ο χώρος και ο τόπος*. Χρησιμοποιώντας μία ανάλυση G.I.S. με έμφαση στις *"διαδρομές ελάχιστου κόστους"* ήταν δυνατό να μοντελοποιηθεί το φυσιολογικό/σωματικό κόστος του ταξιδιού από τους τόπους ανθρώπινης δράσης προς την ακτή, καθορίζοντας έτσι τη χωρική σχέση των τόπων αλληλεπίδρασης του ανθρώπου με την ακτή (*coastality*). Η γεωγραφική εγγύτητα προς την ακτή αξιοποιήθηκε για να προσδιοριστούν γεωγραφικές ή χρονολογικές διακυμάνσεις στη χωρική σχέση μεταξύ των τόπων ανθρώπινης δράσης και της θάλασσας, και να διαπιστωθεί κατά πόσο αυτές οι διακυμάνσεις σχετίζονταν με τις ευρύτερες εξελίξεις στο Αιγιακό χώρο. Διαπιστώθηκε ότι υπήρχαν περίοδοι συχνότερης αλληλεπίδρασης του ανθρώπου και της θάλασσας (που καλύπτονται λεπτομερέστερα παρακάτω), καθώς και συγκεκριμένες περιοχές με συχνότερη αλληλεπίδραση, όπως για παράδειγμα οι ΠΚ Ι Κυκλάδες, η ΠΜ ΙΙΙ Κρήτη και οι ΜΚ Κυκλάδες. Επιπλέον επισημάνθηκε ο κεντρικός ρόλος των δικτύων επαφών στην ανάπτυξη των σχέσεων αλληλεπίδρασης ανθρώπου-θάλασσας, ενώ από γεωγραφική άποψη, κατέστη σαφές ότι η αλληλεπίδραση του ανθρώπου και της θάλασσας αποτελούσε βασική προϋπόθεση για το σχηματισμό θαλασσογραφιών, αλλά ο σχηματισμός θαλασσογραφιών δεν ήταν πάντα αναπόφευκτο αποτέλεσμα αυτής της αλληλεπίδρασης.

Σκοπός του *Κεφαλαίου 3: Καταναλώνοντας θαλασσογραφίες*, ήταν να προσδιοριστεί η έκταση της κατανάλωσης θαλασσινών τροφών στην περιοχή μελέτης, εστιάζοντας σε μια *chaîne opératoire* ενσώματων πρακτικών. Οι πρακτικές αυτές περιλάμβαναν την απόκτηση (αλιεία και συλλογή), την επεξεργασία (αποθήκευση και μαγείρεμα), αλλά και την κατανάλωση (οικιακά, λατρευτικά ή ταφικά συγκείμενα) των θαλασσινών τροφών. Το κεφάλαιο παρείχε μια επισκόπηση των ταφονομικών προβληματισμών σχετικά με τα δεδομένα μελέτης της θαλάσσιας πανίδας και εξήχθη το συμπέρασμα ότι τόσο πολιτιστικές, όσο και φυσικές διαδικασίες, έπαιξαν μεγάλο ρόλο στη διαμόρφωση των δεδομένων που είναι σήμερα διαθέσιμα. Κεντρικό ρόλο, ωστόσο, διαδραμάτισε η έλλειψη κατάλληλων μεθοδολογικών πρακτικών και πρακτικών ανάκτησης στην αρχαιολογική ανασκαφή, η οποία προστέθηκε στην έλλειψη ακαδημαϊκής εστίασης στη δημοσίευση των δεδομένων της θαλάσσιας πανίδας, μία κατάσταση που άρχισε να διορθώνεται τα τελευταία χρόνια. Τα δεδομένα αναλύσεων σταθερών ισοτόπων αξιοποιήθηκαν επίσης για την απάντηση των ερωτημάτων που τέθηκαν στο κεφάλαιο, ωστόσο μέχρι την ευρύτερη εφαρμογή τους στην αρχαιολογική έρευνα και

τη συγκέντρωση μιας πιο εκτεταμένης βάσης δεδομένων για σύγκριση, η χρησιμότητά τους μετριάζεται. Επιπλέον, η αβεβαιότητα της ταυτοποίησης των θαλάσσιων πρωτεϊνών στα σταθερά ισοτοπικά δεδομένα, δυσκόλεψε περαιτέρω την αξιοποίηση των αποτελεσμάτων αυτών των αναλύσεων. Η κατανάλωση θαλασσινών ήταν πιο εκτεταμένη στην Κρήτη, καθώς και σε σχετικά λίγες τοποθεσίες εκτός Κρήτης. Υπολείμματα θαλασσινών τροφών βρέθηκαν σε διάφορα συγκείμενα στην Κρήτη, όπως σε οικιακούς χώρους, σε αστικά και εξωαστικά ιερά, καθώς και σε νεκροταφεία. Σε κανένα σημείο, ωστόσο, δεν φαίνεται ότι τα θαλασσινά ήταν κάτι περισσότερο από συμπλήρωμα της τοπικής διατροφής.

Στο *Κεφάλαιο 4: Θαλάσσιες κατασκευές,* παρουσιάστηκαν τα στοιχεία για τη χρήση υλικού από θαλάσσια ζώα (κυρίως όστρακα θαλάσσιων μαλακίων) που χρησιμοποιήθηκε σε ένα ευρύ φάσμα πρακτικών. Αυτές περιελάμβαναν την παραγωγή βαφής murex, την παραγωγή αντικειμένων υλικού πολιτισμού από θαλάσσια όστρακα, τη χρηστική λειτουργία των αντικειμένων από θαλάσσια όστρακα, τη χρήση αντικειμένων από θαλάσσια όστρακα σε λατρευτικές πρακτικές και, τέλος, τη χρήση θαλάσσιων οστράκων ως διακοσμητικά στοιχεία του σώματος. Τα αντικείμενα από θαλάσσια όστρακα είχαν ευρεία χρησιμότητα στο προϊστορικό Αιγαίο, αν και χρονολογικά τείνουν να επικεντρώνονται στην περίοδο ΤΝ–ΠΕΧ ΙΙΙ, ενώ γίνονται σπανιότερα από την ΜΕΧ και έπειτα. Αυτό ισχύει με μόνες εξαιρέσεις την αυξανόμενη παραγωγή βαφής murex που είναι εμφανής στην Κρήτη, ειδικότερα, αλλά και στο ευρύτερο Αιγαίο στη διάρκεια της μετάβασης ΜΕΧ–ΥΕΧ, αλλά και τη χρήση οστράκων τρίτωνα σε λατρευτικούς χώρους στην Κρήτη από τη ΜΕΧ και μετά.

Στο *Κεφάλαιο 5: Έμψυχες θαλασσογραφίες*, διαπιστώθηκε ότι διαφορετικές πτυχές της θάλασσας οδήγησαν στη διαμόρφωση διαφορετικών εικονογραφικών αποτυπώσεων των θαλασσογραφιών στο Αιγαίο. Η ναυτοσύνη ήταν από τα πρώτα εικονογραφικά θέματα που αναπαρίστανται σχετικά με τη θάλασσα και είχε ιδιαίτερη αποδοχή σε περιόδους όπου υπήρχε κάποια μορφή έντασης ή σύγκρουσης στην αλληλεπίδραση των δικτύων επαφών. Παραδείγματα περιλαμβάνουν την αναπαράσταση σκαφών στις Κυκλάδες της ΤΝ και της ΠΚ ΙΙ, αλλά και στη ΜΕ περιόδο στον Σαρωνικό Κόλπο. Η σημασία της ναυσιπλοΐας στην ΠΜ Κρήτη, ωστόσο, αναπαρίσταται μέσω της χρήσης μοντέλων σκαφών παρά μέσω της ναυτικής εικονογραφίας, αναδεικνύοντας διαφορετικές προσεγγίσεις στην έκφραση της αλληλεπίδρασης ανθρώπου-θάλασσας. Το ενδιαφέρον για τα θαλάσσια ζώα είναι αισθητό από τα μέσα της ΠΕΧ και έπειτα, και υποστηρίχθηκε ότι αυτά τα μοτίβα χρησίμευαν ως μετα-αναπαραστάσεις της θάλασσας. Η συνεχής αλληλεπίδραση με τη θάλασσα, τόσο σε φυσικό όσο και σε εικονογραφικό επίπεδο, οδήγησε τελικά στην ενσωμάτωση των θαλάσσιων θεμάτων σε μια αρχαιολογικά ορατή σύνταξη λατρευτικών ειδών και πρακτικών στην Κρήτη, η οποία αρχίζει κατά την Παλαιοανακτορική περίοδο και επιταχύνεται σε ένταση κατά τη Νεοανακτορική περίοδο. Από τα στοιχεία που παρουσιάζονται στην ανάλυση, είναι σαφές ότι το ενδιαφέρον των Μινωιτών για τη θάλασσα ήταν έντονο και πριν από την εμφάνιση της κεραμικής ΥΜ ΙΒ Θαλάσσιου ρυθμού.

Από τη μελέτη αυτή προκύπτει σαφώς ότι οι θαλασσογραφίες δεν είναι αναπόφευκτο αποτέλεσμα της αλληλεπίδρασης ανθρώπου-θάλασσας. Υπάρχουν μια σειρά από παραδείγματα που αναδεικνύονται στην παρούσα μελέτη όπου οι κοινότητες ενώ είχαν μια μακροχρόνια δέσμευση με τη θάλασσα, μέσω της αλληλεπίδρασης του ανθρώπου με τη θάλασσα, της κατανάλωσης θαλασσινών τροφών και της χρήσης θαλάσσιων αντικειμένων στον υλικό πολιτισμό, ωστόσο δεν αναπτύχθηκαν σε ενσωματωμένα θαλασσινά τοπία διάδρασης (*seascapes*). Στο Κεφάλαιο 3 υποστηρίχθηκε ότι οι μεθοδολογικές και ακαδημαϊκές ελλείψεις στην έρευνα των δεδομένων της θαλάσσιας πανίδας ευθύνονται για τις σημερινές απαισιόδοξες επισκοπήσεις της έκτασης της κατανάλωσης θαλασσινών τροφίμων στην προϊστορία του Αιγαίου. Στην Κρήτη υπάρχουν ενδείξεις για την κατανάλωση θαλασσινών τροφών, παράλληλα με την ενσωμάτωση του θαλάσσιου κόσμου στη λατρευτική πρακτική, αλλά και στην ανάπτυξη ατομικών ταυτοτήτων, ωστόσο είναι σαφές ότι η κατανάλωση θαλασσινών τροφών δεν οδηγεί πάντα άμεσα στη διαμόρφωση θαλάσσιων τοπίων διάδρασης. Παραδείγματα περιλαμβάνουν οικισμούς στην ηπειρωτική Ελλάδα, όπως η Λέρνα, η Ασίνη και τα Πευκάκια. Αν η ουσιαστική ενσωμάτωση της μελέτης της θαλάσσιας πανίδας στις ανασκαφικές μεθόδους, όπως αυτή που παρατηρήθηκε στην Κρήτη, υιοθετηθεί και για τις ανασκαφές στην ηπειρωτική Ελλάδα, είναι πιθανό να βρεθούν περισσότερα στοιχεία για την κατανάλωση θαλασσινών τροφών.

Η εμφάνιση εικόνων που σχετίζονται με τη θάλασσα και υποδηλώνουν μια πιο εντατική ενσωμάτωση των θαλασσογραφιών στις τοπικές κοινότητες, εμφανίζεται μόνο όταν υπάρχει κάποια μορφή τριβής ή ανταγωνισμού στα δίκτυα ανταλλαγής, είτε αυτή η τριβή αφορά διαφορετικά ανταγωνιστικά δίκτυα, είτε δημιουργείται λόγω εσωτερικού ανταγωνισμού εντός μιας κοινωνίας. Αυτή η ενσωμάτωση εμφανίζεται σε δύο μορφές, η μια ως έμφαση της ναυτοσύνης και η άλλη ως έμφαση της χρήσης του θαλάσσιου φυσικού κόσμου. Αναλυτικότερα, η έμφαση της ναυτοσύνης είναι εμφανής στις ΠΚ ΙΙ Κυκλάδες, αλλά και στη ΜΕ ΙΙ Κολώνα, όπου στο πρώτο παράδειγμα διάφοροι μεγάλοι κυκλαδικοί οικισμοί (Δασκαλιό, Βαθύ, Χαλανδριάνη) έπαιζαν κεντρικό ρόλο στο δίκτυο του *"διεθνούς πνεύματος"*. Ο ανταγωνισμός μεταξύ τους για ανάδειξη είναι πιθανό να οδήγησε στην ανάγκη να εκφραστεί μια σύνδεση με τη ναυτιλία. Στο δεύτερο παράδειγμα, η Κολώνα φαίνεται να ήταν ένας εξαιρετικός οικισμός στην περιοχή και ο μεγαλύτερος πληθυσμός της, αλλά και η νησιωτική της θέση, οδήγησαν σε μια τοπική επένδυση στη ναυτιλία, η οποία είναι πιθανό να οδήγησε στον κεντρικό της ρόλο στη διανομή των τοπικών κεραμικών, καθώς και στην πιθανή στρατιωτική της παρέμβαση στις περιοχές με τις οποίες γειτνίαζε. Το γεγονός ότι οι ναυτικές εικόνες συνοδεύονται από ένα στρατιωτικό θέμα και κοσμούν αγγεία αποθήκευσης τροφίμων υποδηλώνει μια βαθιά σχέση μεταξύ της διατροφής, της θάλασσας και της εξουσίας.

Για άλλες περιοχές, η εικονογραφική προβολή των θαλασσογραφιών επικεντρώνεται στα θαλάσσια ζώα. Αυτή η διαφοροποίηση είναι ιδιαίτερα ορατή από τη σημαντική μετατόπιση του ενδιαφέροντος από τη ναυτοσύνη, στις ΠΚ ΙΙΑ

Κυκλάδες, προς την αναπαράσταση θαλάσσιων ζώων όπως τα ψάρια και τα δελφίνια, στη ΜΚ περίοδο. Προτείνεται εδώ ότι η μετατόπιση αυτή συνδέεται με μια διαφορετική αντίληψη των θαλασσογραφιών από ό,τι στα παραδείγματα που ασχολούνται με τη ναυτιλία. Σε αυτά τα παραδείγματα, τα θαλάσσια ζώα αποτελούν μεθερμηνείες της έννοιας της θάλασσας και χρησιμεύουν στην έκφραση ανταγωνιστικών ταυτοτήτων μεταξύ διαφορετικών ομάδων, ορισμένες από τις οποίες μπορεί να είχαν σχέση με τη θάλασσα. Ειδικά αυτή η μορφή έκφρασης, ωστόσο, οδηγεί την Κρήτη στην ενσωμάτωση του φυσικού θαλάσσιου κόσμου στην τέλεση της λατρείας, υποδηλώνοντας έναν βαθύτερο συμβολισμό μεταξύ της αναπαράστασης των θαλάσσιων ζώων και της θρησκείας. Δεν μπορούμε να παραλείψουμε, ωστόσο, την πιθανότητα ότι αυτό μπορεί να συνέβαινε και στις ΜΚ Κυκλάδες, όπου, αν και μας εμποδίζει η έλλειψη αναγνωρισμένων ιερών, η επαναλαμβανόμενη αναπαράσταση θαλάσσιων ζώων στην κεραμική μπορεί να συνδέει τα αντικείμενα αυτά με την τέλεση κάποιας μορφής λατρείας με επίκεντρο τη θάλασσα. Το γεγονός ότι τα ιπτάμενα ψάρια και οι ψαράδες με τα πλούσια αλιεύματα ψαριών επιλέγονται για να διακοσμήσουν ελίτ, ενδεχομένως, λατρευτικούς χώρους στις ΥΚ Ι Κυκλάδες μπορεί επομένως να μην είναι αποτέλεσμα της εισαγωγής μιας κρητικής συμβολικής σύνταξης, αλλά η αρχαιολογικά ορατή έκφραση της σχέσης μεταξύ θάλασσας και θρησκείας στο αρχιπέλαγος.

Καθ' όλη τη διάρκεια της μελέτης, έγινε σαφές ότι οι ταφικές πρακτικές αποτελούσαν έναν από τους βασικούς τομείς έκφρασης των θαλασσογραφιών. Αυτή η σύνδεση γινόταν φανερή είτε με τη μορφή αντικειμένων του υλικού πολιτισμού που είχαν κατασκευαστεί από θαλάσσια όστρακα, είτε μέσω της απεικόνισης κατανάλωσης θαλασσινών τροφών σε ταφικές παραστάσεις, ή τέλος, μέσω της απόθεσης κτερισμάτων που έφεραν εικονογραφία εστιασμένη στο θαλάσσιο τοπίο. Στο Κεφάλαιο 2, διαπιστώθηκε ότι υπάρχει μια συνολική έλλειψη συσχέτισης της αλληλεπίδρασης του ανθρώπου και της θάλασσας, ειδικά σε σχέση με την επιλογή των τόπων ταφής και της θάλασσας. Παρόλα αυτά, η Νεοανακτορική Μινωική Κρήτη αναδείχθηκε ως μια περιοχή όπου φαίνεται να υπάρχει κάποια σχέση μεταξύ των παράκτιων χώρων και της εναπόθεσης των νεκρών, ειδικά μέσα από τη χρήση των ταφικών πίθων σε παράκτιους ταφικούς χώρους στην ανατολική Κρήτη. Η σχέση αυτή ενισχύεται ακόμη περισσότερο αν εκτελούνταν και θαλάσσιες ταφές, μετατρέποντας έτσι τη θάλασσα σε τόπο ταφής. Αυτό δυνητικά συσχετίζεται και με τους οικισμούς των Κυκλάδων, όπου προτάθηκε στο Κεφάλαιο 2, ότι η θαλάσσια ταφή μπορεί να αποτελεί λύση στην φαινομενική έλλειψη ταφών των ΜΚ και ΥΚ περίοδων, ειδικά σε σύγκριση με τις Κυκλάδες της ΠΚ περιόδου. Στο Κεφάλαιο 3, κατέστη σαφές ότι τα θαλασσινά ήταν ένα κοινό είδος τροφής που καταναλωνόταν σε ταφικές τελετές, ιδίως σε παράκτιες περιοχές. Η κατανάλωση θαλασσινών σε αυτές τις ιδιαίτερα φορτισμένες εκδηλώσεις δίνει ένα βαθύτερο νόημα στην επιλογή χρήσης τους στο συγκεκριμένο πλαίσιο, και μπορεί να έπαιζε κεντρικό ρόλο στην ταφική πρακτική, όπως για παράδειγμα υποδεικνύει η επανειλημμένη ανάκτηση θαλάσσιων οστράκων από λάκκους μαζί με άλλα κτερίσματα στην ΠΕΧ. Το Κεφάλαιο 4 επιβεβαίωσε ότι τα θαλάσσια όστρακα έπαιζαν μεγαλύτερο ρόλο στην ταφική επιτέλεση

ως υλικός πολιτισμός, παρά ως πηγή τροφής. Τα δοχεία από θαλάσσια όστρακα που περιείχαν έγχρωμες χρωστικές ουσίες αποτελούσαν σημαντικό μέρος μιας σειράς αντικειμένων που συνδέονταν με ορισμένα στοιχεία της κοινωνίας της ΠΚ περιόδου και, όπως υποστηρίχθηκε στο Κεφάλαιο 2, η συγκεκριμένη επιλογή για τη χρήση θαλάσσιων οστράκων μπορεί να μην ήταν μόνο κοσμετολογική ή αισθητική, με το λευκό θαλάσσιο όστρακο να έρχεται σε αντίθεση με τις έγχρωμες χρωστικές ουσίες, αλλά και έκφραση μιας ταυτότητας που συνδεόταν με τη ναυτοσύνη. Δεν αποτελεί έκπληξη το γεγονός ότι στη Χαλανδριανή της Σύρου, όπου βρέθηκαν αρκετά δοχεία με χρωστικές από θαλάσσια όστρακα, βρέθηκε και ναυτική εικονογραφία σε σκεύη τηγανόσχημων που είχαν εναποτεθεί μαζί με τους νεκρούς. Αν και υπάρχουν στοιχεία κοινών θεμάτων που αναπαράγονται σε όλες τις Κυκλάδες σχετικά με αυτήν την ταφική πρακτική, είναι η κοινότητα της Χαλανδριανής που παρέχει τις καλύτερες αποδείξεις για την ενσώματη και ενσωματωμένη ένταξη των θαλασσογραφιών στην τοπική ταυτότητα, στη δυναμική της εξουσίας και ενδεχομένως στις εσχατολογικές αντιλήψεις αυτών των κοινοτήτων.

Για την Κρήτη, τα στοιχεία είναι λιγότερο σαφή. Η χρήση οστράκων τρίτωνα σε τελετουργικές πρακτικές ήδη από την ΠΜ Ι μπορεί να αποτελεί ένδειξη του δυνητικά σημαντικού ρόλου που μπορεί να έπαιζαν τα θαλάσσια όστρακα στην εκτέλεση των τελετουργικών πρακτικών, αν βέβαια το όστρακο τρίτωνα είχε την ίδια χρήση στην ΠΜ Κρήτη, όπως η χρήση που παρατηρήθηκε αργότερα στην ΜΜ–ΥΜ Κρήτη. Η συγκέντρωση ταφών σε πίθους στις ακτές γύρω από την Παχεία Άμμο και τα Γουρνιά στη ΜΜ μπορεί να υποδηλώνει κάποια μορφή προτίμησης για παράκτια ταφή, η οποία εάν συνοδεύεται επίσης από την πρακτική της θαλάσσιας ταφής, μπορεί να αντικατοπτρίζει μια βαθύτερη ενσωμάτωση της θάλασσας σε εσχατολογικές πεποιθήσεις και ταφικές πρακτικές στην Κρήτη. Αυτές οι πρακτικές μπορεί τελικά να εκδηλώθηκαν με την ενσωμάτωση θαλάσσιων μοτίβων σε δοχεία ταφής, όπως φαίνεται στην ΥΜ περίοδο, καθώς και στην ενσωμάτωση θαλάσσιων αντικειμένων σε πρακτικές λατρείας.

Στη διάρκεια της έρευνας, αποδείχθηκε δύσκολο να εξακριβωθεί ο ρόλος που μπορεί να έπαιζαν οι θαλασσογραφίες στη ζωή των μη αριστοκρατικών/ελίτ κοινωνικών ομάδων και ατόμων. Στην καλύτερη απόδειξη της ενσωμάτωσης των θαλασσογραφιών στην πολιτιστική έκφραση, τη Νεοανακτορική Κρήτη, υπάρχει η σαφής εντύπωση ότι η έκφραση των θαλασσογραφιών είναι διαμορφωμένη από τις ανώτερες κοινωνικές τάξεις. Αυτό υποστηρίζεται και από την πληθώρα θαλάσσιων και ναυτικών σκηνών που συναντάμε σε σφραγίδες των ΜΜ και ΥΜ περιόδων, οι οποίες πιθανώς αποτελούσαν προσωπικά διακριτικά για αυτές τις κοινωνικές τάξεις, ενώ θαλάσσια θέματα αποτελούσαν αντικείμενα τοιχογραφιών που συνδέονται με την αρχιτεκτονική χώρων κίνησης αυτών των αριστοκρατικών ομάδων. Η εκτέλεση των λατρευτικών πρακτικών πιθανώς μονοπωλούνταν από τις αριστοκρατικές ομάδες και επομένως η χρήση μιας σειράς αντικειμένων του υλικού πολιτισμού που συνδεόνταν θάλασσα είναι πιθανό να χρησιμοποιήθηκαν κυρίως από λίγα άτομα με υψηλή κοινωνική θέση που

παρευρίσκονταν σε αυτές τις τελετουργίες. Ωστόσο, ενώ είναι σαφές ότι η αρχαιολογική ορατότητα των θαλασσογραφιών συσχετίζεται κατά κάποιο τρόπο με τις ελίτ, αυτό δεν σημαίνει ότι οι κάτοικοι των παραλίων που δεν ανήκαν σε αυτές τις ανώτερες κοινωνικές ομάδες δεν είχαν τη δική τους σειρά πεποιθήσεων οι οποίες προέρχονταν από τη διάδρασή τους με τις θαλασσογραφίες, ή πως δεν είχαν βαθύτερη νοητική διάδραση με τη θάλασσα. Το ζήτημα είναι η αρχαιολογική ορατότητα αυτής της διάδρασης, εφόσον οι υλικές αποδείξεις για την ύπαρξη αλληλεπίδρασης με τις θαλασσογραφίες σε μη ελίτ συγκείμενα βασίζονται αποκλειστικά σε σκόρπια αγκίστρια ψαρέματος και σε ενδείξεις κατανάλωσης θαλασσινών τροφών εντός οικιστικών χώρων. Δυστυχώς, μια "*εικονογραφία*" της θάλασσας δεν είναι αρχαιολογικά ανιχνεύσιμη σε μη αριστοκρατικά/ελίτ συγκείμενα.

Για να συνοψίσουμε, σε αυτήν τη μελέτη παρουσιάστηκε μια σειρά αλληλεπιδράσεων ανθρώπου-θάλασσας, μερικές από τις οποίες οδήγησαν στο σχηματισμό θαλασσογραφιών. Ως αποτέλεσμα της εργασίας που πραγματοποιήθηκε σε αυτήν τη μελέτη, κατέστη δυνατή η επεξεργασία των διαφόρων βαθμών αλληλεπίδρασης ανθρώπου-θάλασσας. Ο όρος *seascape engagement*, ή εμπλοκή με τις θαλασσογραφίες, αποτελεί μια έκφραση του βαθμού έντασης αυτής της αλληλεπίδρασης και είναι ο προτεινόμενος όρος για αυτές τις διαφορετικές σχέσεις (Εικ. 6.1).

Τρεις μορφές εμπλοκής με τις θαλασσογραφίες είναι εμφανείς σε όλο το Αιγαίο κατά την προϊστορία. Η πρώτη, αφορά τους τόπους αλληλεπίδρασης του ανθρώπου και της θάλασσας (*coastality*), και εκφράζει απλώς τη χωρική σχέση μεταξύ των χώρων δράσης των ανθρώπων και της θάλασσας. Σε αυτό το επίπεδο εμπλοκής, η θάλασσα είναι μια ζώνη επαφής με δίκτυα επικοινωνίας, και γίνεται εμφανής μέσω του υλικού πολιτισμού και της στενότερης εγγύτητας με την ακτογραμμή. Στο δεύτερο επίπεδο εμπλοκής, την ενσωμάτωση (*embedment*), η θάλασσα γίνεται κεντρικό σκηνικό για την καθημερινή ζωή των κατοίκων των παράκτιων κοινοτήτων. Υπάρχουν ενδείξεις εξωτερικής επαφής μέσω δικτύων με επίκεντρο τη θάλασσα, καθώς και εκμετάλλευσης ποικίλων θαλάσσιων πόρων. Αυτό περιλαμβάνει την κατανάλωση θαλασσινών τροφών και την αξιοποίηση των υπολειμμάτων θαλάσσιων ζώων στον υλικό πολιτισμό. Το τελευταίο και πιο έντονο επίπεδο εμπλοκής με τις θαλασσογαρφίες είναι η περιπλοκή, η συνύφανση με τη θάλασσα (*entanglement*). Σε αυτό το επίπεδο, όλες οι προαναφερθείσες μορφές αλληλεπίδρασης είναι παρούσες, ενώ τα θέματα που σχετίζονται με τη θάλασσα αρχίζουν να διεισδύουν μέσα από την εικονογραφική αναπαράσταση στον υλικό πολιτισμό, γεγονός που αποτελεί αξιόπιστο δείκτη της σημασίας της θάλασσας για την κοινωνική δυναμική, τη νοητική επεξεργασία των σχετικών ερεθισμάτων, αλλά και για την τοπική ταυτότητα.

Bibliography

Note to reader: Modern Greek text for the titles of articles/books have been left untranslated, while Greek author names, places of publication and publishers have been latinised. Where a Greek journal does not have a commonly accepted acronym, the full Greek name is used. The abbreviations for recurring books and journals can be found below in Book Abbreviations.

> Abbreviations according to AJA: (https://www.ajaonline.org/submissions/journals-series, 22/10/2021)

Book Abbreviations

AEMTH	*Αρχαιολογικό 'Εργο στη Μακεδονία και στη Θράκη* (Archaeological work in Macedonia and Thrace).
Attica	N. Papadimitriou, J.C. Wright, S. Fachard, N. Polychronakou-Sgouritsa & E. Andrikou (eds.) 2020. *Athens and Attica in Prehistory: Proceedings of the International Conference, Athens, 27–31 May 2015*, Oxford, Archaeopress.
Autochthon	A. Dakouri-Hild & S. Sherratt (eds.) 2005. *AUTOCHTHON Papers presented to O.T.P.K. Dickinson on the occasion of his retirement*, Oxford, BAR (BAR International Series 1432).
BAE	*Βιβλιοθήκη της εν Αθήναις Αρχαιολογικής Εταιρείας* (Library of the Archaeological Society of Athens).
Beyond	M. Marthari, C. Renfrew & M.J. Boyd (eds.), *Beyond the Cyclades: Early Cycladic Sculpture in Context from Mainland Greece, the North and East Aegean*, Oxford, Oxbow Books,
Camcom	C.W. Shelmerdine (ed.) 2008. *The Cambridge companion to the Aegean Bronze Age*, Cambridge, Cambridge University Press.
CupsFull	W. Gauß, M.L. Lindblom, A.K. Smith & J.C. Wright 2011. *Our Cups Are Full: Pottery and Society in the Aegean Bronze Age. Papers Presented to Jeremy B. Rutter on the Occasion of his 65th Birthday*, Oxford, Archaeopress.
DAF2	E. Alram-Stern (ed.) 2004. *Die Ägäische Frühzeit 2. Serie: Forschungsbericht 1975–2002. Volume 2.2 Die Frühbronzezeit in Griechenland, mit Ausnahme von Kreta, Veröffentlichungen der Mykenischen Kommission 21*, Vienna, Verlag der Österreichischen Akademie der Wissenschaften.
Horizon	N. Brodie, J. Doole, G. Gavalas, & C. Renfrew (eds.) 2008. *Horizon. Ορίζων: A colloquium on the prehistory of the Cyclades*, Cambridge, McDonald Institute for Archaeological Research.

Human Face	Z. Tsirtsoni (ed.) 2016. *The Human Face of Radiocarbon: Reassessing Chronology in prehistoric Greece and Bulgaria, 5000–3000 cal BC*, Lyon, Maison de l'Orient et de la Méditerranée (Travaux de la Maison de l'Orient et de la Méditerranée 69).
JMar	*Journal of Marine Archaeology*.
Kentro	*Kentro*: The Newsletter of the INSTAP Study Center for East Crete.
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Oxhand	E.H. Cline. 2010. *The Oxford handbook of the Aegean Bronze Age*, Oxford Oxford University Press.
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Potnia	R. Laffineur & R. Hägg (eds.) 2001. *Potnia, Deities and Religion in the Aegean Bronze Age, Proceedings of the 8th International Aegean Conference Göteborg, Göteborg University, 12–15 April 2000*, Liège, Universite de Liege, Histoire de l'art et archéologie de la Grèce antique (Aegaeum 22).
PreCycl	J.A. MacGillivray & R.L.N. Barber (eds.) 1984. *The Prehistoric Cyclades: Contributions to a Workshop on Cycladic Chronology*, Edinburgh, Edinburgh University Press.
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Appendix 1. Catalogue of Sites

This appendix presents basic information for the range of settlements and cemeteries catalogued in this study. The numbers ('S' for 'settlement' and 'C' for 'cemetery') remain static throughout the study. 'Type' refers to the form of the site, i.e. settlement, villa, workshop, intramural or extramural cemetery. 'Region' details the geographical location of the site. This is accompanied by either 'Nearest village' for settlements on the mainland and Crete, or 'Island' for sites located on smaller islands. 'Fieldwork' denotes the type of research undertaken at the site, which can range from rescue excavation, research excavation and survey. 'Coastality value' refers to the cost-path values generated for Chapter 2, which can also be found in Appendix 2A. The list of references are in themselves not exhaustive, though should cover most of the recent bibliography. References listed as "ID" followed by a number refer to the catalogue system of the Chronique.[906] 'Chronology' is denoted through general (e.g. 'EB') rather than specific (e.g. 'EH') chronologoical terminology, though in the description, region speicifc terminology can be used. Bracketed chronological periods represent the possibility that there is activity, though the evidence is not conclusive. For the sake of brevity, the catalogue descriptions are brief, though more information can be found in the associated references. Finally, 'Relevant finds' denotes the presence of catalogued finds from other appendices associated with that site, such as the presence of marine faunal remains (Chapter 3) or maritime iconography (Chapter 5). The format that follows begins with settlements, then extraurban shrines before detailing cemeteries.

[906] https://chronique.efa.gr/?kroute=homepage [Accessed 26.10.2021]

Settlements

S1. *Agia Anna (Αγία Άννα)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 567.

References: Karantzali 2008, 242.

Chronology: Early Bronze IIA.

Description: Scanty architectural deposits linked with EC II pottery. Settlement is located in a coastal position

S2. *Agia Irini (Αγία Ειρήνη)*

Type: Settlement. Region: Cyclades. Island: Kea. Fieldwork: Research excavation. Coastality value: 786.

References: Caskey 1962, 263–283; Caskey 1964, 314–335; Caskey 1966, 363–373; Caskey 1972, 357–401; Coleman *et al.* 1973, 284–300; Abramovitz 1980, 57–85; Davis 1986; Overbeck 1989; Wilson 1999.

Chronology: Early Bronze I–IIA; Middle Bronze II–Late Bronze I.

Description: Important north Cycladic settlement with extensive architectural remains and well–established ceramic sequence. Seemingly abandoned in EB IIB–MB I, reoccupied in mid MBA. Occupies a coastal promontory in a secluded bay in north Kea.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian marine material culture*); Appendix 4: DA (*Special use of marine material culture*); Appendix 4:EA (*Body ornamentation*); Appendix 5A: **5**.**67**, **5**.**163**, **5**.**170**.

S3. *Agia Marina–Spetses (Αγία Μαρίνα–Σπέτσες)*

Type: Settlement. Region: Argolid. Island: Spetses. Fieldwork: Rescue excavation. Coastality value: 895.

References: *ArchDelt* 26 (1971): B1, 84.

Chronology: Early Bronze IIA–B (Early Bronze III).

Description: Low promontory on the east coast of the island. The buildings excavated were dated to EH II. Some material may extend into EH III. Present were three EH ditches, a small wall and a large pit.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S4. *Agia Marina–Varkiza (Αγία Μαρίνα Βάρκιζα)*

Type: Settlement. Region: Attica. Nearest village: Agia Marina. Fieldwork: Survey. Coastality value: 186.

References: Sampson 1976, 170–180.

Chronology: Final Neolithic–Early Bronze I.

Description: Building remains on a narrow peninsula likely to have been larger than currently. Walls from buildings were noted and the ceramics correlate with EC I/EH I wares.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S5. *Agia Pelagia (Αγία Πελαγία)*

Type: Settlement. Region: Euboia. Nearest village: Zarmpouteika. Fieldwork: Survey. Coastality value: 484.

References: Tankosić 2011, 103; Cullen *et al.* 2013, 119.

Chronology: Final Neolithic; Early Bronze IIA.

Description: Coastal promontory with chipped stone and building remains dated to FN and EH IIA.

S6*. Agia Photia (Αγία Φωτιά)*

Type: Settlement/Workshop. Region: Crete. Nearest village: Agia Photia. Fieldwork: Excavation. Coastality value: 677.

References: Myers *et al*. 1992, 66–68.

Chronology: Middle Bronze I–II.

Description: Site immediately overlooks the coast and occupies a small hill next to the EM I cemetery (Appendix 5B, Fig. 12). A unique fortified rectangular building known from MM I. Unknown function. In MM II, two circular structures were added. They have been interpreted as *tholoi*, though they are too late in date and do not contain the material expected from a tomb. They have been interpreted as a granary.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S7*. Agiassos (Αγιασσός)*

Type: Probable settlement. Region: Cyclades. Island: Naxos. Fieldwork: Survey. Coastality value: 1562

References: *ArchDelt* 62 (2007): B2, 1144.

Chronology: Early Bronze IIA.

Description: Survey in the area revealed building remains and ceramic material dated to EC IIA.

S8*. Agios Andreas (Άγιος Ανδρέας)*

Type: Probable settlement. Region: Crete. Nearest village: Agios Nikolaos. Fieldwork: Survey. Coastality value: 1843

References: Nowicki 2014, 182.

Chronology: Final Neolithic–Early Bronze I.

Description: Survey revealed stone tumbles that may have been destroyed buildings along with FN II pottery, which indicates some occupation of the area in the FN II (EB I). Some evidence for earlier FN I (FN) occupation also.

S9*. Agios Antonios Crete (Άγιος Αντώνιος)*

Type: Probable settlement. Region: Crete. Nearest village: Tholos. Fieldwork: Survey. Coastality value: 1188.

References: Boyd-Hawes 1904, 22; Soles 1991, 75–76; Haggis, 2005, 95–96.

Chronology: Middle Bronze II–Late Bronze I.

Description: Badly eroded MM–LM settlement found by survey.

S10*. Agios Antonios Potou (Άγιος Αντώνιος Ποτού)*

Type: Settlement. Region: North Aegean islands. Nearest village: Thasos. Fieldwork: Rescue excavation. Coastality value: 394.

References: *ArchDelt* 26 (1971): B2, 415–416; *ArchDelt* 65 (2010): B2, 567–570; Koukouli–Chrysanthaki & Papadopoulos 2016, 339–358.

Chronology: Final Neolithic–Middle Bronze II.

Description: Small settlement with radiocarbon dated organic material to between 3927–3662 cal. BC.

S11. *Agios Ioannis (Άγιος Ιωάννης)*

Type: Settlement. Region: North Aegean islands. Island: Thasos. Fieldwork: Rescue excavation. Coastality value: 651.

References: Papadopoulos *et al.* 2001; Lespez & Papadopoulos 2008.

Chronology: Final Neolithic–Early Bronze I.

Description: Architectural remains of structures, hearths and ovens. Small settlement.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S12. *Agios Kosmas (Άγιος Κοσμάς)*

Type: Settlement. Region: Attica. Nearest village: Agios Kosmas. Fieldwork: Research excavation. Coastality value: 769.

References: Mylonas 1934, 258–279; Mylonas 1959; Maran 1998; Privitera 2013, 110–113.

Chronology: Early Bronze I–Early Bronze III. (Late Bronze Age).

Description: Excavation uncovered an EH settlement with four phases of occupation, two of which are relevant to this study (EH I–IIA + EH IIB–III) with further occupation in the Mycenaean period. The settlement is small, consisting of several structures occupying the modern headland. North and south are two large cemeteries (see **C16**).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*). Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*).

S13. *Agios Mamas (Άγιος Μάμας)*

Type: Settlement. Region: Macedonia. Nearest village: Olynthos. Fieldwork: Research excavation. Coastality value: 1442.

References: Heurtley & Radford 1927/8, 117–155; Heurtley 1939, 1–8; Aslanis 2007, 333–337; Aslanis 2010, 945–953; Hänsel & Aslanis 2010.

Chronology: Late Neolithic–Middle Bronze III

Description: Large *toumba* settlement. Excavation revealed evidence for structures dated to the Neolithic, EBA, MBA and later. Occupation throughout focused on the area of the *toumba*.

Relevant finds: Appendix 4:A (*Murex dye production*).

S14. *Agios Nikolaos Anavyssos (Άγιος Νικόλαος Ανάβυσσος)*

Type: Settlement. Region: Attica. Nearest village: Anavyssos. Fieldwork: Rescue excavation. Coastality value: 1472.

References: *ArchDelt* 51 (1996): B1, 65–66; Oikonomakou 2010, 238, 240, fig. 9; Kakavogianni & Douni 2010, 203.

Chronology: Middle Bronze I–III.

Description: Excavation revealed a MH settlement, including buildings with hearth remains, as well as matt–painted and minyan pottery and two *pithos* burials.

S15. *Agios Nikolaos Mylon (Άγιος Νικόλαος Μύλων)*

Type: Probable settlement. Region: Euboia. Nearest village: Mili. Fieldwork: Survey. Coastality value: 11064.

References: Tankosić & Mathioudaki 2011, 99–140.

Chronology: Middle Bronze I–III.

Description: Walls found on the surface. Over 70% of the pottery can be assigned to phases of the MH period. Recognition of an apsidal house strengthens the MH date.

S16. *Agios Penteleimon (Άγιος Παντελεήμων)*

Alternative name: Kaki Thalassa. Type: Settlement. Region: Attica. Nearest village: Paralia Kaki Thalassis. Fieldwork: Survey. Coastality value: 4520.

References: Hope Simpson & Dickinson 1979, 210; Nazou 2014, 347; Andrikou 2020b, 21.

Chronology: Early Bronze IIA.

Description: EH II pottery recovered from the area, Andrikou reports an EBA site at the location.

S17. *Akandia (Ακαντιά)*

Type: Settlement. Region: Dodecanese. Island: Rhodes. Fieldwork: Rescue excavation. Coastality value: 698.

References: *ArchDelt* 43 (1988): B2, 593–594; *ArchDelt* 44 (1989): B2, 474; *ArchDelt* 46 (1991): B2, 449; Dreliosi–Irakleidou 1999, 21–28; Marketou 2009, 77.

Chronology: Middle Bronze II–III.

Description: Little published about this site. Mentioned as a harbour settlement of the MBA.

S18. *Akri Rozos (Άκρη Ρόζος)*

Type: Settlement. Region: Euboia. Nearest village: Likorema. Fieldwork: Survey. Coastality value: 1301.

References: Tankosić 2011, 103

Chronology: Final Neolithic; Early Bronze IIA.

Description: FN and EH II ceramics found through survey around wall features.

S19. *Akrotiri (Ακρωτήρι)*

Type: Large settlement. Region: Cyclades. Island: Thera. Fieldwork: Research excavation. Coastality value: 1966.

References: Marinatos 1969, 147–192; Marinatos 1970, 156–204; Marinatos 1971, 181–225; Doumas 1974 , 119–213; Doumas 1976, 309–329.; Doumas 1983; Doumas 1985, 168–176; Palyvou 1986; Sotirakopoulou 1986, 297–312; Doumas 1987, 241–254; Sotirakopoulou 1990; Doumas 1990, 224–235; Doumas 1992, 176–188; Doumas 1993, 164–187; Doumas 1994, 155–166; Doumas 1995, 127–136; Doumas 1996, 247–257; Palyvou 2005; Doumas 2008;

Chronology: Late Neolithic–Late Bronze I.

Description: Remarkably well preserved, long–lived site on Thera, buried in volcanic ash, which sealed the settlement in LC IA. Extensive excavation has focused on the late MC and early LC periods. Earlier features are lesser-explored but accessed through small–scale sondages. Evidence of occupation begins in LN.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:C (*Storage and cooking of marine food*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 3:E (*Marine food waste remains from ritual or probable ritual contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EC (*Manuports and Miscellany*); Appendix 5A: **5**.**4**, **5**.**58**, **5**.**59**, **5**.**60**, **5**.**116**, **5**.**117**, **5**.**168**, **5**.**169**, **5**.**203**.

S20. *Alevriko (Αλευρικό)*

Type: Possible settlement. Region: Crete. Nearest village: Agios Nikolaos. Fieldwork: Rescue excavation. Coastality value: 1878.

References: *ArchDelt* 60 (2005): B2, 1051–1052.

Chronology: Middle Bronze III–Late Bronze I.

Description: MM and LM architectural remains in the area. Parts of at least three rooms were visible.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S21. *Alimos (Άλιμος)*

Type: Settlement. Region: Attica. Nearest village: Alimos. Fieldwork: Rescue excavation. Coastality value: 5251.

References: *ArchDelt* 56–59 (2001–2004): B1, 465–467.

Chronology: Early Bronze I–IIA.

Description: Trial trenches revealed EH II sherds and a strong retaining wall. An apsidal dugout house dated to EH I. Sections of walls and foundations of houses with straight and apsidal walls were noticed, as well as LBA structures enclosed by a wall.

S22. *Alyki–Artemis (Αλυκές Αρτέμιδας)*

Type: Settlement. Region: Attica. Nearest village: Alikes. Fieldwork: Rescue excavation. Coastality value: 639.

References: Kakavogianni 1985, 50; Vasilopoulou & Katsarou–Tzeveleki 2009, 221–236; Nazou 2014, 349; Andrikou 2020a, 5.

Chronology: Final Neolithic–Early Bronze I

Description: Small dispersed settlement remains. A building was excavated and EBA pottery has been recovered from a dispersed area around the remains.

S23. *Amarynthos Palaiokastri (Αμάρυνθος Παλαιόκαστρο)*

Type: Settlement. Region: Euboia. Nearest village: Galazia Nera. Fieldwork: Rescue excavation. Coastality value: 880.

References: *ArchDelt* 44 (1989): B1, 161; Fachard 2012, 309, no.54.

Chronology: Early Bronze II–III.

Description: Building remains associated with EH II and EH III ceramics.

S24. Amnisos–Palaiochora (Αμνισός Παλαιόχωρα)

Type: Settlement. Region: Crete. Nearest village: Karteros. Fieldwork: Rescue excavation. Coastality value: 846.

References: Marinatos 1936, 81–86; 1938, 130–138; *ArchDelt* 19 (1964): B3, 439; *ArchDelt* 23 (1968): B2, 402; Mandalaki 2013, 154–163.

Chronology: Early Bronze III–Late Bronze Age.

Description: Extensive settlement with a range of important buildings. The first organised settlement dates to the beginning of the MM and occupation continues until the end of the Mycenaean period.

S25. *Archanes (Αρχάνες)*

Type: Large settlement. Region: Crete. Nearest village: Archanes. Fieldwork: Rescue excavation. Coastality value: 33525.

References: Sakellarakis & Sakellaraki 1976, 342–399; 1977, 459–482; 1978, 309–322; 1979, 331–392; 1980, 354–401; 1981, 409–448; 1982, 467–530; 1983, 367–414; *ArchDelt* 56–59 (2001–2004): B5, 356–358.

Chronology: Middle Bronze III–Late Bronze Age

Description: Large settlement underneath the modern town. Evidence for a palace and a widely dispersed settlement accessed through the excavation of various plots in the town. Settlement dates to between MM IIB–LM III with earlier phases also possible.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S26. *Aria (Άρια)*

Type: Settlement. Region: Argolid. Nearest village: Nafplio. Fieldwork: Rescue excavation. Coastality value: 1920.

References: Dousougli 1998; Georgiadis 2012, 166.

Chronology: Late Neolithic–Final Neolithic.

Description: Small LN–FN settlement.

S27. *Asar Tepe (Ασάρ Τεπέ)*

Alternative name: Kremastol. Type: Settlement. Region: Thrace. Nearest village: Xilagani. Fieldwork: Survey. Coastality value: 17039.

References: Tsimpidis-Penrazos 1972, 86–91; *Ergon* 1972, 37–40; Ilieva 2013, 137–185.

Chronology: Middle Bronze III–Late Bronze Age

Description: Hilltop settlement with architectural remains, which date to the LBA. Most phases were EIA, though LH I is noted.

S28. *Asine (Ασίνη)*

Type: Settlement. Region: Argolid. Nearest village: Tolo. Fieldwork: Research excavation. Coastality value: 837.

References: Frödin & Persson 1938; Hägg & Hägg 1973; Hägg & Hägg 1978; Dietz 1980; Dietz 1982; Hägg *et al.* 1996; Nordquist 1987; Macheridis 2016, 71–92; 2017, 128–152.

Chronology: Early Bronze I–Late Bronze Age

Description: Multi–period settlement with earliest occupation dated to start of the EBA, with a more organised settlement in the MBA (Appendix 5B, Fig 13).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*).

S29. *Askitario (Ασκηταριό)*

Type: Settlement. Region: Attica. Nearest village: Orichalkourgi. Fieldwork: Research excavation. Coastality value: 891.

References: Theocharis, 1953–4, 59–76; Theocharis 1955b, 109–117; Maran 1998.

Chronology: Early Bronze I–III.

Description: Fortified EH I–III settlement with the remains of several houses (Appendix 5B, Fig. 14).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S30. *Asomatos (Ασώματος)*

Alternative name: Kremasti. Type: Settlement. Region: Dodecanese. Nearest village: Rhodes. Fieldwork: Rescue excavation. Coastality value: 524.

References: *ArchDelt* 44 (1989): B2, 503; Marketou 1990; *ArchDelt* 46 (1991): B2, 480–481; *ArchDelt* 49 (1994): B2, 778–781; Marketou 1997, 395–413.

Chronology: Early Bronze IIB–III.

Description: Several loosely associated insulae. The excavated buildings showed links with contemporary Heraion at Samos. Dated to the EB III phase, though a probable earlier EB IIB phase also.

S31. *Aspis–Argos (Ασπίς Άργους)*

Type: Settlement. Region: Argolid. Nearest village: Argos. Fieldwork: Rescue excavation. Coastality value: 5625.

References: Daux 1967; *ArchDelt* (1971): 26B1, 79–80; *ArchDelt* (1973) 28B1, 95–97; Philippa–Touchais & Touchais 1996, 843–845; *ArchDelt* 56–9 (2001–2004): B4, 32–33.

Chronology: Final Neolithic; Middle Bronze II–Late Bronze I.

Description: Successive excavations in the area of Aspis confirm that the first phase equates to MH II, followed by successive phases into the start of the LH period, with evidence of architectural features throughout. Scant traces of a Final Neolithic stratum also.

S32. *Atalanti (Αταλάντη)*

Type: Settlement. Region: Boeotia. Nearest village: Atalanti. Fieldwork: Rescue excavation. Coastality value: 4472.

References: *ArchDelt* 56–59 (2001–2004): B2, 375.

Chronology: Early Bronze I–IIA.

Description: Scant traces of EH habitation uncovered during various deep soundings in construction projects. Walls and stone piles associated with obsidian blades and EH pottery was reported.

S33. *Athens (Ακρόπολη)*

Type: Settlement. Region: Attica. Nearest village: Athens. Fieldwork: Rescue excavation. Coastality value: 12460.

References: Shear Jr 1975, 331–374; *ArchDelt* 55 (2000): B1, 49–56; *ArchDelt* 56–9 (2001–2004): B1, 147–152; Venieri 2010, 187–198.

Chronology: (Final Neolithic) Middle Bronze I–Late Bronze I.

Description: Dispersed prehistoric occupation on areas on and around the acropolis. Rescue excavations revealed a MH house, graves and pottery spanning the entire MH period, into the LH transition. MH occupation noted on the acropolis summit, the slopes and the area surrounding the acropolis.

Relevant finds: Appendix 5A: **5**.**29**, **5**.**134**.

S34. *Avdheli (Αβδέλι)*

Type: Possible settlement. Region: Cyclades. Island: Naxos. Fieldwork: Survey. Coastality value: 10830.

References: Doumas 1972, 155–156; Doumas 1977, 122; Karantzali 1996, 22.

Chronology: Early Bronze IIA.

Description: An L–shaped structure was reported which probably belonged to a settlement close to the cemetery.

S35. *Avdou (Αβδού)*

Type: Settlement. Region: Crete. Nearest village: Avdou. Fieldwork: Rescue excavation. Coastality value: 30941.

References: Mavraki-Balanou 2013, 288–301.

Chronology: Middle Bronze III–Late Bronze I

Description: Extensive Minoan settlement founded in MM III. The site was abandoned before the close of LM IB.

S36. *Avyssos (Άβυσσος)*

Type: Possible settlement. Region: Cyclades. Island: Naxos. Fieldwork: Survey. Coastality value: 1159.

References: Tsountas 1898, 175–176; Doumas 1972, 152, 157; Karantzali 1996, 30.

Chronology: Early Bronze I–IIA.

Description: Walls were noted by Tsountas likely to be from EC I/II (Kampos), and probably EC I.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S37. *Baela (Μπέλα)*

Type: Settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 3887.

References: Melas 1985, 58.

Chronology: Middle Bronze III–Late Bronze I.

Description: Minoan pottery, stones and terrace walls denoting houses. Small community, perhaps a hamlet sized settlement.

S38. *Boriza–Marathon (Μπόριζα Μαραθώνα)*

Type: Settlement. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 7805.

References: *ArchDelt* 50 (1995): B1, 64–66; *ArchDelt* 55 (2000): B1, 132–133; *ArchDelt* 56–9 (2001–2004): B1, 376–378.

Chronology: Late Neolithic–Early Bronze I.

Description: Ellipsoidal structure with associated cultural deposits. Pottery suggests occupation between LN and EH I.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S39. *Brauron (Βραυρώνα)*

Type: Settlement. Region: Attica. Nearest village: Vravronas. Fieldwork: Research excavation. Coastality value: 1410.

References: Theocharis 1950, 188–193; Papadimitriou 1955, 118–120; 1956, 77–81; Evstratiou 1999, 43–46; *Ergon* 1999, 29–32; Kalogeropoulos 2010, 211–221.

Chronology: (Early Bronze IIA–III); Middle Bronze III–Late Bronze I.

Description: MH settlement on the hill overlooking the classical site. There is evidence for EH IIA pottery, implying occupation in this phase also, though excavation has not gone below MH levels. The MH phase consisted of at least one house, retaining walls and a possible fortification wall.

S40. *Cape Mavros (Ακρωτήρι Μαύρος)*

Type: Settlement. Region: Crete. Nearest village: Vai. Fieldwork: Survey. Coastality value: 3267.

References: Nowicki 2014, 82.

Chronology: Final Neolithic–Early Bronze I.

Description: Small FN II hilltop settlement, evident through wall footings and pottery scatters.

S41. *Chalarovounia (Χαλαροβούνια)*

Type: Villa? Region: Cyclades. Island: Thera. Fieldwork: Rescue excavation. Coastality value: 14122.

References: *ArchDelt* 56–9 (2001–2004): B6, 154.

Chronology: Late Bronze I.

Description: Pumice removal revealed the remains of walls and structures associated with LC I pottery.

S42. *Chamaizi (Χαμέζι)*

Type: Villa. Region: Crete. Nearest village: Chamaizi. Fieldwork: Research excavation. Coastality value: 35458.

References: Xanthoudides 1906, 117–156; Davaras 1972, 283–288; 1992, 78–81; Blomberg & Henriksson 2007, 15–18.

Chronology: (Early Minoan III); Middle Bronze I.

Description: Large oval shaped structure with ten rooms. Previously interpreted as a shrine, but now thought to be a house. Earlier phases below the oval house may be Early Minoan.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S43. *Chamalevri (Χαμαλεύρι)*

Type: Settlement/workshop. Region: Crete. Nearest village: Chamalevri. Fieldwork: Rescue excavation. Coastality value: 8246.

References: *ArchDelt* 55 (2000): B2, 1031–1032.

Chronology: Middle Bronze II–III.

Description: Wall footings noted. Beneath a thick layer of debris were the remains of a MM workshop.

S44. *Chania (Χανιά)*

Type: Settlement. Region: Crete. Nearest village: Chania. Fieldwork: Excavation. Coastality value: 1046.

References: Tzedhakis 1981, 397–404; 1982, 312–319; *ArchDelt* 56–59 (2001–2004): B5, 388–391; *ArchDelt* 60 (2005): B2, 1004–1011; Kataki 2010, 709–718.

Chronology: Final Neolithic–Late Bronze Age.

Description: Ephemeral traces of FN–EM I occupation with more substantial remains from EM II onwards. Large scale levelling at the site in MM I and the settlement probably had a palace during the MM–LM period.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*).

S45. *Cheiromylos (Χειρόμυλος)*

Type: Possible settlement. Region: Cyclades. Island: Despotiko. Fieldwork: Survey. Coastality value: 2073.

References: Tsountas 1898, 176; Renfrew 1972, 142.

Chronology: Early Bronze I.

Description: EC I settlement, close to the Leivadhi cemetery. Rectangular houses with staircases were noted, as well as many EC sherds, but not excavated. Originally noted by Bent and reported by Tsountas.

S46. *Chousmeza–Paiania (Παιανία)*

Type: Settlement. Region: Attica. Nearest village: Paiania. Fieldwork: Rescue excavation. Coastality value: 14297.

References: Kakavogianni 2005, 188–189; Nazou 2014, 352; Andrikou 2020a, 11.

Chronology: Final Neolithic.

Description: Two ellipsoidal FN huts with cultural fills.

S47. *Corinth (Κόρινθος)*

Type: Settlement. Region: Corinthia. Nearest village: Corinth. Fieldwork: Research excavation. Coastality value: 30700 (to Saronic coast).

References : Hill 1927 73–74, 77; Weinberg 1937, 487–524; Roebuck, 1955, 148–149; Robinson & Weinberg 1960, 234, 240–241, 244–253; Wiseman 1967a, 23–27; Wiseman 1967b, 410; Williams II *et al.* 1974, 24–25, 33; Williams II & Fisher 1976, 101, 104; Robinson 1976, 210–212, 237; Lavezzi 1978, 402–451; Williams II & Zervos 1983, 2; Phelps 2004; Zachos 2008; Sanders *et al.* 2014, 3–8.

Chronology: Late Neolithic–Early Bronze IIA.

Description: LN strata uncovered west of Temples H and J. FN horizon found in the extension excavation. EH walls found in the prehistoric trial excavation, most likely EH II, but no evidence for EH IIB or III. EH settlement noted at 'Keramidaki', in the area of the Gymnasium. Much of earlier settlement likely removed during historical periods.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S48. *Debla (Δέμπλα)*

Type: Settlement. Region: Crete. Nearest village: Varipetro. Fieldwork: Research excavation. Coastality value: 14116.

References: Tzedhakis & Warren 1972, 66–72; Warren & Tzedhakis 1974, 299–342.

Chronology: Early Bronze I–IIB.

Description: Early Minoan I–II farmstead on the summit of a ridge in western Crete. Evidence of small houses.

S49. *Dhaskalio (Δασκαλειό)*

Type: Settlement. Region: Cyclades. Island: Keros. Fieldwork: Research excavation. Coastality value: 1423.

References: Renfrew *et al.* 2007b, 103–136; Renfrew *et al.* 2009, 27–47; Renfrew *et al.* 2013; Sotirakopoulou 2016.

Chronology: Early Bronze IIA–IIIB.

Description: Fortified coastal site of special importance with lengthy occupation history (EC IIA–III).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S50. *Dikili Tash (Ντικιλί–Τας)*

Type: Settlement. Region: Macedonia. Nearest village: Krinides. Fieldwork: Research excavation. Coastality value: 22193.

References: Tsirtsoni 2016, 271–297.

Chronology: Late Neolithic–Early Bronze III.

Description: Tell site, with early occupational phases, and LN II–FN phases (Dikili Tash IIA–B–C). Limited architectural remains in LN II, mostly of post–built houses. Gap of 700–1000 years after beginning of FN, before occupation again around 3200 BCE in EB I.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S51. *Dimini (Διμήνι)*

Type: Settlement. Region: Thessaly. Nearest village: Dimini. Fieldwork: Research excavation. Coastality value: 267 (LN–FN); 1844 (EBA–LBA).

References: *ArchDelt* 32 (1977): B1, 132–134; Hourmouziadis 1979; Tsuneki 1989; Halstead 1992, 29–59; *ArchDelt* 56–59 (2001–2004): B2, 473–475; Adrymi–Sismani 2010, 301–313.

Chronology: Late Neolithic–Early Bronze II; Middle Bronze III–Late Bronze Age.

Description: Long lived tell site (Appendix 5B, Fig. 16). Occupation stretching back to LN, continuous until the end of EH II. Gap in occupation between EH III–MH II, with reoccupation from MH III onwards.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S52. *Dionysos (Διόνυσος)*

Type: Probable settlement. Region: Attica. Nearest village: Dionysos. Fieldwork: Rescue excavation. Coastality value: 45771.

References: *ArchDelt* 65 (2010): B1, 208–209.

Chronology: Middle Bronze II.

Description: Two rubble walls, a row of stones, which could be a peribolos wall and a destruction layer. More rubble walls were revealed under the destruction layer as well as areas that could have served as hearths.

S53. *Dokathismata (Δωκαθίσματα)*

Type: Possible settlement. Region: Cyclades. Nearest village: Amorgos. Fieldwork: Survey. Coastality value: 18511.

References: Tsountas 1898, 165; Doumas 1977, 25.

Chronology: Early Bronze IIA.

Description: Walls reported near the cemetery. Possible settlement associated with the cemetery.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S54. *Dokos (Δοκός)*

Type: Possible settlement. Region: Saronic. Nearest village: Dokos. Fieldwork: Survey. Coastality value: 2704.

References: Papathanasopoulos 1976, 17–23.

Chronology: Early Bronze IIA.

Description: EH sherds and stone tools were noted. Probable walls, possibly dating to same period as shipwreck: EH II.

S55. *Drosia (Δροσιά)*

Alternative name: Salganea. Type: Settlement. Region: Boiotia. Nearest village: Soros. Fieldwork: Rescue excavation. Coastality value: 3895.

References: *ArchDelt* 25 (1970): B, 222; *ArchDelt* 33 (1978): B, 130; Sapouna–Sakellaraki 1988, 77–79: Krapf 2017, 149.

Chronology: (Late Neolithic–Final Neolithic) Early Bronze I – Late Bronze Age.

Description: Coastal tell site with buildings recovered from the MH and LH periods.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S56. *Eleusis (Ελευσίς)*

Type: Settlement. Region: Attica. Nearest village: Elefsina. Fieldwork: Rescue excavation. Coastality value: 1014.

References: Mylonas 1932, 104–117; 1933, 271–286; 1936; *ArchDelt* 34 (1979): B1, 37–49; *ArchDelt* 38 (1982): B1, 26–30; *ArchDelt* 45 (1990): B1, 56–58; Cosmopoulos 2015, 43–97.

Chronology: Early Bronze I–IIA; Middle Bronze II–Late Bronze Age.

Description: EH I and EH II wall remains in the area. Wall remains have been found of the MH II period, though in the MH III period the architectural remains are more obvious. Cemetery (**C66**) is formalised in the MH III period. In LBA, the settlement expands.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*).

S57. *Emporio (Εμπορió)*

Type: Settlement. Region: East Aegean. Island: Chios. Fieldwork: Research excavation. Coastality value: 1556.

References: Hood *et al.* 1981; Hood *et al.* 1982; Jarošová 2018, 32–51.

Chronology: (Early Neolithic) Late Neolithic – Early Bronze IIB (Late Bronze Age).

Description: Located on a rocky promontory close to a safe harbour. Evidence of a prehistoric settlement beginning in the EN with occupation evident until the EB IIB, before the layers are mixed. After this, there is evidence of later Mycenaean phase occupation at the site.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S58. *Epidavros (Απόλλωνος Μαλεάτα)*

Alternative name: Apollo Maleatas. Type: Settlement/Shrine. Region: Argolid. Nearest village: Epidavros. Fieldwork: Rescue excavation. Coastality value: 50578.

References: Lambrinoudakis 1976, 206–208; 1977, 193–194; 1999, 113–115; 2000, 67–69; 2001, 57–59; Theodorou–Mavrommatidi 2004; Theodorou–Mavrommatidi 2010, 521–533.

Chronology: Early Bronze I–Middle Bronze II.

Description: First occupation dates to EH I with associated architecture. Continuity into EH II with three occupational phases, before abandonment. No MH occupation or architecture have been found, despite a large MH pit in use over a long period. Interpreted as ritual usage of the abandoned EH site in the MH.

Relevant finds: Appendix 5A: **5**.**139**.

S59. *Eretria (Ερέτρια)*

Type: Settlement. Region: Euboia. Nearest village: Eretria. Fieldwork: Rescue excavation. Coastality value: 547.

References: Müller 1985; Friedemann 1995; Müller 1996; Huber 2007; 2008; 2015; Krapf 2017, 149.

Chronology: Middle Bronze II–Late Bronze Age.

Description: Settlement located on the acropolis in the MBA.

S60. *Eretria Magoula (Ερέτρια Μαγούλα)*

Type: Settlement. Region: Euboia. Nearest village: Magoula. Fieldwork: Rescue excavation. Coastality value: 1075

References: *ArchDelt* 42 (1987): B1, 211–213; Sapouna-Sakellaraki 1989, 91–104; *ArchDelt* 56–59 (2001–2004): B2, 282.

Chronology: Early Bronze I–Middle Bronze III.

Description: Pits and architectural remains. All remains lay near the surface and were accompanied by EH II–MH pottery. The southern sounding in particular produced architectural traces of the MH period: several contiguous elements of habitation, one of which has a floor covered with a white stucco, and two small cists containing burials of infants or newly born children. EH houses also noted.

Relevant finds: Appendix 3:E (*Marine food waste remains from ritual or probable ritual contexts*).

S61. *Ermioni Magoula (Ερμιόνη Μαγούλα)*

Alternate names: Kastri. Type: Settlement. Region: Argolid. Nearest village: Ermioni. Fieldwork: Rescue excavation. Coastality value: 570.

References: Hope Simpson 1981, 31; Jameson *et al.* 1994, 487–488, 502.

Chronology: Middle Bronze III.

Description: Modern development and erosion may have damaged the site. Walls are visible across the summit. Late MH apsidal house excavated, with a hearth and part of a storage *pithos* inside.

S62. *Falasarna (Φαλάσαρνα)*

Type: Probable settlement. Region: Crete. Nearest village: Falsarna. Fieldwork: Survey. Coastality value: 2810.

References: Nowicki 2014, 233–234.

Chronology: Early Bronze I.

Description: FN II (EB I) architectural remains were reported on the eastern edge of a ridge.

S63. *Fournoi (Φούρνοι)*

Type: Probable settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 916.

References: Melas 2009, 50–72; Mina & Stefanakis 2018, 138.

Chronology: Middle Bronze II–Late Bronze I.

Description: House remains dated between MM II–LM I period, produced utilitarian pottery, but also imported Protopalatial ceramic types (MM IIB–IIIA jars, cups, cooking vessels).

S64. *Fournoi Magoula (Φούρνοι Μαγούλα)*

Alternate names: Petres. Type: Probable settlement. Region: Argolid. Nearest village: Fournoi. Fieldwork: Survey. Coastality value: 2747.

References: Pullen 1985; Dousougli 1987, 216–219.

Chronology: Early Bronze IIA–B.

Description: No architectural features were noted in the surface survey, though EH roof tiles indicate the presence of houses. Fournoi–Magoula refers to the low hill overlooking the plain, while Petres is a large site, which has an estimated twenty EH structures.

S65. *Ftelia (Φτελιά)*

Type: Settlement. Region: Cyclades. Island: Mykonos. Fieldwork: Research excavation. Coastality value: 398.

References: *ArchDelt* 51 (1996): B2, 610–612; Sampson 2002; 2008.

Chronology: Late Neolithic.

Description: Small LN settlement with four architectural phases. Evidence of early bronze working at the site.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 3:E (*Marine food waste remains from ritual or probable ritual contexts*).

S66. *Ftellos (Φτέλλος)*

Type: Possible settlement. Region: Cyclades. Island: Thera. Fieldwork: Rescue excavation. Coastality value: 2999.

References: Marthari 1982, 86–101.

Chronology: Early Bronze IIIB–Middle Bronze I.

Description: Mining work uncovered the remains of structures dated to the EC–MC transition. Pottery of Phylakopi I and was noted, as well as an ellipsoidal building. Likely more structures were destroyed by mining.

S67. *Galanados (Γαλανάδο)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 5488.

References: *ArchDelt* 62 (2007): B2, 1147–1148; *ArchDelt* 63 (2008): B2 1105–1106.

Chronology: Early Bronze IIB.

Description: Close to a probable cemetery (**C69**), walls were discovered, with ceramics of the EC IIB period. The structure is likely part of a settlement.

S68. *Gerakas (Γέρακας)*

Type: Settlement. Region: Attica. Nearest village: Gerakas. Fieldwork: Rescue excavation. Coastality value: 19014.

References: *ArchDelt* 53 (1998): B, 87–88; Alram–Stern 2004, 544; Nazou 2014, 346; *ArchDelt* 68 (2013): B, 70–72; Andrikou 2020a, 10; Plassara 2020, 331–336.

Chronology: Early Bronze I–IIA.

Description: Evidence for a dispersed EH settlement.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S69. *Gournes (Γούρνες)*

Type: Settlement. Region: Crete. Nearest village: Gournes. Fieldwork: Rescue excavation. Coastality value: 1139.

References: Galanaki *et al.* 2011, 103–118.

Chronology: Middle Bronze II.

Description: A rectangular structure, which overlay three EM graves, with two more close by at the north and east.

S70. *Gournia (Γουρνιά)*

Type: Settlement. Region: Crete. Nearest village: Pacheia Ammos. Fieldwork: Research excavation. Coastality value: 1653.

References: Boyd Hawes *et al.* 1908; Soles 1979, 149–167; Soles 1991, 17–78; Watrous *et al.* 2015, 397–465.

Chronology: Early Bronze IIA–Late Bronze Age.

Description: Earliest sherds may date to the Neolithic but are not associated with architectural remains. Earliest substantial occupation dates to EM II, with continuous occupation throughout until the LBA. At the start of the MM period, Gournia takes on more of an urban character with further expansion of the settlement (Appendix 5B, Fig. 17).

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*). Appendix 5:A: **5**.**80**, **5**.**193**.

S71. *Grotta (Γρόττα)*

Alternate names: Kokkinovrachos. Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Research excavation. Coastality value: 620.

References: Kontoleon 1949, 120; Doumas 1972, 152–153; Photou 1983, 20–30; Hadjianastasiou 1988, 11–20; Karantzali 1996, 20; Cosmopoulos 2002, 127–148.

Chronology: Late Neolithic–Early Bronze IIA (Middle Bronze Age–Late Bronze Age)

Description: LN deposits and architectural features reported in and amongst the EC and later settlement. Appears to have been no FN (Attic–Kephala) horizon, rather the pottery seems to continue from LN to EC I (Grotta–Pelos) without break. Early excavations record ambiguous chronologies for the building remains. Doumas assigns an EC IIA dating for some of the early architecture put forward by Kontoleon. MC pottery has been recovered, though no architectural deposits are known. All below the later Mycenaean citadel site (Appendix 5B, Fig. 15).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S72. *Gyalou–Spata (Γυαλού Σπάτα)*

Type: Settlement. Region: Attica. Nearest village: Spata. Fieldwork: Rescue excavation. Coastality value: 12042.

References: Stathi 2015, 136; Ginalas *et al.* 2015, 342–346; Georgakopoulou *et al.* 2020, 186.

Chronology: Final Neolithic – Early Bronze I.

Description: Sunken floor huts and curved wall dwellings. Silver litharge found in FN/EB I layers.

S73. *Haleis (Αλιείς)*

Type: Settlement. Region: Argolid. Nearest village: Porto Heli. Fieldwork: Research excavation. Coastality value: 332.

References: Jameson 1969, 311–334; Pullen 2000, 133–187.

Chronology: Final Neolithic – Early Bronze I.

Description: Deposits on the acropolis of the later Classical site, underneath later remains. Pockets of FN and EH remains, though they are not associated with architectural remains.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S74. *Hasan Vryssi (Χασάν Βρύση)*

Type: Settlement. Region: Macedonia. Nearest village: Kitros. Fieldwork: Rescue excavation. Coastality value: 6572.

References: *ArchDelt* 56–59 (2001–2004): B3a, 157.

Chronology: Early Bronze I.

Description: Scant remains an EH settlement. Foundations of buildings and numerous large, shallow pits were discovered.

S75. *Heraion (Ηραίον)*

Type: Settlement. Region: East Aegean. Island: Samos. Fieldwork: Research excavation. Coastality value: 476.

References: Milocjic 1961; Kouka 2014, 43–64; Niemeier 2017, 195–200; Kouka & Menelaou 2018, 119–142.

Chronology: Final Neolithic–Late Bronze Age.

Description: Long–term occupation at the site underneath the Temple of Hera. Earliest dates to the Chalcolithic (FN), with no evidence for a break in occupation until the LBA.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*).

S76. *Ialysos Mt. Phileremos (Ιαλυσός Φιλερήμου)*

Type: Settlement. Region: Dodecanese. Island: Rhodes. Fieldwork: Rescue excavation. Coastality value: 10626.

References: *ArchDelt* 56–59 (2001–2004): B6, 281–285, 289–291; *ArchDelt* 61 (2006): B2, 1293–1295; *ArchDelt* 62 (2007): B2, 1341–1350, *ArchDelt* 63 (2008): B2, 1300, *ArchDelt* 64 (2009): B2, p. 965–971; *ArchDelt* 65 (2010): B2, 1732–1735.

Chronology: Middle Bronze II–Late Bronze III.

Description: Occupation on acropolis and surrounding lower levels. Minoan pottery in lower levels. Scant architectural remains on acropolis, due to later the clearance. Minoan imports inside at least two residential complexes, MM IB–II. Building remains of LB IA/LM IA were also uncovered.

S77. *Ialysos Trianda (Ιαλυσός Τριάντα)*

Type: Settlement. Region: Dodecanese. Island: Rhodes. Fieldwork: Rescue excavation. Coastality value: 4020.

References: Furumark 1950, 150–271; Benzi 1984, 93–105; *ArchDelt* 39 (1984), 329–330; *ArchDelt* 41 (1986), 620–621; *ArchDelt* 42 (1987), 625; Marketou 1998, 27–28.

Chronology: Middle Bronze II – Late Bronze Age.

Description: Main LB I settlement, with evidence of MBA and LBA houses.

Relevant finds: Appendix 4:A (*Murex dye production*)

S78. *Itanos Alatopatela (Ίτανος Αλατοπατέλα)*

Type: Settlement. Region: Crete. Nearest village: Vai. Fieldwork: Survey. Coastality value: 8440.

References: Nowicki 2014, 84–85.

Chronology: Early Bronze I.

Description: Survey revealed a FN II–EM I settlement with an enclosure wall.

S79. *Kafkala (Καυκάλα)*

Type: Settlement. Region: Euboia. Nearest village: Paralia Politikon. Fieldwork: Survey. Coastality value: 2834.

References: *ArchDelt* 29 (1973–1974): B2, 491.

Chronology: Middle Bronze II–Late Bronze Age.

Description: MH and LH building remains.

S80. *Kalmi (Κάλμι)*

Type: Settlement. Region: Attica. Nearest village: Feriza. Fieldwork: Rescue excavation. Coastality value: 7179.

References: *ArchDelt* 52 (1997): B, 84–85.

Chronology: Early Bronze IIA (Early Bronze III – Middle Bronze Age).

Description: Remains of EH II apsidal house on the summit of the hill. EH III and MH sherds were also found in the vicinity.

S81. *Kalo Chorio (Καλό Χωριό)*

Alternate name: Istron. Type: Settlement. Region: Crete. Nearest village: Istron. Fieldwork: Rescue excavation. Coastality value: 1609.

References: Haggis 1996, 645–681.

Chronology: Early Bronze I–IIA.

Description: Rescue excavations revealed evidence for an EM I house. Three room building with several consecutive floors into EM II.

S82. *Kalogerovrysi (Καλογερόβρυση)*

Type: Settlement. Region: Euboia. Nearest village: Theologos. Fieldwork: Rescue excavation. Coastality value: 18431.

References: Sampson 1993, 169–173.

Chronology: Early Bronze II; Middle Bronze I – Late Bronze I.

Description: Rectangular MH buildings with several rooms, as well as five cist graves and a plundered shaft grave. EH occupation at the settlement also, though MH settlement extends from MH I–LH I. Evidence for marine molluscs at the inland site, which is situated around two hours on foot from the sea, though almost all specimens come from the EH layers.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S83. *Kalyvia Thorikou (Καλύβια Θορικού)*

Type: Settlement. Region: Attica. Nearest village: Thorikou. Fieldwork: Rescue excavation. Coastality value: 12224.

References: Raftopoulou & Tsonos 2020, 108–110.

Chronology: Late Neolithic.

Description: Pit House IV, a semi-sunken irregular house with two rooms and hearths. Pottery dates to the LN.

S84. *Kanakia (Κανάκια)*

Type: Settlement. Region: Attica. Nearest village: Karakiani. Fieldwork: Survey. Coastality value: 1580.

References: Lolos 2010, 181–183.

Chronology: Middle Bronze II–III.

Description: Hilltop site. Ceramics dated to MH II–III.

S85. *Kantza (Κάντζα)*

Type: Settlement. Region: Attica. Nearest village: Kantza. Fieldwork: Rescue excavation. Coastality value: 13137.

References: Romanidou 2020, 427.

Chronology: Middle Bronze I–II.

Description: Circular posthole structures, as well as a two-roomed house.

S86. *Kantza–Paiania (Παιανία–Κάντζα)*

Type: Settlement. Region: Attica. Nearest village: Paiania. Fieldwork: Rescue excavation. Coastality value: 13123.

References: Andrikou 2020a, 5.

Chronology: Late Neolithic.

Description: Disturbed remains of LN settlement. Five sunken houses and storage pits.

S87. *Karavelas (Καραβέλας)*

Type: Settlement. Region: Crete. Nearest village: Agios Vasileios. Fieldwork: Survey. Coastality value: 32952.

References: Nowicki, 2014, 214.

Chronology: Early Bronze I.

Description: FN II sherds were reported, with eroded architectural remains on surface.

S88. *Karydi (Καρύδι)*

Type: Probable settlement. Region: Crete. Nearest village: Karydi. Fieldwork: Survey. Coastality value: 16437.

References: Nowicki, 2014, 106.

Chronology: Early Bronze I.

Description: Probably a hamlet with evidence of a kiln found through survey.

S89. *Kastellos (Κάστελλος)*

Type: Settlement/workshop. Region: Cyclades. Nearest village: Folegandros. Fieldwork: Rescue excavation. Coastality value: 521.

References: *ArchDelt* 43 (1988): B2, 504.

Chronology: Early Bronze IIA.

Description: Small series of eroded buildings on an exposed cape. Sherds were few but obsidian flakes plentiful. The place may have been an obsidian worskshop facing Melos.

S90. *Kastraki (Καστράκι)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 302.

References: Stephanos 1904, 60; 1908, 117; 1909, 209; 1910, 272; Doumas 1972, 152, 165; 1977, 25; Photou 1983, 28–29.

Chronology: Early Bronze IIA.

Description: Small settlement with a building made of two partitions built on bedrock. Obsidian blades, marble figurines and remnants of copper suggest that this site ought to be dated to EC II, following Doumas.

S91. *Kastraki Almyrou (Καστράκι Αλμυρού)*

Type: Settlement. Region: Phthiotis. Nearest village: Almyrou. Fieldwork: Rescue excavation. Coastality value: 10401.

References: Batziou–Efstratiou 1994, 2010; Wiersma 2014, 42.

Chronology: Early Bronze III–Late Bronze I.

Description: South of the modern town of Almyros was an EH III settlement with an apsidal building. Occupation continued through MH into the LH period with some later Classical activity.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*)

S92. *Kastri–Chalandriani (Καστρί Χαλανδριανής)*

Type: Settlement. Region: Cyclades. Island: Syros. Fieldwork: Research excavation. Coastality value: 27941.

References: Tsountas 1898–9: 115–121; *ArchDelt* 22A (1967), 53–76; Doumas 1972a: 158–162; Marthari 2006, 111–119; *Ergon* 2007, 60–5; *ArchDelt* 63 (2008): B2, 1095–1097; *Ergon* 2008, 87–92; Marthari 2008, 87–92; 2009b, 141–144; 2010, 113–118; 2011, 85–86.

Chronology: Early Bronze IIB.

Description: Fortified settlement with horseshoe–shaped towers. Interior consists of houses with plentiful artefacts recovered.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S93. *Kastri Kythera (Καστρισιάνικα)*

Type: Settlement. Region: Laconia. Nearest village: Kythera. Fieldwork: Research excavation. Coastality value: 890

References: Coldstream & Huxley 1972; Bevan *et al.* 2002, 55–96.

Chronology: Early Bronze II–Late Bronze III.

Description: Limited evidence for EH I pottery, followed by EM II–III pottery deposits. Substantial architectural elements that can be dated with some certainty towards the MM IIIB period.

Relevant finds: Appendix 4:A (*Murex dye production*).

S94. *Kastri–Theologos (Καστρί Θεολόγου)*

Type: Settlement. Region: North Aegean. Island: Thasos. Fieldwork: Rescue excavation. Coastality value: 17181.

References: *ArchDelt* 27 (1972): B2: 520–525; *ArchDelt* 28 (1973): B2, 444–447; *ArchDelt* 30 (1975): B1, 282–283; *ArchDelt* 32 (1977): B1, 249; *ArchDelt* 33 (1978): B1, 290–292; Koukouli– Chrysanthaki & Papadopoulos 2016, 339–358.

Chronology: Late Neolithic.

Description: Excavation revealed LN layers, scanty architectural evidence and postholes, hearths and storage *pithoi*.

S95. *Kastro Alimia (Κάστρο Αλιμιάς)*

Type: Settlement. Region: Dodecanese. Island: Alimia. Fieldwork: Research excavation. Coastality value: 1653.

References: Sampson 2003, 79–86.

Chronology: Final Neolithic.

Description: Defensive site dating to the FN with a view over the coast towards Rhodes.

S96. *Katevati (Κατεβατή)*

Type: Settlement. Region: Crete. Nearest village: Bali. Fieldwork: Rescue excavation. Coastality value: 2661.

References: Papadopoulou & Flevari 2013, 426–434.

Chronology: Middle Bronze II–III.

Description: Coastal Minoan site. Several rooms in the complex. Situated on a low hill by the sea.

S97. *Kato Kastanava (Κάτω Καστανάβα)*

Type: Settlement. Region: Attica. Nearest village: Profitis Ilias. Fieldwork: Survey. Coastality value: 52541

References: Knodell *et al.* 2017, 154–155.

Chronology: Final Neolithic – Early Bronze I.

Description: Survey site, with extensive stonewalls and structures. Ceramics and lithics dated mostly to the EH I, though walls appeared modern.

S98. *Kato Kouphonisi (Κάτω Κουφονήσι)*

Type: Settlement. Region: Cyclades. Island: Kato Kouphonissi. Fieldwork: Survey. Coastality value: 769.

References: Hadjianastasiou 1989, 206; Schallin 1993, 14.

Chronology: Late Bronze I.

Description: Small LC settlement with the remains of buildings.

S99. *Kavallari (Καβαλλάρι)*

Type: Settlement. Region: Macedonia. Nearest village: Kavallari. Fieldwork: Rescue excavation. Coastality value: 21463.

References: *ArchDelt* 61 (2006): B2, 764–766.

Chronology: Late Neolithic.

Description: Over 100 pits with vertical walls dated to the LN. North of the pits, a peribolos wall was identified.

S100. *Kavos Vasili (Κάβος Βασίλη)*

Type: Settlement. Region: Saronic. Island: Poros. Fieldwork: Rescue excavation. Coastality value: 2131.

References: Konsolaki–Giannopoulou 2007a, 127–170; 2009, 497–504; 2011, 259–278.

Chronology: Early Bronze I–IIA.

Description: EH settlement with three rectangular buildings excavated. Analysis of pottery suggests a floruit in EH II, with abandonment, perhaps following a severe earthquake, before EH III.

S101. *Kavousi Azoria (Καβούσι Αζοριάς)*

Type: Settlement. Region: Crete. Nearest village: Kavousi. Fieldwork: Research excavation. Coastality value: 31789.

References: Gesell *et al.* 1983, 389–420; Gesell *et al.* 1985, 327–355; Gesell *et al.* 1988, 279–301; Gesell *et al.* 1991, 145–77; Nowicki 2014, 158–159; Haggis *et al.* 2007, 665–667.

Chronology: Final Neolithic.

Description: Remains of walls and architecture and dated to the FN I, found beneath the Iron Age refuge settlement.

S102. *Kephala (Κεφάλα)*

Type: Settlement. Region: Cyclades. Island: Kea. Fieldwork: Research excavation. Coastality value: 552.

References: Caskey 1962, 263–283; Caskey 1964, 314–335; Coleman 1977; Whitelaw 1991, 199–216.

Chronology: Final Neolithic.

Description: Important FN settlement situated on a rocky promontory. Buildings, extensive cultural fills and associated cemetery (see **C92**) were published.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*); Appendix 4: EC (*Manuports and miscellany*)

S103. *Kephalari Magoula (Κεφαλάρι Μαγούλα)*

Type: Settlement. Region: Argolid. Nearest village: Kephalari. Fieldwork: Rescue excavation. Coastality value: 1030.

References: Felsch 1971, 1–12; *ArchDelt* 28 (1973), 246; Dousougli 1987, 164–220.

Chronology: Early Bronze II – Late Bronze Age

Description: Tell site with EH to LH occupation.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S104. *Kephali Aphroditis (Κεφάλι Αφροδίτης)*

Type: Settlement. Region: Crete. Nearest village: Epano Chorio. Fieldwork: Research excavation. Coastality value: 36646.

References: Betancourt 2013.

Chronology: Final Neolithic–Early Bronze I.

Description: Small fortified FN–EM I settlement consisting of small buildings. Interpreted by the excavator as a watchtower.

Relevant finds: Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4: EC (*Manuports and miscellany*).

S105. *Kephali Sphendyli (Κεφάλι Σφεντύλι)*

Type: Settlement. Region: Crete. Nearest village: Sphendyli. Fieldwork: Rescue excavation. Coastality value: 31789.

References: Mavraki-Balanou 2013, 288–301.

Chronology: Middle Bronze III–Late Bronze I.

Description: Neopalatial building complex consisting of fifty–two rooms. Underneath the settlement was a series of FN and EM burials. Discovered during preparation work in advance of the construction of the Aposelemi dam.

S106. *Kephalos Antissa (Κεφάλος Άντισσας)*

Type: Settlement. Region: East Aegean. Island: Lesbos. Fieldwork: Survey. Coastality value: 529.

References: Zachos 2010, 317–321.

Chronology: Early Bronze I–IIA. (Middle Bronze Age)

Description: Scant traces of ancient buildings, as well as EBA and MBA ceramics.

S107. *Keratea–Mokriza (Κερατέα Μόκριζα)*

Type: Settlement. Region: Attica. Nearest village: Mokriza. Fieldwork: Rescue excavation. Coastality value: 31444.

References: *ArchDelt* 62 (2007): B, 211–212.

Chronology: Early Bronze IIA.

Description: Litharge fragments, as well as cultural layers and scant traces of an EH settlement.

S108. *Keratea–Zapani (Κερατέα Ζαπάνι)*

Type: Settlement. Region: Attica. Nearest village: Keratea. Fieldwork: Rescue excavation. Coastality value: 14213.

References: Tsaravopoulos *et al.* 2001, 179–201; *ArchDelt* 56–59 (2001–2004): B1, 342; *ArchDelt* 62 (2007): B1, 205–211; Nazou 2014, 348.

Chronology: Early Bronze IIA – Middle Bronze I

Description: Substantial fortified EH settlement consisting of two sunken floor huts, rock cut puts and EH II – MH ceramics. Silver litharge found in EH II layers.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S109. *Keratsini (Κερατσίνι)*

Alternate name: Agios Georgios. Type: Settlement. Region: Attica. Nearest village: Piraeus. Fieldwork: Rescue excavation. Coastality value: 3024.

References: *ArchDelt* 62 (2007), B1 250; Mari 2020, 154.

Chronology: Early Bronze I–IIA

Description: EH walls (likely EH II) were discovered on the slopes of Agios Georgios hill.

S110. *Keros–Polygon 2 (Κέρος)*

Type: Settlement. Region: Cyclades. Island: Keros. Fieldwork: Survey. Coastality value: 914.

References: Smith & Vlanti 2017, 32.

Chronology: Early Bronze IIA

Description: Trial trenches established an EC IIA date for field walls and structures noted in the survey.

S111. *Kiapha Thiti (Κιάφα Θήτι)*

Alternate name: Kontra Gkliate. Type: Settlement. Region: Attica. Nearest village: Anixi. Fieldwork: Rescue excavation. Coastality value: 8357.

References: *ArchDelt* 37 (1982): B1, 60; Maran 1992.

Chronology: Final Neolithic; Early Bronze II; Middle Bronze III.

Description: Traces of earlier FN occupation atop the hill, while there are substantial MH remains also evident, particularly in the fortifications. Test pits revealed a number of walls in association with EH and MH sherds, as well as thick layers of ash.

S112. *Kifissia (Κηφισιά)*

Type: Settlement. Region: Attica. Nearest village: Kifissia. Fieldwork: Rescue excavation. Coastality value: 18483.

References: *ArchDelt* 61 (2006): B1, 160–161.

Chronology: Early Bronze IIA.

Description: EH II houses noted, made from postholes. Refuse pit found, containing only ceramics.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*).

S113. *Klopedi (Κλοπεδή)*

Type: Settlement. Region: East Aegean. Nearest village: Lesbos. Fieldwork: Research excavation. Coastality value: 906.

References: *ArchDelt* 6 (1921), 143–153; Evangelidis 1928, 126–137; Lambrianides & Spencer 1997, 103–104.

Chronology: Early Bronze IIA.

Description: Prehistoric remains were detected between two Archaic temples. Inside the building were EB ceramics.

S114. *Knossos (Κνωσός)*

Type: Settlement. Region: Crete. Nearest village: Knossos. Fieldwork: Research excavation. Coastality value: 9555.

References: Evans 1900, 1–70; 1901, 1–120; 1902, 1–124; 1903, 1–153; 1904, 1–62; 1905, 1–26; Pendlebury & Pendlebury 1930, 53–73; Furness 1953, 94–134; Evans 1964, 132–240; 1968; 267–276; Warren *et al.* 1968, 239–276; Popham *et al.* 1974, 181–194; Cameron 1976, 1–13; Popham 1977, 185–195; Popham 1978, 179–187; Catling *et al.* 1979, 1–80; Manteli & Evely 1995, 1–16; Momigliano & Wilson 1996, 1–57; Efstratiou *et al.* 2004, 39–49; Wilson & Day 2000, 21–63; Momigliano 2000, 65–105; Tomkins 2007, 9–48.

Chronology: Early Neolithic–Roman.

Description: Long–lived *magoula*. Evidence of occupation over a wider area over Kephala hill since the beginning of the Neolithic, uninterrupted until the end of the Late Bronze Age. First palace likely dates to late MM IA, at the same time as the cutting of the Royal Road (Appendix 5B, Fig. 19).

Relevant finds: Appendix 3:C (*Storage and cooking of marine foo*d); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*); Appendix 5A: **5.21, 5.41, 5.42, 5.57, 5.72, 5.73, 5.76, 5.77, 5.114, 5.171, 5.173, 5.174, 5.175, 5.176, 5.177, 5.178, 5.179, 5.194, 5.195, 5.196, 5.199, 5.200, 5.205, 5.206, 5.210, 5.211, 5.212, 5.220, 5.221, 5.222, 5.227, 5.228, 5.229, 5.230**.

S115. *Koimisi (Κοίμηση)*

Type: Settlement. Region: Cyclades. Island: Thera. Fieldwork: Survey. Coastality value: 7725.

References: Sbonias *et al.* 2015a, 50; 2015b; Sbonias *et al.* 2020, 105–132.

Chronology: Early Bronze IIA – Middle Bronze III.

Description: Settlement extends over a hill with evidence for buildings and occupation stretching from EC II to the end of the MC. Not clear if it is occupied in LC I, though the site is overlain by the remnants of the eruption.

S116. Kolonna (Κολώνα)

Type: Settlement. Region: Saronic. Island: Aegina. Fieldwork: Research excavation. Coastality value: 199.

References: Walter 1980, 85–91; Walter & Felten 1981; Forsen 1992, 114–117; Gauss & Smetana 2007, 451–472; Gauss & Smetana 2010, 165–174; Gauss *et al.* 2011, 76–87.

Chronology: Late Neolithic–Late Bronze Age.

Description: Pre–eminent coastal centre of the Saronic Gulf. Architecture of Neolithic phases (Kolonna I), are ephemeral, though observed through postholes and wall remnants. Firmer evidence of occupation in EH II (Kolonna II–III) and continuous habitation can be observed until the end of the Late Bronze Age.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 5A: **5.135, 5.136, 5.137**.

S117. *Korfi t'Aroniou (Κορφή τ'Αρωνιού)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 6955.

References: *ArchDelt* 18 (1963): B, 276–278; *ArchDelt* 20 (1965): A, 41–64; Doumas 1972, 158.

Chronology: Early Bronze IIA.

Description: Several houses were excavated pertaining to an EC II fortified settlement.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 5A: **5.124, 5.125**.

S118. *Koropi (Κορωπί)*

Type: Settlement. Region: Attica. Nearest village: Koropi. Fieldwork: Rescue excavation. Coastality value: 89296

References: *ArchDelt* 40 (1985): B, 66–69; *ArchDelt* 42 (1987): B, 97; *ArchDelt* 44 (1989): B1, 84; *ArchDelt* 55 (2000): B1, 129–132. *ArchDelt* 56–9 (2001–2004): B1, 340–341; *ArchDelt* 61 (2006): B1, 172–173; *ArchDelt* 62 (2007): B1, 202–5; *ArchDelt* 65 (2010): B1, 180–181; Hadjikoumis 2016, 225–245.

Chronology: Early Bronze IIA–IIIA.

Description: EH pottery and EH buildings. Several sites near modern Koropi, indicating dispersed occupation of the plain. Remnants of EH IIB and early EH III architecture.

S119. *Koukonissi (Κουκονήσι)*

Type: Settlement. Region: North Aegean. Island: Lemnos. Fieldwork: Rescue excavation. Coastality value: 891.

References: *ArchDelt* 50 (1995): B, 694. *ArchDelt* 54 (1999): B2, 766; Boulotis 2010, 891–907; Petrakis *et al.* 2010, 909–917.

Chronology: (Early Bronze Age) Middle Bronze II–Late Bronze I.

Description: Sporadic documentation of EBA ceramics and architecture with Poliochni Brown ceramics being dominant. Architecture also dating to Poliochni Yellow is present.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S120. *Koukoumia (Κουκουμιά)*

Type: Settlement. Region: Dodecanese. Island: Rhodes. Fieldwork: Rescue excavation. Coastality value: 2247.

References: Sampson 2003, 101–102.

Chronology: Late Neolithic.

Description: On two sides of a cape overlooking the sea were remains of Neolithic buildings. The settlement was substantial, to judge from the ceramic scatter around the excavated areas.

S121. *Koukounaries (Κουκουναριές)*

Type: Settlement. Region: Cyclades. Island: Paros. Fieldwork: Research excavation. Coastality value: 2061.

References: Schilardi 1974, 181–188; 1975, 197–211; 1977, 363–377; 1981, 269–292; 1982, 232–252; 1984, 263–300; 1988, 184–207; 1989, 253–266; 1990a, 209–223; Katsarou & Schilardi 2004, 23–48; Katsarou–Tzeveleki & Schilardi 2008, 61–70.

Chronology: Late Neolithic–Early Bronze IIA (Late Bronze Age)

Description: Extensive prehistoric settlement, with traces of habitation back into the LN. Most of the surface remains are Mycenaean. The FN is not clear but there may instead be a continuation of LN culture. Destruction at the end of EC IIA, before later Mycenaean occupation, with a period of abandonment in between.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S122. *Koumbi (Κουμπί)*

Type: Settlement. Region: Euboia. Nearest village: Aidipsos. Fieldwork: Rescue excavation. Coastality value: 3255.

References: *ArchDelt* 38 (1982): B1, 141; Samspon 1992, 200.

Chronology: Middle Bronze I–III.

Description: MH buildings, floor layers and pottery were found, along with a destruction layer.

S123. *Kouremenos Hill (Λόφος Κουρεμένου)*

Alternate name: Agios Stephanos. Type: Settlement. Region: Attica. Nearest village: Agios Stephanos. Fieldwork: Rescue excavation. Coastality value: 28187.

References: *ArchDelt* 65 (2010): B1, 156–157

Chronology: Final Neolithic – Early Bronze IIA.

Description: FN occupation represented by a sunken floor hut with clay and pebble floor. Two rectilinear single storey buildings in EH I and another in EH II.

S124. *Kourtir (Κουρτήρ)*

Type: Settlement. Region: East Aegean. Island: Lesbos. Fieldwork: Survey. Coastality value: 449.8

References: *ArchDelt* 26 (1971): B2, 457; Lambrianides & Spencer 2008, 336.

Chronology: (Final Neolithic); Early Bronze I–III. (Middle – Late Bronze Age)

Description: Large settlement, with occupation stretching throughout EBA. Likely to have been the main settlement of the island after Thermi went out of use. Settlement now partly eroded by the sea.

S125. *Kritsana (Κριτσανά)*

Type: Settlement. Region: Macedonia. Nearest village: Epanomi. Fieldwork: Research excavation. Coastality value: 3523.

References: Heurtley 1939, 17–22.

Chronology: Late Neolithic – Early Bronze III.

Description: Long–lived *magoula* beginning in LN, continuing through to the end of the EBA, with a series of five successive settlements. An imported EH III sherd in the fifth level provides synchronism.

S126. *Kryoneri (Κρυονέρι)*

Type: Settlement. Region: Macedonia. Nearest village: Kastri. Fieldwork: Rescue excavation. Coastality value: 3084.

References: Malamidou 1997; 2016, 299–315.

Chronology: Late Neolithic–Final Neolithic.

Description: Tell site, with building remains. Most of the fills belong to LN II, with some later levels.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*)

S127. *Labayanna (Λαμπαγιαννά)*

Type: Settlement. Region: Argolid. Nearest village: Kilada. Fieldwork: Underwater excavation. Coastality value: 198.

References: Smith 2017, 116. ID8188.

Chronology: (Final Neolithic); Early Bronze I–IIB.

Description: Underwater archaeological survey revealed the remains of an EH I–II settlement. Main architectural phase is EH II, though there are earlier fills below the architectural levels, indicating an EH I phase, which is likely to contain architectural elements. Strong evidence for murex dye processing at the site (D.Reese pers.comm)

S128. *Laimos–Vouliagmeni (Λαιμός Βουλιαγμένης)*

Type: Settlement. Region: Attica. Nearest village: Vouliagmeni. Fieldwork: Rescue excavation. Coastality value: 600.

References: Giamalidi *et al.* 2020 164–171.

Chronology: Late Neolithic – Final Neolithic.

Description: Rectangular building, as well as a circular stone–paved area with LN–FN ceramics.

S129. *Lakos (Λάκκος)*

Type: Possible settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 560.

References: Melas 1985, 56.

Chronology: Middle Bronze II – Late Bronze I.

Description: Scant building remains included MM II–LM I ceramics. Interpreted as a farmhouse.

S129. *Lambrika (Λαμπρικά)*

Type: Settlement. Region: Attica. Nearest village: Koropi. Fieldwork: Rescue excavation. Coastality value: 12437.

References: *ArchDelt* 56–59 (2001–2004): B1, 328, 331, 343–344; Kakavogianni *et al.* 2008, 45–57; Kakavogianni *et al.* 2009b, 237–248.

Chronology: Early Bronze I–IIB.

Description: Large rectangular house and metallurgical workshop dated to EH I–IIB. Silver litharge found in EH I.

S130. *Lamnoni (Λαμνώνι)*

Type: Settlement. Region: Crete. Nearest village: Lamnoni. Fieldwork: Rescue excavation. Coastality value: 46001.

References: Branigan 1998, 56–57.

Chronology: Final Neolithic.

Description: Survey site with architectural features and FN ceramics.

S131. *Lefkandi (Λευκαντί)*

Type: Settlement. Region: Euboia. Nearest village: Lefkandi. Fieldwork: Research excavation. Coastality value: 627.

References: Popham & Sackett 1968; Sackett & Popham 1972, 8–19; *ArchDelt* 48 (1993), 195; Pakkanen & Pakkanen 2000.

Chronology: Early Bronze IIA – Late Bronze Age.

Description: Important prehistoric site with long–term occupational layers below all of the LH IIIC and later settlement. Settlement was small in EBA, though appears to have expanded towards the EH–MH transition.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S133. *Lerna (Λέρνη/Λέρνα)*

Type: Settlement. Region: Argolid. Nearest village: Myloi. Fieldwork: Research excavation. Coastality value: 552.

References: Caskey 1954, 3–30; Caskey 1956, 147–173; Caskey 1957, 142–162; Caskey 1958, 125–144; Caskey 1959, 202–207; Rutter 1995; Wiencke 2000; Phelps, 2004, 22; Vitelli 2007; Banks 2015; Lindblom forthcoming.

Chronology: (Early–Middle Neolithic) Final Neolithic – Late Bronze Age.

Description: Long–lived settlement from EH to LH. Mainland type–site for the EBA. Extensive occupation with evidence for a 'corridor' house in EH IIB (House of Tiles). Settlement remains important throughout MH. No LN noted in the excavation – jump from MN to FN (Appendix 5B, Fig. 20).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany)*

S134. *Limani Pasa (Λιμάνι Πασά)*

Type: Settlement. Region: Attica. Nearest village: Lavrio. Fieldwork: Rescue excavation. Coastality value: 494.

References: Oikonomakou 2010, 235–242; *ArchDelt* 49 (1994): B1, 69–70.

Chronology: Early Bronze III – Middle Bronze III.

Description: Architectural remains atop a hill. Several phases noted, from the end of the EH throughout the MBA. Strong evidence for Cycladic contact.

Relevant finds: Appendix 3:D (Marine food waste remains from quotidian contexts); Appendix 4:B (Processing marine molluscs).

S135. *Limenaria–Thasos (Λιμενάρια)*

Type: Settlement. Region: North Aegean. Island: Thasos. Fieldwork: Rescue excavation. Coastality value: 550.

References: Malamidou & Papadopoulos 1993; Papadopoulos & Malamidou 2008; Koukouli–Chrysanthaki & Papadopoulos 2016, 339–358.

Chronology: Final Neolithic – Early Bronze III.

Description: EBA finds are rich, though the site likely has an FN phase. Located on a low rocky hill located c. 150m from the ancient coast. Three EBA building phases.

Relevant finds: Appendix 4:B (*Processing marine molluscs*).

S136. *Lykopoulo (Λυκόπουλο)*

Type: Settlement. Region: Saronic. Island: Salamis. Fieldwork: Survey. Coastality value: 6345.

References: ID2080

Chronology: Early Bronze IIA.

Description: Survey site, with a fortification circuit with EH II sherds and wall foundations

S137. *Magasa Vigli (Βιγλί Μαγκασά)*

Type: Settlement. Region: Crete. Nearest village: Vrysidi. Fieldwork: Research excavation. Coastality value: 12371.

References: Dawkins 1904–5, 260–268; Nowicki 2014, 99–101.

Chronology: Late Neolithic – Early Bronze I.

Description: Neolithic house at Magasa and a rock shelter nearby, though there is difficulty in dating these sites to a specific period of the Neolithic. Probable EM I settlement found by survey.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S138. *Magoula–Evstratiou (Μαγούλα Ευστρατίου)*

Type: Settlement. Region: Attica. Nearest village: Kampos Kilados. Fieldwork: Survey. Coastality value: 1442.

References: Jameson *et al.* 1994, 466.

Chronology: Early Bronze I–IIA.

Description: Evidence for scattered walls and EH I–IIA ceramics found on survey.

S139. *Magoula–Spata (Μαγούλα–Σπάτα)*

Type: Settlement. Region: Attica. Nearest village: Spata. Fieldwork: Rescue excavation. Coastality value: 11657.

References: Nazou 2014, 352; Stathi 2015, 137; Andrikou 2020a, 12.

Chronology: (Final Neolithic) Early Bronze IIA–IIB

Description: Presence of large ditches and a settlement extending over a hill in Spata.

S140. *Makriyalos (Μακρύγιαλος)*

Type: Settlement. Region: Thessaly. Nearest village: Makriyalos. Fieldwork: Rescue excavation. Coastality value: 4351.

References: Pappa *et al.* 1998, 285–286; Pappa & Besios 1999, 177–195; Pappa *et al.* 2004, 16–44.

Chronology: Late Neolithic (Middle Bronze Age)

Description: Extended settlement dispersed rather than a tell site. Large area, enclosed by ditches, contained houses. Occupation at the site had two phases, both LN. Possible MH occupation in the area.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*).

S141. *Makrovouni (Μακροβούνι)*

Type: Settlement. Region: Argolid. Nearest village: Argos. Fieldwork: Rescue excavation. Coastality value: 3671.

References: Dousougli 1987, 164–220.

Chronology: Early Bronze I–IIA.

Description: Traces of walls and pottery dated to between EH I–IIA were recovered. Site appears to have been heavily eroded.

S142. *Malia (Μάλια)*

Type: Large settlement. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 803.

References: Chapouthier & Charbonneaux 1928; Chapouthier 1930; Chapouthier & Demargne 1942; Demargne 1945; Deshayes & Dessene 1959; Chapouthier & Demargne 1962; van Effenterre & van Effenterre 1969; Amouretti 1970; van Effenterre & van Effenterre 1976; Pelon 1980 (1–2); Detournay *et al.* 1980; Poursat *et al.* 1989, 762–788; 1992, 733–753; Poursat 1996 Pomadère 2008, 827–834.

Chronology: Early Bronze IIA – Late Bronze Age.

Description: Traces of an EM II village beneath the later settlement. By MM I, Malia was a large palatial settlement, with habitation over an extensive area (Appendix 5B, Fig. 21).

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EC (*Manuports and miscellany*); Appendix 5A: **5.25, 5.34, 5.74, 5.143, 5.144, 5.145, 5.192, 5.197, 5.198, 5.218, 5.219, 5.223, 5.224, 5.225, 5.226**.

S143. *Malia–Prophitis Elias (Μάλια – Προφήτης Ηλίας)*

Type: Settlement. Region: Crete. Nearest village: Malia. Fieldwork: Survey. Coastality value: 786.

References: Nowicki 2014, 185.

Chronology: Final Neolithic – Early Bronze I.

Description: Later occupation obscures the FN–EM remains. FN and EM I pottery was found on survey.

S144. *Manika (Μάνικα)*

Type: Large settlement. Region: Euboia. Nearest village: Nea Artaki. Fieldwork: Rescue excavation. Coastality value: 837.

References: Theocharis 1959, 292–306; *ArchDelt* 37 (1982): B1, 174; Sampson 1985; *ArchDelt* 41 (1986): A, 101–270; Sampson 1988a; *ArchDelt* 42 (1987): B1, 204–207; *ArchDelt* 48 (1993): B1, 194; *ArchDelt* 49 (1994): B1, 295–296; *ArchDelt* 56–59 (2001–2004), B2, 267–268.

Chronology: Early Bronze I – Middle Bronze II.

Description: Large EH settlement now mostly obscured by sea level rise and modern construction. Large cemetery associated with the site (see C129). Rescue excavations found evidence for houses of an EH IIA dating and occupation continued through into MH.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S145. *Mantoudi (Μαντούδι)*

Alternate name: Prophitis Ilias. Type: Settlement. Region: Euboia. Nearest village: Kria Vrisi. Fieldwork: Rescue excavation. Coastality value: 1460.

References: Sampson 1975.

Chronology: Middle Bronze I–II.

Description: Apsidal buildings uncovered with two MH I–II phases of occupation.

S146. *Mantres tou Roussou (Μάντρες του Ρούσσου)*

Alternate name: Kat'Akrotiri. Type: Possible settlement. Region: Cyclades. Nearest village: Amorgos. Fieldwork: Survey. Coastality value: 3517.

References: Tsountas 1898, 166–168; Yiannouli 2002, 1–47.

Chronology: Early Bronze I–IIA.

Description: Survey revealed a great quatity of EC I–II pottery. Architectural features were noted by Tsountas.

S147. *Marathon–Kato Souli (Κάτω Σούλι Μαραθώνα)*

Type: Settlement. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 2813.

References: *ArchDelt* 56–9 (2001–2004): B1, 374–376, 379–381, 385–386.

Chronology: Early Bronze IIA–III (Middle Bronze Age)

Description: Pits and houses (B1 and B2) of EH II date were recovered in a layer of peat during construction work. North of House B2 was a large pit containing EH and MH sherds above a layer with much EH II–III sherds.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S148. *Marathon–Plasi (Πλάσι Μαραθώνα)*

Type: Settlement. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 585.

References: Marinatos 1970, 5; Polychronakou-Sgouritsa *et al.* 2016, 305–315.

Useful information can also be discerned from the excavation webpage: marathonexcavations@arch.uoa.gr

Chronology: Early Bronze IIA – Middle Bronze II (Late Bronze Age)

Description: Stratified deposits dating from EH II through to LH are known. Current excavations reveal a substantial settlement, which appears to have gone out of use in MH II, to be reused for burial thereafter. Evidence also of later Mycenaean settlement.

S149. *Markiani (Μαρκιανή)*

Type: Settlement. Region: Cyclades. Island: Amorgos. Fieldwork: Research excavation. Coastality value: 4156.

References: Marangou *et al.* 2006.

Chronology: Early Bronze I–IIB.

Description: Small fortified EC settlement with occupation over successive phases from EC I–IIB.

Relevant finds: Appendix 3:D (Marine food waste remains from quotidian contexts); Appendix 3:E (Marine food waste remains from ritual or probable ritual contexts); Appendix 4:B (Processing marine molluscs); Appendix 4:C (*Utilitarian uses of marine shell from settlement contexts*); Appendix 5A: **5.1, 5.2, 5.154**.

S150. *Maroudi (Μαρούδι)*

Type: Settlement. Region: Saronic. Island: Salamis. Fieldwork: Survey. Coastality value: 407.

References: Chronique ID2080.

Chronology: Early Bronze IIA.

Description: Survey site, foundations of EH II walls, along with EH II pottery.

S151. *Mastos (Μαστός)*

Type: Settlement. Region: Argolid. Nearest village: Prosimna. Fieldwork: Research excavation. Coastality value: 17859.

References: Säflund 1965, 93–157; Lindblom & Wells 2011; Forsen 2004, 1159–1166.

Chronology: Early Bronze IIA–Middle Bronze III.

Description: Parts of a small settlement atop a hill were excavated with the remains dated to between EH II and MH. Buildings of EH II and EH III.

S152. *Mavro Vouno Grammatikou (Μαύρο Βουνό Γραμματικού)*

Type: Settlement. Region: Attica. Nearest village: Grammatiko. Fieldwork: Rescue excavation. Coastality value: 17458.

References: *ArchDelt* 66 (2011): B1, 126–129.

Chronology: Final Neolithic – Early Bronze I.

Description: Fortified FN – EH I settlement. Extensive circular structure, likely served as a retaining wall.

S153. *Megali Lakka (Μεγάλη Λάκκα)*

Alternative name: Theologos. Type: Settlement. Region: Euboia. Nearest village: Theologos. Fieldwork: Rescue excavation. Coastality value: 20457.

References: *ArchDelt* 39 (1984): B, 125.

Chronology: Early Bronze IIA–IIIB.

Description: Small EH settlement (EH II/III) with the remains of walls and cultural layers.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S154. *Megali Magoula Galatas (Μεγάλη Μαγούλα Γαλατάς)*

Type: Settlement. Region: Argolid. Nearest village: Galatas. Fieldwork: Rescue excavation. Coastality value: 698.

References: Konsolaki–Giannopoulou 2010, 67–76.

Chronology: (Early Bronze III) Middle Bronze I–III.

Description: Fortified MH hilltop site, with several houses found within the enceinte. Perhaps EH III layers, though the bulk of the pottery is MH. See also the later cemetery at the same location (**C137**).

S155. *Megali Velanidia (Μεγάλη Βελανιδιά)*

Type: Settlement. Region: Thessaly. Nearest village: Velanidia. Fieldwork: Rescue excavation. Coastality value: 3510.

References: *ArchDelt* 56–59 (2001–2004): B2, 490–491.

Chronology: Middle Bronze II–III.

Description: Excavation revealed terrace walls and remains of buildings, including an apsidal house. Based on the ceramics, a MH date was advocated to the site, though there are later layers also.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S156. *Megalo Rimbari (Μεγάλο Ριμπάρι)*

Type: Settlement. Region: Attica. Nearest village: Rimbari. Fieldwork: Survey. Coastality value: 18705.

References: Lohmann *et al.* 2002, 1–48; Andrikou 2020a, 5.

Chronology: Final Neolithic.

Description: Site has an enclosure wall and house walls and FN pottery.

S157. *Merenda (Μερέντα)*

Type: Settlement. Region: Attica. Nearest village: Markopoulo. Fieldwork: Rescue excavation. Coastality value: 6870.

References: *ArchDelt* 56–59 (2001–2004) B1, 322–324; 331–336; 345–353; Kakavogianni *et al.* 2016, 437–451.

Chronology: Late Neolithic – Early Bronze IIA.

Description: Settlement remains dating from LN, though EH I and EH II remains were identified over a dispersed area.

Relevant finds: Appendix 4:B (*Processing marine molluscs*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S158. Mesochorio (Μεσοχωριό)

Type: Possible settlement. Region: Crete. Nearest village: Sphendyli. Fieldwork: Rescue excavation. Coastality value: 31528.

References: Mavraki-Balanou 2013, 288–301.

Chronology: Middle Bronze III – Late Bronze I.

Description: Minoan building with at least four rooms dated to MM III–LM I by domestic pottery.

S159. *Midea (Μιδέα)*

Type: Settlement. Region: Argolid. Nearest village: Midea. Fieldwork: Research excavation. Coastality value: 10696.

References: *ArchDelt* 19 (1964): B, 134; Åstrom & Demakopoulou 1986, 19–25; Åstrom *et al.* 1990, 9–22; Demakopoulou *et al.* 1994, 19–41; Demakopoulou *et al.* 1997, 13–32; Demakopoulou *et al.* 2008, 7–30; Demakopoulou *et al.* 2009, 7–30; Demakopoulou & Divari–Valakou 2010, 31–44; Demakopoulou *et al.* 2010, 7–32;

Chronology: Late Neolithic – Late Bronze Age.

Description: Acropolis of Midea with occupation at the summit of the hilltop, as well as the lower terraces. Substantial MH evidence with a probable Mycenaean palace later.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EC (*Manuports and miscellany*).

S160. *Mikre Vigla (Μικρή Βίγλα)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Survey. Coastality value: 1271.

References: Hadjianastasiou & Barber 1989, 63–162.

Chronology: Early Bronze III – Middle Bronze III.

Description: Survey of the architectural features revealed a mostly MC settlement, with evidence for possible earlier activity (Appendix 5B, Fig. 22).

S161. *Mikro Vouni (Μικρό Βουνί)*

Type: Settlement. Region: North Aegean. Island: Samothrace. Fieldwork: Research excavation. Coastality value: 894.

References: *ArchDelt* 27 (1972): B2, 547; Matsas 1987, 499–502; Syrides *et al.* 2009, 39–54.

Chronology: Late Neolithic – Late Bronze I.

Description: Tell site with evidence of continuous occupation from LN until the start of the LBA. Houses and architecture of all periods were noted.

S162. *Mikrogiali (Μικρογιάλι)*

Type: Settlement. Region: Cyclades. Island: Andros. Fieldwork: Survey. Coastality value: 6359.

References: Televantou 2008, 43.

Chronology: Final Neolithic.

Description: Surface material and traces of walls dated to the FN.

S163. *Mikrothives (Μικροθήβες)*

Type: Settlement. Region: Thessaly. Nearest village: Mikrothives. Fieldwork: Rescue excavation. Coastality value: 4577.

References: ArchDelt 55 (2000): B2, 476; *ArchDelt* 56–59 (2001–2004): B2, 508–510; 484–485; Adrymi–Sismani 2016, 395–416.

Chronology: Final Neolithic – Early Bronze I.

Description: FN–EB transitional settlement excavated in advance of road construction. Two building complexes with wattle and daub huts.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S164. *Minoa (Μινώα)*

Type: Settlement. Region: Cyclades. Nearest village: Amorgos. Fieldwork: Research excavation. Coastality value: 12469.

References: Broodbank 2000, 123, 146, 208.

Chronology: Late Neolithic.

Description: Later historical site with evidence for LN occupation beneath. Mentioned in Broodbank (2000) though no further references were provided there.

S165. *Mitrou (Μήτρου)*

Type: Settlement. Region: Phthiotis. Nearest village: Tragana. Fieldwork: Research excavation. Coastality value: 256.

References: Kramer–Hajos & O'Neill 2008, 163–250; *ArchDelt* 65 (2010): B1, 1034–1037; *ArchDelt* 66 (2011): B1, 501–502; Hale 2016, 243–295.

Chronology: Early Bronze IIB – Late Bronze Age.

Description: Site is mostly LH, though deeper excavation revealed MH and EH occupation, in particular an EH IIB tiled structure. Continuity of occupation from EH III to MH II. Rare survival of a boat dates to MH I.

Relevant finds: Appendix 4:A (*Murex dye production*).

S166. *Mochlos (Μόχλος)*

Type: Settlement. Region: Crete. Nearest village: Mochlos. Fieldwork: Research excavation. Coastality value: 462.

References: Seager 1909, 273–303; Soles 1978, 4–15; Soles 1992; Soles & Davaras 1992, 413–445; Soles & Davaras 1994, 391–436; Soles & Davaras 1996, 175–230.

Chronology: (Final Neolithic) Early Bronze IIA – Late Bronze Age.

Description: Excavation revealed ephemeral traces of FN habitation, before an important south–facing EM settlement. Scattered deposits of settlement of MM IB–II before a more substantial MM III–LM I town is established. Destroyed by fire in LM IB.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appedix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*); Appendix 5A: **5.141, 5.156; 5.157, 5.158, 5.159, 5.160**.

S167. *Modi (Μόδι)*

Type: Settlement. Region: Saronic. Island: Modi. Fieldwork: Rescue excavation. Coastality value: 694.

References: Konsolaki–Giannopoulou 2007b, 171–198; Konsolaki–Giannopoulou 2011, 259–278.

Chronology: Early Bronze IIA.

Description: Small islet off the coast of Poros, which has traces of a small EH IIA settlement with imported EC IIA ceramics.

S168. *Molyvopyrgo (Μολυβόπυργος)*

Type: Settlement. Region: Macedonia. Nearest village: Geraki. Fieldwork: Research excavation. Coastality value: 320.

References: Heurtley & Radford 1927/8, 156–186; Heurtley 1939, 10–16; Leekley & Evstratiou 1980, 89.

Chronology: Early Bronze I – Late Bronze I.

Description: Tell site with traces of EBA mud–brick houses and later MBA walls. The LBA layers are much slighter, indicating that the site was not as significant later.

S169. *Moschato (Μοσχάτο)*

Type: Settlement. Region: Attica. Nearest village: Mochato. Fieldwork: Rescue excavation. Coastality value: 1382.

References: *ArchDelt* 65 (2010): B1, 316–317; Chrysoulaki *et al.* 2020, 299.

Chronology: (Final Neolithic) Early Bronze I–IIA.

Description: First layer is 'proto EB' (FN/EB I). Second phase is EH I. Rectangular building and ceramics characteristic of phase. Third phase is EH II. A large two–storey building and a paved area was reported.

S170. *Mount Kynthos (Λόφος Κύθνου)*

Type: Settlement. Region: Cyclades. Nearest village: Delos. Fieldwork: Research excavation. Coastality value: 3934.

References: Plassart 1928, 11; Scholes 1956, 11; Doumas 1972 162; MacGillivray 1980, 3–45; Barber 1981, 17; Alram-Stern 2004, 871.

Chronology: Early Bronze IIA–III.

Description: A fortification wall protected small rounded houses separated by narrow passages.

S171. *Mourteri (Μουρτερή)*

Type: Possible settlement. Region: Euboia. Nearest village: Mourteri. Fieldwork: Rescue excavation. Coastality value: 1484.

References: Sampson 1978, 245–262.

Chronology: Early Bronze IIA.

Description: Apsidal EH II building with floor layers and part of another building excavated. A single-phase settlement.

S172. *Moutsouna (Μουτσούνα)*

Type: Possible settlement. Region: Dodecanese. Nearest village: Karpathos. Fieldwork: Rescue excavation. Coastality value: 3017.

References: Melas 1985, 69.

Chronology: (Final Neolithic); Middle Bronze III – Late Bronze I.

Description: Traces of ancient structures and Minoan pottery, such as conical cups on the terraces.

S173. *Mycenae (Μυκήναι/ Μυκήνες)*

Type: Settlement. Region: Argolid. Nearest village: Mykines. Fieldwork: Research excavation. Coastality value: 12469.

References : Wace *et al.* 1921, 1–434; Wace 1949; Wace 1950, 203–228; Wace 1955, 175–189; Mylonas 1957; Wace 1957, 195–196; Mylonas 1983; French & Shelton 2005, 175–184; Iakovidis 2006; Iakovidis 2013.

Chronology: (Late Neolithic – Middle Bronze I); Middle Bronze II – Late Bronze III.

Description: Famous Mycenaean citadel with traces of earlier habitation. Neolithic evidence is mostly ceramic, though concentration of EH pottery on slopes hints at substantial EH settlement underneath. MH architecture is scant, though walls were noted around the Lion's gate. Later construction would have destroyed any existing earlier phases.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 5A: **5**.**204**.

S174. *Myrina (Μύρινα)*

Type: Settlement. Region: North Aegean. Island: Lemnos. Fieldwork: Research excavation. Coastality value: 915.

References: *ArchDelt* 27 (1973): B2, 599–600; *ArchDelt* 43 (1988): B2, 465; *ArchDelt* 54 (1999): B2, 763–764; *ArchDelt* 41 (1986): B, 198; Dova 2008, 141–158.

Chronology: Final Neolithic – Early Bronze IIA.

Description: Evidence of a settlement with phases from FN to the EH IIA. Early phases have affinities with Poliochni and Kum Tepe. The EBA settlement consists of large buildings, a fortification and a granary.

Relevant finds: Appendix 4:B (*Processing marine molluscs*).

S175. *Nea Erythraia (Νέα Ερυθραία)*

Type: Settlement. Region: Attica. Nearest village: Nea Erythraia. Fieldwork: Rescue excavation. Coastality value: 22661

References: *ArchDelt* 65 (2010): B1, 142–148, 206.

Chronology: Final Neolithic – Early Bronze IIA.

Description: EH I–II settlement. At least four timber framed huts from EH I, with ten pebbled surfaces representing others. Some FN evidence also. Three excavations undertaken revealed an extensive area of occupation.

S176. *Nea Makri (Νέα Μάκρη)*

Type: Settlement. Region: Attica. Nearest village: Nea Makri. Fieldwork: Rescue excavation. Coastality value: 668.

References: Theocharis 1954, 114–122; *ArchDelt* 35 (1980): B1 82–84; Pantelidou Gofa 1991; 1995; Andrikou 2020a, 4.

Chronology: (Early Neolithic – Middle Neolithic) Late Neolithic – Early Bronze III.

Description: Neolithic area of habitation, before slight shift closer to the coast in the EH period. Much of the EH settlement cannot now be located and has likely been destroyed by coastal development in the area.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S177. *Nea Styra–Lefka (Νέα Στύρα–Λεύκα)*

Type: Possible settlement. Region: Euboia. Nearest village: Nea Stira. Fieldwork: Rescue excavation. Coastality value: 580.

References: Sampson 1985, 373; Kosma 2019, 162–182.

Chronology: Early Bronze IIA; (Middle Bronze).

Description: Wall remains, EH and MH sherds as well as a cache of Cycladic figurines found in the area.

S178. *Nerokourou (Νεροκούρος)*

Type: Settlement/villa. Region: Crete. Nearest village: Nerokouros. Fieldwork: Rescue excavation. Coastality value: 3091.

References: *ArchDelt* 32 (1977): B, 329–330; *ArchDelt* 33 (1978): B, 369–370; *ArchDelt* 34 (1979): B, 392–393; Tzedakis & Sacconi 1989; Nowicki 2014, 238.

Chronology: Final Neolithic – Early Bronze I; Middle Bronze III – Late Bronze I.

Description: FN I and FN II settlement and remains of a Neopalatial villa.

S179. *Nisi Kheliou (Νησί Χέλου)*

Type: Probable settlement. Region: Argolid. Nearest village: Porto Heli. Fieldwork: Survey. Coastality value: 987.

References: Jameson *et al.* 1994, 428.

Chronology: Early Bronze IIB.

Description: EH site reported at Nisi Kheliou after being bulldozed. The presence of EH roof tiles indicate the likely presence of structures, though further investigation would be needed to determine the nature and specific dating of the site.

S180. *Okthonia (Οκτωνιά)*

Type: Settlement. Region: Euboia. Nearest village: Okthonia. Fieldwork: Rescue excavation. Coastality value: 1051.

References: *ArchDelt* 31 (1976): B1, 155.

Chronology: Early Bronze IIA.

Description: Building remains (including an apsidal wall) associated with EH II pottery.

S181. *Olous–Mavrikyano (Ολούς/Ελούς Μαυρικιανό)*

Type: Probable settlement. Region: Crete. Nearest village: Mavrikyano. Fieldwork: Rescue excavation. Coastality value: 1144.

References: Myers *et al.* 1992, 219–220.

Chronology: (Early Bronze II) Middle Bronze III.

Description: Scant traces of a settlement now covered by development. Even scantier traces of EM occupation in the vicinity, though no associated architecture.

S182. *Olynthos (Όλυνθος)*

Type: Settlement. Region: Macedonia. Nearest village: Olynthos. Fieldwork: Research excavation. Coastality value: 16119.

References: Robinson 1929, 53–76; Mylonas 1929; Heurtley 1939, 8–10.

Chronology: Late Neolithic – Early Bronze I.

Description: Trial soundings to the south of the Classical site revealed a Neolithic settlement. Likely in use for three phases, between roughly LN, FN and into EB I

Relevant finds: Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S183. *Ovriokastro (Οβριόκαστρο Αττικής)*

Type: Possible settlement. Region: Attica. Nearest village: Keratea. Fieldwork: Survey. Coastality value: 20456.

References: Nazou 2014, 247.

Chronology: Final Neolithic–Early Bronze I

Description: Surface finds of FN–EH I pottery and probable evidence of mining in the area.

S184. *Pacheia Ammos–Pefka (Παχειά Άμμος)*

Type: Workshop/settlement. Region: Crete. Nearest village: Pacheia Ammos. Fieldwork: Rescue excavation. Coastality value: 819.

References: *ArchDelt* 60 (2005): B2, 1055–1056; Apostolakou *et al.* 2016, 199–208.

Chronology: Middle Bronze II.

Description: MM IIB architectural evidence, with high quantities of murex shells. It is certainly a murex dye processing workshop with evidence of dying vats.

Relevant finds: Appendix 4:A (*Murex dye production*).

S185. *Palaia Kokkinia (Παλαιά Κοκκινιά)*

Type: Settlement. Region: Attica. Nearest village: Kokkinia. Fieldwork: Rescue excavation. Coastality value: 6575.

References: Theocharis 1951, 93–116.

Chronology: Early Bronze IIA.

Description: Settlement noted, along with pits. Large bothroi, some inside houses.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S186. *Palaikastro Kastro (Παλαίκαστρο Καστριού)*

Type: Settlement. Region: Crete. Nearest village: Palaikastro. Fieldwork: Survey. Coastality value: 1708.

References: Nowicki 2014, 86–87.

Chronology: Early Bronze I.

Description: Survey revealed an extensive FN II settlement with later EM I pottery.

S187. *Palaikastro Lidia Kefala South (Παλαίκαστρο Λύδια Κεφάλα)*

Type: Possible settlement. Region: Crete. Nearest village: Palaikastro. Fieldwork: Survey. Coastality value: 6714.

References: Nowicki 2014, 242–243.

Chronology: Early Bronze I.

Description: Survey uncovered an FN II pottery scatter. A second site contained architectural remains and FN II–EM I pottery.

S188. *Palaikastro Maridathi (Παλαίκαστρο Μαριδάτη)*

Type: Possible settlement. Region: Crete. Nearest village: Palaikastro. Fieldwork: Survey. Coastality value: 3579.

References: Nowicki 2014, 85–86.

Chronology: Early Bronze I.

Description: Extensive EM I settlement found through survey with FN II sherd scatters also.

S189. *Palaikastro (Παλαίκαστρο)*

Alternate name: Roussolakos. Type: Large settlement. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation. Coastality value: 415.

References: Bosanquet 1902, 286–316; Bosanquet *et al.* 1902/03, 274–387; Dawkins & Currelly 1903–4, 193–231; Dawkins *et al.* 1904–05, 258–308; Dawkins 1905–6, 1–8; Bosanquet & Dawkins 1923; Hutchinson *et al.* 1939, 38–59; Sackett *et al.* 1965, 248–315; Sackett & Popham 1970, 203–242; MacGillivray *et al.* 1988, 259–82; MacGillivray *et al.* 1989, 416–45; MacGillivray *et al.* 1991, 121–147; MacGillivray *et al.* 1992, 121–152; MacGillivray *et al.* 1998, 221–268; Knappett & Cunningham 2003, 107–187; Knappett *et al.* 2007, 153–217; Knappett & Cunningham 2012.

Chronology: Early Bronze IIA – Late Bronze Age.

Description: Long–lived Minoan coastal town. First structures date to EM II with a gap between EM III–MMIA. Large buildings are evident from MM IIB onwards, with a destruction in MM IIIA. Most structures date to the MMIIIB–LM IB. Destruction by fire and abandonment at the end of LM IB (Appendix 5B, Fig. 23).

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*); Appendix 5A: **5.18, 5.19, 5.20, 5.22, 5.33, 5.40, 5.44, 5.119, 5.142, 5.201**.

S190. *Palaioloutra (Παλαιόλουτρα)*

Type: Settlement. Region: Crete. Nearest village: Agios Vasilios. Fieldwork: Rescue excavation. Coastality value: 27640.

References: *ArchDelt* 55 (2000): B2, 1031–1032.

Chronology: Middle Bronze I–Late Bronze Age.

Description: MM II to LM IIIB settlement, with further MM I and Mycenaean building remains opposite on the eastern flank of the Tsikouriana hill.

S191. *Palamari (Παλαμάρι)*

Type: Settlement. Region: North Aegean. Island: Skyros. Fieldwork: Research excavation. Coastality value: 767.

References: Parlama 1984; 122–127; Theochari & Parlama 1986, 51–55; Parlama *et al.* 2010, 281–289; *ArchDelt* 38 (1983): B1, 141, 150; *ArchDelt* 66 (2011): B2, 1071.

Chronology: Early Bronze IIB – Middle Bronze III.

Description: Fortified settlement dating between EB IIB and the end of the MBA. Settlement was organised with a proto–urban character, including drainage systems.

S192. *Paliampela (Παλιάμπελα)*

Type: Settlement. Region: Thessaly. Nearest village: Paliampela. Fieldwork: Rescue excavation. Coastality value: 3015.

References: Kotsakis *et al.* 2005, 309–316.

Chronology: Late Neolithic.

Description: Tell site with traces of LN houses.

S193. *Palio Mitato (Παλιό Μιτάτο)*

Type: Possible settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 930.

References: Melas 1985, 54.

Chronology: Middle Bronze II – Late Bronze I.

Description: Traces of walls, MM–LM ceramics and burned debris noted during excavation.

S194. *Palioskala (Παλιόσκαλα)*

Type: Settlement. Region: Thessaly. Nearest village: Kalamaki. Fieldwork: Rescue excavation. Coastality value: 21322.

References: *ArchDelt* 56–59 (2001–2004): B2, 547–549; Touphexis 2016, 361–380.

Chronology: Late Neolithic – Final Neolithic.

Description: Now located on the east bank of Lake Karla, the settlement is a prehistoric *magoula* with an exterior circuit wall, with evidence of houses dating to LN and FN.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S195. *Pallini (Παλλήνη)*

Type: Settlement. Region: Attica. Nearest village: Pallini. Fieldwork: Rescue excavation. Coastality value: 16780.

References: *ArchDelt* 67 (2012): B1, 52–59.

Chronology: Final Neolithic – Early Bronze I; Middle Bronze II.

Description: Rescue excavation revealed a FN settlement consisting of fix wooden buildings. MH settlement in the same area consisted of several stone built structures.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S196. *Panagia i Antilalousa (Παναγία η Αντιλαλούσα)*

Type: Settlement. Region: Cyclades. Island: Gyaros. Fieldwork: Rescue excavation. Coastality value: 22661.

References: ID4762.

Chronology: Early Bronze IIA–B; Middle Bronze II–III.

Description: Fortified settlement atop highest point on the small island. Evidence from structures, ceramics, domestic assemblages and imported pottery from the late MBA suggest both EC and later MC occupation of the site.

S197. *Pani Hill (Λόφος Πανί)*

Type: Settlement. Region: Attica. Nearest village: Alimos. Fieldwork: Rescue excavation. Coastality value: 4238.

References: *ArchDelt* 55 (2000): B1, 105–106.

Chronology: Final Neolithic – Early Bronze IIA.

Description: LN – EH II fortified site with a circuit wall found around 60m from the summit and wall foundations found inside the enclosed area.

S198. *Panormos (Πάνορμος)*

Alternate name: Korfari ton Amydalion. Type: Settlement. Region: Cyclades. Nearest village: Naxos. Fieldwork: Research excavation. Coastality value: 1742.

References: *ArchDelt* 19 (1964), 411–412; Doumas 1972a, 156, 164–165; 1972b, 227–230; 1988, 21–29; Angelopoulou 2003, 159–190; 2008, 149–164; 2014.

Chronology: Early Bronze IIA – IIB.

Description: Fortified site, situated on the SE coast of Naxos. Early architectural remains may date to EC I/II (Kampos). Main phase dates to EC IIB (Kastri).

S199. *Papadiokampos (Παπαδιόκαμπος)*

Type: Settlement. Region: Crete. Nearest village: Papadiokampos. Fieldwork: Rescue excavation. Coastality value: 849.

References: *ArchDelt* 56–59 (2001–2004): B5, 506; Sofianou & Brogan 2010, 134–142; 2013, 70–80; *ArchDelt* 64 (2009): B2, 922;

Chronology: Middle Bronze III – Late Bronze IB.

Description: Small coastal settlement with strong evidence of sea utilisation. Most phases of the settlement date to LM IB.

Relevant finds: Appendix 4:A (*Murex dye production*).

S200. *Paradimi (Παραδημή)*

Type: Settlement. Region: Macedonia. Nearest village: Paradimi. Fieldwork: Rescue excavation. Coastality value: 14042.

References: Bakalakis & Sakellariou 1981; Andreou *et al.* 1996, 592;

Chronology: Late Neolithic (Final Neolithic)

Description: LN toumba settlement. Information is scanty but a wide range of ceramics attest to occupation beginning in the LN and possibly continuing into the FN.

S201. *Paroikia (Παροικία)*

Type: Settlement. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 952.

References: Scholes 1956, 12, 14, 15, 20, 22 32, 34; Doumas 1972, 165; Overbeck, 1989; Schallin 1993, 21.

Chronology: Early Bronze III–Late Bronze I.

Description: Main settlement on Paros in MBA. Building remains entirely covered by modern chora.

S202. *Partheni (Παρθένι)*

Type: Settlement. Region: Dodecanese. Island: Leros. Fieldwork: Rescue excavation. Coastality value: 652.

References: Sampson 2003, 87–95.

Chronology: Final Neolithic.

Description: Small settlement, which excavator argues is a FN fishing village.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S203. *Pavlopetri (Παυλοπέτρι)*

Type: Settlement. Region: Laconia. Nearest village: Viglafia. Fieldwork: Underwater excavation. Coastality value: 84.

References: Harding *et al.* 1969, 113–142; Gallou & Henderson 2012, 79–104.

Chronology: Early Bronze IIA – Late Bronze I.

Description: Underwater site. Most buildings are likely to be LBA but some EBA deposits were located.

S204. *Penteli–Kifissia (Πεντέλη Κηφισιάς)*

Type: Possible settlement. Region: Attica. Nearest village: Kifissia. Fieldwork: Rescue excavation. Coastality value: 27449.

References: Andrikou 2020a, 5, 10; Palaiologos & Stephanopoulou 2020, 127.

Chronology: Final Neolithic–Early Bronze I.

Description: Scant traces of FN–EH I habitation on the W and NW site of Mt. Penteli.

S205. *Pera Galini (Πέρα Γαλήνοι)*

Type: Settlement. Region: Crete. Nearest village: Sises. Fieldwork: Rescue excavation. Coastality value: 678.

References: *ArchDelt* 56–59 (2001–2004): B5, 468–473; *ArchDelt* 60 (2005): B2, 1046–1047.

Chronology: Middle Bronze I – III.

Description: Successive floors with MM IB–IIA pottery between them. Domestic character to the settlement.

S206. *Petalota (Πεταλωτά)*

Type: Probable settlement. Region: Crete. Nearest village: Mesa Potamoi. Fieldwork: Survey. Coastality value: 89076.

References: Nowicki 2014, 179–180.

Chronology: Final Neolithic.

Description: Site comprises of FN I pottery and possibly two houses found through survey.

S207. *Petras Hill 1 (Πετράς)*

Type: Settlement. Region: Crete. Nearest village: Sitia. Fieldwork: Research excavation. Coastality value: 970.

References: Papadatos 2007, 154–167; Papadatos 2008, 261–275; Papadatos 2012; Tsipopoulou 2012.

Chronology: Early Bronze IIA – Late Bronze Age.

Description: Settlement overlooks the sea from a small plateau. The settlement was likely established in EM IIA, before becoming of a palatial character in the Protopalatial period.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 5A: **5**.**26, 5**.**216**.

S208. *Petras Kephala (Κεφάλα Πετρά)*

Type: Settlement. Region: Crete. Nearest village: Sitia. Fieldwork: Research excavation. Coastality value: 979.

References: Papadatos 2007, 154–167; Papadatos 2008, 261–275; Papadatos 2012; Tsipopoulou 2012; Nowicki 2014, 154–155.

Chronology: Final Neolithic – Early Bronze I.

Description: Extensive FN II–EM I settlement, with traces of earlier FN material.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*); Appendix 5A: **5**.**153**.

S209. *Petromagoula (Πετρομαγούλα)*

Type: Settlement. Region: Thessaly. Nearest village: Aivaliotika. Fieldwork: Rescue excavation. Coastality value: 1137.

References: Hatziangelakis 1984, 75–85.

Chronology: Final Neolithic.

Description: Small FN (Rachmani) settlement.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S210. *Pevkakia (Πευκάκια)*

Type: Settlement. Region: Thessaly. Nearest village: Aivaliotika. Fieldwork: Research excavation. Coastality value: 165.

References: Weisshaar 1989; Maran 1992; Christmann 1996.

Chronology: Late Neolithic – Late Bronze Age.

Description: Important coastal settlement with long–range contacts throughout Bronze Age. Several layers of suceeding EH and MH strata with Balkan, Trojan and Cycladic imports, while Minoan imports are evident from MM I–II. Later Myceaean settlement also.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S211. *Phylakopi (Φυλακωπή)*

Type: Settlement. Region: Cyclades. Island: Melos. Fieldwork: Research excavation. Coastality value: 476.

References: Atkinson *et al.* 1904; Dawkins & Droop 1911; Barber 1974, 1–53; Renfrew *et al.* 2007; Barber 2008, 43–222; Barber forthcoming.

Chronology: (Early Bronze I); Early Bronze IIA–Late Bronze Age.

Description: Cycladic 'type–site' for MBA. Occupied from EC II period, right through until end of the LBA. Possibility the site was inhabited in EC I based on ceramic deposits, though no architectural elements are associated.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 5A: **5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16, 5.30, 5.31, 5.32, 5.37, 5.38, 5.39, 5.47, 5.48, 5.49, 5.50, 5.51, 5.52, 5.53, 5.90, 5.115, 5.130, 5.131, 5.166, 5.167, 5.183, 5.184, 5.190, 5.191**.

S212. *Phyrrhoyes (Φυρογιές)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Research excavation. Coastality value: 1226.

References: *ArchDelt* 17 (1961–2): A, 138; Doumas 1972b, 152; Doumas 1977, 25.

Chronology: Early Bronze IIA.

Description: Fortification walls were recorded, though this site would benefit from re–evaluation.

S213. *Pigadia (Πηγάδια)*

Type: Settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Research excavation. Coastality value: 906

References: Melas 1985, 161; *ArchDelt* 60 (2005): B2, 1163–1164.

Chronology: Final Neolithic–Early Bronze IIA; Middle Bronze II–Late Bronze Age

Description: Foundaton walls along with cultural fills date the settlement to between the FN and EBA. Melas also attests to a Minoan and Mycenaean settlement closeby.

Relevant finds: Appendix 4:A (*Murex dye production*).

S214. *Pigi Athinas (Πηγή Αθηνάς)*

Type: Settlement. Region: Thessaly. Nearest village: Nei Poroi. Fieldwork: Rescue excavation. Coastality value: 1846.

References: *ArchDelt* 56–59 (2001–2004): B3a, 212–214; *ArchDelt* 64 (2009): B2, 701–704.

Chronology: Late Neolithic–Final Neolithic.

Description: Rescue excavation revealed Late Neolithic occupation. Few structures have been uncovered and a posthole, dated by radiocarbon between 3620 and 3360 BCE confirms the presence of FN layers, but the remains were disturbed by a BA *tumulus*.

Relevant finds: Appendix 4:B (*Processing marine molluscs*).

S215. *Piskofekalo (Πισκοκέφαλο)*

Type: Villa. Region: Crete. Nearest village: Sitia. Fieldwork: Research excavation. Coastality value: 1384.

References: Hood 1954, 18.

Chronology: Middle Bronze III–Late Bronze I.

Description: Neopalatial villa site, though little has been published about the site.

S216. *Plaka (Πλάκα)*

Type: Settlement. Region: Cyclades. Island: Andros. Fieldwork: Rescue excavation. Coastality value: 631.

References: *ArchDelt* 55 (2000): B2, 960–964; *ArchDelt* 56–9 (2001–2004): B6, 107. *ArchDelt* 60 (2005): B2, 916–917; *Ergon* 2009, 57–63.

Chronology: Early Bronze III–Middle Bronze II.

Description: Late EC and MC settlement, with four buildings identified, one preserved to first floor level along with paved streets. Not known if the petroglyphs are EC III or Neolithic.

Relevant finds: Appendix 5A: **5**.**127**.

S217. *Plakalona (Πλακάλωνα)*

Type: Settlement. Region: Cyclades. Island: Seriphos. Fieldwork: Rescue excavation. Coastality value: 4608.

References: *ArchDelt* 62 (2007): B2, 1161–1163; Philaniotou *et al.* 2011, 157–164.

Chronology: Early Bronze IIA (Middle Bronze Age).

Description: Rescue excavations unveiled architectural remains, mostly EC II but also some MC pottery without architectural fills.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S218. *Plato's Academy (Ακαδημία Πλάτωνος)*

Type: Settlement. Region: Attica. Nearest village: Akademia Platanos. Fieldwork: Rescue excavation. Coastality value: 3362.

References: Stavropoulos 1955, 53–57; 1956, 45–54; *ArchDelt* 35 (1980), 41; *ArchDelt* 40 (1985), 33–34; *ArchDelt* 42 (1987), 20–21; Nazou 2014, 345; Eliopoulos 2020, 349–354.

Chronology: (Final Neolithic – Early Bronze IIA) Early Bronze IIB – Middle Bronze I.

Description: Semi–ellipsoid building, possibly standalone but also possibly part of dispersed settlement. Three rooms and two pits, found in association with the building.

S219. *Poliochni (Πολιόχνη)*

Type: Settlement. Region: North Aegean. Island: Lemnos. Fieldwork: Research excavation. Coastality value: 776.

References: Bernabô–Brea 1964; 1976; Di Vita 1997, 17–19, 41–42, 64–65; Benvenuti 2016, 383–388.

Chronology: Final Neolithic – Late Bronze Age.

Description: Main settlement of the island with well established ceramic sequence. It appears to have been a hub for north Aegean exchange in metals and positioned between the Aegean and Anatolian cultural spheres.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S220. *Poros–Katsambas (Πόρος–Κατσαμπά)*

Type: Settlement. Region: Crete. Nearest village: Heraklion. Fieldwork: Rescue excavation. Coastality value: 1635.

References: Alexiou 1953, 299–308; Alexiou 1954, 369–376; *ArchDelt* 48 (1993): B2, 450–459; *ArchDelt* 51 (1996): B2, 630–632; Serpetsidaki 2013, 164–172.

Chronology: Early Bronze I–Late Bronze Age.

Description: Protopalatial buildings (MM I–II) founded on bedrock were noted in the excavations, with further building remains of Neopalatial date on Tripiti hill. Evidence points to a possible function as a port, as well as a craft centre. Little is published about the prepalatial settlement, other than the pottery.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*).

S221. *Porto Boufalo (Πόρτο Μπούφαλο)*

Type: Probable settlement. Region: Euboia. Nearest village: Mpoufalo. Fieldwork: Rescue excavation. Coastality value: 619.

References: Sampson 1988a, 163–181; Sampson 1985, 372; Fachard 2012, 331: no.154.

Chronology: Early Bronze IIA.

Description: Submerged EH II buildings noted on the beach in the center of bay.

S222. *Pousi Kalogeri (Πούσι Καλογέρι)*

Type: Settlement. Region: Attica. Nearest village: Vravrona. Fieldwork: Rescue excavation. Coastality value: 3608.

References: Hope–Simpson 1979, 212; Diamant & Traill 1986, 117–129; Nazou 2014, 351.

Chronology: (Early –Middle Neolithic) Late Neolithic – Final Neolithic; (Early Bronze IIA)

Description: Small LN settlement with scant traces of earlier and later occupation.

S223. *Prasa (Πρασσάς)*

Type: Villa. Region: Crete. Nearest village: Heraklion. Fieldwork: Rescue excavation. Coastality value: 4664.

References: Platon 1951b, 246–257.

Chronology: Middle Bronze I – Late Bronze I.

Description: Villa site close to modern Heraklion, with buildings and traces of fresco remains.

S224. *Priniatikos Pyrgos (Πρινιάτικος Πύργος)*

Type: Settlement. Region: Crete. Nearest village: Istron. Fieldwork: Research excavation. Coastality value: 705.

References: Hayden & Tsipopoulou 2012, 507–584; Molloy *et al.* 2014, 307–358.

Chronology: Final Neolithic–Early Bronze IIB; Middle Bronze II–Late Bronze I.

Description: FN–EM I earliest deposits, with successive floors from FN to EM IIB. Evidence for a MM II shrine with walls and associated *rhyta* fragments, with continuity into LM IA (Appendix 5B, Fig. 24).

S225. *Prokalissi (Προκαλήσι)*

Type: Possible settlement. Region: Attica. Nearest village: Merenta. Fieldwork: Rescue excavation. Coastality value: 8183.

References: *ArchDelt* 61 (2006): B, 175; Andrikou 2020a, 13.

Chronology: Final Neolithic–Early Bronze I

Description: Small EH settlement destroyed by ploughing.

S226. *Proskynas (Προσκυνάς)*

Type: Settlement. Region: Phthiotis. Nearest village: Proskinas. Fieldwork: Rescue excavation. Coastality value: 2628.

References: Zachou 2004; Papathanasiou, Zachou & Richards 2009, 223–235; Psimogiannou 2012, 189.

Chronology: (Final Neolithic); Early Bronze I–Late Bronze Age.

Description: EH settlement, with foundations of houses, courtyards, storage areas, possibly workshops recovered, which overlies a FN cemetery. MH and LH settlement located to the west side of the site.

Relevant finds: Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S227. *Prosymna (Πρόσυμνα)*

Alternate name: Argive Heraion. Type: Settlement. Region: Argolid. Nearest village: Prosimna. Fieldwork: Research excavation. Coastality value: 20156.

References: Blegen 1937; Felten 1986, 25; Phelps 2004, 105–107.

Chronology: (Late Neolithic) Early Bronze IIA–B (Middle Bronze Age – Late Bronze Age).

Description: EH II building remains were reported while there was reported LN activity in a closeby cave. The area became covered with an extensive LH cemetery. It is not clear how extensive MH occupation was in the area, though ceramics dated to this period were recovered.

S228. *Provatsa (Προβάτσα)*

Type: Settlement. Region: Attica. Island: Makronisos. Fieldwork: Research excavation. Coastality value: 649.

References: Spitaels 1982, 155–158.

Chronology: Early Bronze I–IIA.

Description: EH settlement at Provatsa on the W side of the island, fronting Laurion and Thorikos. The houses were built into gullies running upslope, with three phases were noted in one house.

S229. *Psathi (Ψαθί)*

Type: Settlement? Region: Crete. Nearest village: Psathi. Fieldwork: Rescue excavation. Coastality value: 57996.

References: *ArchDelt* 55 (2000): B2, 1027–1028.

Chronology: Early Bronze I–IIB.

Description: Disturbed remains of a settlement associated with prepalatial ceramics.

S230. *Pseira (Ψείρα)*

Type: Settlement Region: Crete. Nearest village: Pseira. Fieldwork: Research excavation. Coastality value: 801.

References: Seager 1910; Betancourt & Davaras 1988b, 207–225; Betancourt *et al.* 1995; Betancourt *et al.* 1998; Betancourt *et al.* 2004; Floyd *et al.* 2015.

Chronology: Final Neolithic–Late Bronze I.

Description: Scattered traces of FN–EMIIB remains, before more substantial remains of the EM III–MM I period. House remains from MMIB–MM II are present, before the town expanded in LM I, with over sixty houses. Destruction and abandonment at the end of LM IB.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and Miscellany*).

S231. *Psorari (Ψωράρη)*

Type: Settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 1616.

References: Melas 1985, 57–58.

Chronology: Middle Bronze III–Late Bronze Age.

Description: House walls and pottery were recovered during trial excavations, with a MM III–LM III phasing.

S232. *Pteleon (Πτελεός)*

Type: Possible settlement. Region: Thessaly. Nearest village: Pteleo/Ftelio. Fieldwork: Research excavation. Coastality value: 1223.

References: Verdelis 1951; 1952; Maran 1992a, 280–282.

Chronology: Middle Bronze II–Late Bronze Age.

Description: House remains. Dated by Maran to MH II based on pedastalled Minyan bowls.

S233. *Pyrgos (Πύργος)*

Type: Settlement. Region: Cyclades. Island: Paros. Fieldwork: Survey. Coastality value: 819.

References: Tsountas 1898–99, 170, 174; Doumas 1972, 151–152, 164.

Chronology: Early Bronze IIA.

Description: Tsountas mentioned architectural remains close to the cemetery at Pyrgos, which have pottery of a later date than the cemetery, likely to be EC IIA.

S234. *Pyrgos–Braonas (Πύργος Βραυρώνας)*

Type: Possible settlement. Region: Attica. Nearest village: Markopoulo. Fieldwork: Rescue excavation. Coastality value: 5829.

References: Theocharis 1953, 140–148; Nazou 2014, 353; Andrikou 2020a, 5.

Chronology: Early Bronze I–IIA.

Description: Located inland in the Mesogeia plain. Evidence for a small settlement.

S235. *Raos (Ραός)*

Type: Settlement/Villa. Region: Cyclades. Island: Thera. Fieldwork: Rescue excavation. Coastality value: 6773.

References: *ArchDelt* 56–59 (2001–2004): B6, 105–106.

Chronology: Late Bronze I.

Description: Small LC IA settlement or villa with painted plaster walls in one of the buildings. Could be a standalone villa or part of the suburbs of Akrotiri as it is close, only a few km to NW.

Relevant finds: Appendix 4:A (*Murex dye production*).

S236. *Raphina (Ραφήνα)*

Type: Settlement. Region: Attica. Nearest village: Raphina. Fieldwork: Rescue excavation. Coastality value: 840.

References: Theocharis 1951, 77–92; 1952, 129–151; 1953, 105–118; 1955, 109–117.

Chronology: Early Bronze IIA–III (Middle Bronze Age).

Description: Fortification wall of a likely EH II date recorded, as well as EH III houses. Bothroi contained EH III to MH I pottery also.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S237. *Rethi (Ρέθι)*

Type: Pssoble settlement. Region: Cyclades. Island: Andros. Fieldwork: Survey. Coastality value: 1056.

References: Koutsoukou 1992, 37–40.

Chronology: Final Neolithic–Early Bronze I.

Description: Defensive settlement, terrace walls and eroded architectural remains are all that is left of the site. Associated pottery is FN and EC I, indicating that there may have been two consecutive phases of occupation.

S238. *Rizokastelia (Ριζοκαστελία)*

Type: Settlement. Region: Cyclades. Island: Naxos. Fieldwork: Survey. Coastality value: 6714.

References: Stephanos 1910, 272; Scholes 1956, 12; Doumas 1972, 166; Barber 1981, 18; Schallin 1993, 20.

Chronology: (Early Bronze?) Middle Bronze I–Late Bronze Age.

Description: Steep acropolis over a plain. Scholes suggests a MC dating, with later Mycenaean material. More investigation needed here to clarify.

S239. *Rodopos Troulos (Ροδοπός Τρούλος)*

Type: Possible settlement. Region: Crete. Nearest village: Afrata. Fieldwork: Survey. Coastality value: 5358.

References: Nowicki 2014, 236–237.

Chronology: Early Bronze I.

Description: Survey unveiled architectural remnants and pottery of FN II–EM I date.

S240. *Rouph (Ρουφ)*

Type: Settlement. Region: Attica. Nearest village: Rouf. Fieldwork: Rescue excavation. Coastality value: 2434.

References: *ArchDelt* 35 (1980): A, 147–185.

Chronology: Early Bronze IIA–B.

Description: EH buildings recovered with two main phases, running from EH IIA–B, possibly into EH III.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S241. Salanti Bay (Σαλάντι Διδύμων)

Type: Settlement. Region: Argolid. Nearest village: Salanti. Fieldwork: Underwater excavation. Coastality value: 203.

References: *ArchDelt* 54 (1999): B2, 1028–1029; Galanidou *et al.* 2020, 384–385.

Chronology: Early Bronze IIA.

Description: EH settlement which originally occupied a low coastal plain which has subsequently subsided into the sea. Foundation walls were visible and the ceramics correlate with EB IIA.

S242. *Saliagos (Σάλιαγκος)*

Type: Settlement. Region: Cyclades. Island: Antiparos. Fieldwork: Research excavation. Coastality value: 645.

References: Evans & Renfrew 1968, 1–226.

Chronology: Late Neolithic.

Description: Cycladic LN type–site with evidence for two phases of activity in a small settlement with various houses.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S243. *Saratse–Perivolaki (Σαράτσι–Περιβολάκι)*

Type: Settlement. Region: Macedonia. Nearest village: Perivolaki. Fieldwork: Research excavation. Coastality value: 24390.

References: Heurtley 1939, 26–30.

Chronology: Early Bronze I–Late Bronze Age.

Description: Long–lived *magoula* with a series of soundings uncovering remains including LB, MB and EB strata including associated architecture.

S244. *Seles Akrotiri (Σέλλες Ακρωτήρι)*

Type: Possible settlement. Region: Crete. Nearest village: Kato Seles. Fieldwork: Survey. Coastality value: 255.

References: Nowicki 2014, 182.

Chronology: Final Neolithic–Early Bronze I.

Description: Eroded but remains of walls and FN II and EM I pottery found through survey.

S245. *Seraglio (Σεράγια)*

Alternative name: Serayia. Type: Settlement. Region: Dodecanese. Nearest village: Serayia. Fieldwork: Rescue excavation. Coastality value: 641.

References: *ArchDelt* 39 (1984): B, 329–335; *ArchDelt* 42 (1987): B2, 620.

Chronology: Early Bronze III; Middle Bronze III–Late Bronze Age.

Description: Under the modern chora of Kos, located on a low hill next to the sea. A late MBA–LBA settlement, with the earliest occupation in EB III, with a hiatus in occupation during most, if not all of the MBA

***S246**. Sesklo (Σέσκλο)*

Type: Settlement. Region: Thessaly. Nearest village: Sesklo. Fieldwork: Research excavation. Coastality value: 10160 (LN); 9360 (FN–EBA).

References: Theocharis 1962, 24–35; Theocharis 1963, 40–44; Theocharis 1965, 5–9; *Ergon* 1966, 12–17; Theocharis 1966, 5–7; Theocharis 1968, 24–30; *Ergon* 1971, 21–27; Theocharis 1971, 15–19; *Ergon* 1972, 7–12; *Ergon* 1973, 14–20; Theocharis 1976, 153–162; Theocharis 1977, 159–161; *ArchDelt* 56–59 (2001–2004): B2, 479–484;

Chronology: (Aceramic Neolithic–Middle Neolithic) Late Neolithic–Early Bronze I (Middle Bronze Age).

Description: Key Neolithic settlement with continuous occupation through the Neolithic into the EBA. LN settlement was large with many houses evident on and around the tell. MH houses noted in Sector T1 (Appendix 5B, Fig. 25).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

***S247**. Sfendami (Σφενδάμι)*

Type: Possible settlement. Region: Thessaly. Nearest village: Sfendami. Fieldwork: Rescue excavation. Coastality value: 20176.

References: *ArchDelt* 64 (2009): B2, 732.

Chronology: Final Neolithic.

Description: Rescue excavation revealed a FN ditch belonging to a settlement atop the hill.

***S248**. Sfinari Korakas (Σφηνάρι Κόρακα)*

Type: Possible settlement. Region: Crete. Nearest village: Sfinari. Fieldwork: Survey. Coastality value: 3350.

References: Nowicki 2014, 232.

Chronology: Early Bronze I.

Description: FN II – EM I based on the pottery. Some remnants of walls on the surface.

***S249**. Sissi (Σίσι)*

Type: Settlement. Region: Crete. Nearest village: Sissi. Fieldwork: Research excavation. Coastality value: 726.

References: Driessen 2009; Driessen *et al.* 2011; Driessen *et al.* 2012;

Chronology: Early Bronze IIB–Late Bronze I.

Description: Site has a Neopalatial monumental building with central court. Within the courtyard of monumental building were deposits of MM IIIA to LM IB, with earliest deposits at the site dating to EM IIB.

Relevant finds: Appendix 4:A (*Murex dye production*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EC (*Manuports and Miscellany*).

***S250**. Skala Oropos (Σκάλα Ωρωπού)*

Type: Settlement. Region: Attica. Nearest village: Oropos. Fieldwork: Rescue excavation. Coastality value: 2421.

References: Hope–Simpson & Dickinson 1979, 221; Nazou 2014, 351.

Chronology: Early Bronze III.

Description: Rescue excavations have revealed settlement of various phases, though EH III has been reported.

S251. *Skala Sotiros (Σκάλα Σωτήρος)*

Type: Settlement. Region: North Aegean islands. Island: Thasos. Fieldwork: Rescue excavation. Coastality value: 588.

References: *ArchDelt* 41 (1986): B, 173–175; *ArchDelt* 44 (1989): B2, 372–373; Papadopoulos *et al.* 2001; *ArchDelt* 61 (2006), B2, 994–997; Papadopoulos *et al.* 2011, 427–433; Koukouli–Chrysanthaki & Papadopoulos 2016, 339–358.

Chronology: Early Bronze I–III.

Description: Coastal village surrounded by a stone enclosure with a monumental stone building inside. Destruction layer attests to a conflagration at the end of EB III.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*).

S252. *Skamnos (Σκαμνός)*

Type: Settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 6809.

References: Melas 1985, 72.

Chronology: (Final Neolithic); Middle Bronze III–Late Bronze I.

Description: Walls and Neopalatial pottery were recovered.

S253. *Skarkos (Σκάρκος)*

Type: Settlement. Region: Cyclades. Island: Ios. Fieldwork: Research excavation. Coastality value: 1775.

References: *ArchDelt* 37 (1982): B2, 359; *ArchDelt* 43 (1988): B2, 510–514; Marthari 1997, 362–382.

Chronology: Early Bronze IIA–B.

Description: Impressive well-preserved settlement built on terraces. It has preserved architecture and is one of the few preserved settlements of the prehistoric Cyclades.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S254. *Sklavos (Σκλάβος)*

Type: Settlement. Region: Attica. Nearest village: Maroudi. Fieldwork: Survey. Coastality value: 2232.

References: Lolos 2010, 181–183.

Chronology: Middle Bronze II–III.

Description: Acropolis site with a series of enclosure walls. Ceramics of the MH II–III phases were noted in the survey.

S255. *Sklavouna (Σκλαβούνα)*

Type: Settlement. Region: Cyclades. Island: Paros. Fieldwork: Survey. Coastality value: 1826.

References: Kastarou & Schilardi 2004, 44–46.

Chronology: Early Bronze IIA.

Description: Remains of EC IIA pottery on surface, as well as architectural features.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S256. *Skorpio Potami (Σκόρπιο Ποτάμι)*

Type: Possible settlement. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 1727.

References: Andrikou 2020a, 10.

Chronology: Final Neolithic–Early Bronze I

Description: FN–EH settlement remains have been reported, though details at this stage are not available.

S257. *Skoupidia (Σκουπίδια)*

Type: Possible settlement. Region: Saronic. Island: Salamis. Fieldwork: Survey. Coastality value: 3363.

References: Chronique ID2642.

Chronology: Final Neolithic.

Description: Retaining walls and scattered FN finds.

S258. *Sochoria–Oropou (Σοχώρια Ωρωπού)*

Type: Settlement. Region: Attica. Nearest village: Oropos. Fieldwork: Rescue excavation. Coastality value: 20108.

References: *ArchDelt* 51 (1996): B1, 66–67; Mazaraki–Ainainos 1996, 22–124; Cosmopoulos 2001, 40–41. Andrikou 2020a, 7.

Chronology: Middle Bronze III.

Description: Fortified settlement with an encircling wall.

S259. *Sourada (Σουράδα)*

Type: Settlement. Region: East Aegean. Island: Lesbos. Fieldwork: Rescue excavation. Coastality value: 452.

References: *ArchDelt* 51 (1996): B2, 600; *ArchDelt* 52 1997): B3, 904–905; *ArchDelt* 53 (1998): B3, 767–771.

Chronology: Early Bronze I–IIA.

Description: Two EBA buildings and an intramural burial were excavated with pottery corresponding to Thermi III–IV.

S260. *Spedos (Σπεδός)*

Type: Settlement. Region: Cyclades. Nearest village: Naxos. Fieldwork: Survey. Coastality value: 2764.

References: *ArchDelt* 17 (1961–2): A 114; Doumas 1972, 163; 1977, 25.

Chronology: Early Bronze I–IIA.

Description: Fortified settlement excavated by Stephanos. The deails are therefore sketchy, though ceramic deposits indicate occupation in EC I and EC IIA.

S261. *Stavroupoli (Σταυρούπολη)*

Type: Settlement. Region: Macedonia. Nearest village: Stavroupoli. Fieldwork: Rescue excavation. Coastality value: 2737.

References: *ArchDelt* 60 (2005): B2, 595–596; *ArchDelt* 64 (2009): B2, 667–668.

Chronology: Late Neolithic – Final Neolithic.

Description: Rescue excavation revealed FN settlement remains as well as LN remains.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S262. *Stiri (Στείρι)*

Type: Settlement. Region: Corinthia. Nearest village: Agios Petros. Fieldwork: Survey. Coastality value: 10242.

References: Tartaron *et al.* 2011, 617–620.

Chronology: Early Bronze I–IIA.

Description: Large surface area EH I–II pottery discovered on the SHARP project. The apogee is placed in EH II and the remains of architectural features dotted around the area suggest occupation during this period.

S263. *Strofilas (Στρόφιλας)*

Type: Settlement. Region: Cyclades. Island: Andros. Fieldwork: Research excavation. Coastality value: 796.

References: *ArchDelt* 53 (1998): B2, 789–791; *ArchDelt* 54 (1999): B2, 786–787; *ArchDelt* 55 (2000): B2, 960–964; *Ergon* 2009, 57–63; *Ergon* 2010, 53–55; *Ergon* 2011, 34–36; *Ergon* 2017, 39–42.

Chronology: Final Neolithic.

Description: Large fortified FN settlement of two hectares. Several buildings excavated and the site is noteworthy due to the preserved remains of rock art on the fortification walls.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:B (*Processing marine molluscs*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 5A: **5**.**121, 5**.**122, 5**.**12**3.

S264. *Strongilos (Στρογγυλός)*

Type: Possible settlement. Region: Crete. Nearest village: Toplou. Fieldwork: Survey. Coastality value: 758.

References: Nowicki 2014, 238–239.

Chronology: Early Bronze I.

Description: FN II pottery and architectural remains.

S265. *Sykia (Συκιά)*

Type: Possible settlement. Region: Macedonia. Nearest village: Sikia. Fieldwork: Rescue excavation. Coastality value: 2726.

References: Asouchidou *et al.* 2007, 331–335; *ArchDelt* 62 (2007): B2, 855–856.

Chronology: Late Neolithic–Early Bronze III (Middle Bronze Age–Late Bronze Age)

Description: Building remains and ceramics uncovered during rescue excavation.

S266. *Talioti (Ταλιώτη)*

Type: Settlement. Region: Argolid. Nearest village: Asini. Fieldwork: Survey. Coastality value: 6880.

References: Dousougli 1987, 164–220.

Chronology: Early Bronze I/II–IIA.

Description: Architectural remains and ceramics were reported.

S267. *Tavros (Ταύρος)*

Type: Possible settlement. Region: Attica. Nearest village: Tavros. Fieldwork: Rescue excavation. Coastality value: 2504.

References: *ArchDelt* 66 (2011): B1, 136–142; Vasilopoulou 2009, 452–453.

Chronology: Final Neolithic – Early Bronze IIA.

Description: FN to EH II site. Architecture consisting of postholes.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S268. *Tharrounia (Θαρούνια)*

Type: Settlement. Region: Euboia. Nearest village: Tharrounia. Fieldwork: Rescue excavation. Coastality value: 64935.

References: Sampson 1992, 86–92.

Chronology: Final Neolithic–Early Bronze I.

Description: Final Neolithic settlement. Soundings uncovered walls and lots of LN IIB (FN–EB) pottery.

S269. *Thermi Lesbos (Θερμή)*

Type: Settlement. Region: East Aegean. Island: Lesbos. Fieldwork: Research excavation. Coastality value: 631.

References: Lamb & Hutchinson 1928/29, 1–52; Lamb & Brock, 1930/31, 148–165; Lamb 1936.

Chronology: Early Bronze I–IIA (Late Bronze Age).

Description: Five consecutive phases all dated to the Early Bronze Age I–II. There are remains of later occupation, though these mostly correspond with the end of the latter phases of the LBA.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement context*s).

S270. *Thermi–Macedonia (Θέρμη Μακεδονίας)*

Type: Settlement. Region: Macedonia. Nearest village: Thermi. Fieldwork: Research excavation. Coastality value: 3817.

References: Andreou *et al.* 1996, 304–305.

Chronology: Late Neolithic.

Description: Buildings, floors and open spaces were excavated with the ceramics indicating a LN date.

S271. *Tholos (Θόλος)*

Type: Settlement. Region: Crete. Nearest village: Tholos. Fieldwork: Survey. Coastality value: 665.

References: Boyd-Hawes 1904, 13; Haggis 1996b; Haggis 2005, 90–94.

Chronology: Middle Bronze I–III.

Description: Concentration of Minoan buildings and ceramic scatters, indicating a large area of occupation around the bay. Evidence for a Minoan building around 200m to the west.

S272. *Thorikos Velatouri (Βελατούρι Θορικού)*

Type: Settlement. Region: Attica. Nearest village: Thorikos. Fieldwork: Research excavation. Coastality value: 1195.

References: *ArchDelt* 56–59 (2001–2004): B1, 342. Kakavogianni & Douni 2010, 202, 210, fig. 5; Oikonomakou 2010, 236.

Chronology: Early Bronze II–Middle Bronze III.

Description: MH settlement extended on the summit with traces of earlier EH settlement phases.

S273. *Tigani (Κάστρο Τηγάνι)*

Type: Settlement. Region: East Aegean. Island: Samos. Fieldwork: Research excavation. Coastality value: 1190.

References: Tsakos 1968, 168; Kyrieleis *et al.* 1985, 409–418; Felsh 1988; Kouka 2014, 43–64.

Chronology: Late Neolithic–Late Bronze Age

Description: Settlement occupying the Kastro overlooking the Pythgoreio bay. Occupation dates from LN to the EBA, with MM and LM imports in the later layers.

S274. *Tiryns (Τίρυνθα)*

Type: Settlement. Region: Peloponnese. Nearest village: Nea Tirynthia. Fieldwork: Research excavation. Coastality value: 323.

References: Schliemann 1878; von Ulf Jantzen 1975; Kilian *et al.* 1979, 379–411; 1981, 149–194; 1982, 247–276; Kilian 1988, 105–151.

Chronology: (Late Neolithic); Early Bronze II – Late Bronze Age.

Description: EH levels below the main Mycenaean citadel. Confirmed EH III floors, as well as EH II buidlings (Appendix 5B, Fig. 26).

Relevant finds: Appendix 3:D (Marine food waste remains from quotidian contexts).

S275. *Toroni (Τορώνη)*

Type: Settlement. Region: Macedonia. Nearest village: Toroni. Fieldwork: Research excavation. Coastality value: 656.

References: Cambitoglou & Papadopoulos 1988, 188, 204–205, 207–208, 210–11, 215; 1990, 152, 161–62, 164, 167, 169; Morris 2010, 1–67.

Chronology: Early Bronze I–Late Bronze Age.

Description: Sealed Bronze Age deposits below Classical site. Settlement occupies a promontory into the sea. EH destruction level was noted, as well as MH and LH layers.

S276. *Toumba (Τούμπα Θεσσαλονίκης)*

Type: Settlement. Region: Macedonia. Nearest village: Toumba–Thessaloniki. Fieldwork: Research excavation. Coastality value: 3042.

References: Kotsakis & Andreou 1987, 223–233; Kotsakis & Andreou 1989, 201–213; Andreou & Kotsakis 1991, 209–219; Andreou & Eukleidou 2008, 323–328.

Chronology: Early Bronze III–Late Bronze Age.

Description: Floors and buildings of EBA date, with occupation right the way through until the end of the LBA.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:CA (*Utilitarian uses of marine shell from settlement contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4:EC (*Manuports and miscellany*).

S277. *Trilofos (Τρίλοφος)*

Type: Settlement. Region: Macedonia. Nearest village: Trilofos. Fieldwork: Rescue excavation. Coastality value: 20108.

References: *ArchDelt* 61 (2006): B2 893–896.

Chronology: Late Neolithic.

Description: LN settlement with pits, oval stone structures, hearths and storage jars.

S278. *Troullos (Τρούλλος)*

Type: Possible settlement. Region: Cyclades. Islande: Kea. Fieldwork: Research excavation. Coastality value: 1195.

References: Caskey 1971, 392.

Chronology: Late Bronze I.

Description: Buildings attributable to LC I found, possible shrine, household or watchpost. Excavations did not clarify.

S279. *Tylissos (Τύλισος)*

Type: Settlement. Region: Crete. Nearest village: Tylissos. Fieldwork: Research excavation. Coastality value: 9346.

References: Hazzidakis 1934; Hayden 1984, 37–46

Chronology: Early Bronze IIA–Late Bronze I.

Description: EM II–MM II house remains uncovered but much of the settlement is later. MM III–LM I structures with evidence of elite architecture (Appendix 5B, Fig. 28).

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:A (*Murex dye production*).

S280. *Vagia (Βάγια)*

Type: Settlement. Region: Corinthia. Nearest village: Arakoukia. Fieldwork: Survey. Coastality value: 1826.

References: Tartaron *et al.* 2006, 145–160; Caraher *et al.* 2010, 385–415.

Chronology: Early Bronze I–IIA.

Description: EH I–II fortified settlement site. Principal architectural remains are a series of round structures, probably collapsed towers, connected by walls, associated with EH II pottery.

S281. *Valtos (Βάλτος)*

Type: Settlement. Region: Macedonia. Nearest village: Arakoukia. Fieldwork: Survey. Coastality value: 2416.

References: Poulaki–Pandermali *et al.* 2004, 397–406; Poulaki–Pantermali *et al.* 2011, 185–190. *ArchDelt* 56–59 (2001–2004): B3a, 215–216.

Chronology: Middle Bronze I – Late Bronze Age

Description: Large settlement at Valtos with C14 dates giving occupation in the MBA (1930–1745 BCE). First phase dates roughly to MH I–II, the second phase to MH III–LH I and the final phase is at the end of the LBA.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S282. *Variarnia (Βαριαρνιάς)*

Type: Possible settlement. Region: Saronic. Island: Poros. Fieldwork: Survey. Coastality value: 658.

References: Konsolaki–Giannopoulou 2011, 273–274.

Chronology: Early Bronze IIA.

Description: Enclosure wall and structures, which have been dated by the excavator to EH II.

S283. *Vasilika–Kyparissi (Κυπαρίσσι Βασιλικών)*

Type: Settlement. Region: Macedonia. Nearest village: Vasilika. Fieldwork: Rescue excavation. Coastality value: 5219.

References: Andreou *et al.* 1996, 583; *ArchDelt* 63 (2008): B2, 858; Pappa & Nanoglou 2019, 1–7.

Chronology: (Middle Neolithic) Late Neolithic–Early Bronze II.

Description: Large Neolithic settlement with architecture. A small EBA mound was also reported overlying the northern part of the site. Deep cultural layers were reported.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EC (*Manuports and Miscellan*y).

S284. *Vasiliki (Βασιλική)*

Type: Settlement. Region: Crete. Nearest village: Vasiliki. Fieldwork: Research excavation. Coastality value: 4351 6345.

References: Seager 1906; Zois 1974, 213–221; 1976, 440–459; 1979, 323–330; 1992, 231–243; 1997, 173–223.

Chronology: Early Bronze IIA–Late Bronze I.

Description: The settlement consisted of at least four houses dating to EM IIA, with traces of earlier settlement. Reorganisation in EM IIB before site destroyed by fire at the end of EM IIB. Small–scale occupation in EM III, before wider reoccupation in MM IA and continuity until LM I (Appendix 5B, Fig. 29).

Relevant finds: Appendix 5A: **5**.**17**.

S285. *Vasiliki Kefala (Κεφαλά Βασιλικής)*

Type: Settlement. Region: Crete. Nearest village: Vasiliki. Fieldwork: Research excavation. Coastality value: 6345.

References: Pendlebury 1965, 45; Nowicki 2014, 160.

Chronology: Final Neolithic–Early Bronze I.

Description: FN–EM I small settlement located beneath the LM IIIC settlement. Affinities with Petras Kefala.

S286. *Vassa (Βάσσα)*

Type: Possible settlement. Region: Corinthia. Nearest village: Nea Epidavros. Fieldwork: Survey. Coastality value: 12023.

References: Tartaron *et al.* 2006, 145–160.

Chronology: Early Bronze IIA.

Description: Series of cairns found on survey with a clearing in the centre, which is presumed to be the habitational space. Dated by the excavators to EH II.

S287. *Vathi (Βαθύ)*

Type: Settlement. Region: Cyclades. Island: Astypalaia. Fieldwork: Research excavation. Coastality value: 464.

References: *Ergon* 2008, 119−123; *Ergon* 2011, 39–40; Vlachopoulou 2012, 115–123; Vlachopoulou 2013, 213–225.

Chronology: Early Bronze I–IIB.

Description: Fortified settlement on a promontory overlooking the bay. Most of the settlement remains published pertain to EC levels, though it is not clear when the site was abandoned and if there should be MC and later occupation at the site. Petroglyphs were also reported, similar in character to those known from EC Dhaskalio, Plaka and FN Strofilas.

Relevant finds: Appendix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 5A: **5**.**126**.

S288. *Viglia-Kissamou (Βίγλια)*

Type: Settlement. Region: Crete. Nearest village: Viglia. Fieldwork: Research excavation. Coastality value: 608.

References: Skordou 2013, 525–536.

Chronology: Middle Bronze I–II.

Description: Small coastal settlement with evidence of a shrine.

Relevant finds: Appendix 3:E (*Marine food waste remains from ritual or probable ritual contexts*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S289. *Viglatouri Oxylithos (Βιγλατούρι Οξύλιθου)*

Type: Settlement. Region: Euboia. Nearest village: Oxylithos. Fieldwork: Rescue excavation. Coastality value: 4015.

References: Sapouna–Sakellaraki 1998, 59–104.

Chronology: (Early Bronze Age) Middle Bronze I–III.

Description: Occupies a knoll south of Oxylithos. Archaic buildings overlie MH constructions. Likely there is an EH phase to the site also, though prehistoric layers have not yet been extensively explored.

S290. *Volos (Βόλος)*

Alternate name: Iolkos. Type: Settlement. Region: Thessaly. Nearest village: Volos. Fieldwork: Rescue excavation. Coastality value: 277.

References: Theocharis 1956, 119–130; 1957, 54–69; 1960, 49–59; *ArchDelt* 64 (2009): B1, 550–552.

Chronology: (Early Neolithic) Early Bronze IIB–Late Bronze Age.

Description: Earlier Neolithic site present a little to the east. Lower levels show EH II–III remains with continuity into the LBA.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 5A: **5**.**138**.

S291. *Vouno (Βουνό)*

Type: Settlement. Region: Dodecanese. Island: Karpathos. Fieldwork: Rescue excavation. Coastality value: 1648.

References: Melas 1985, 31.

Chronology: Final Neolithic–Early Bronze I.

Description: Remnants of terrace walls, buildings and associated cultural deposits dated to the FN.

S292. *Vourleza–Porto Rafti (Βουρλέζα– Πόρτο Ράφτη)*

Alternate name: Pounda. Type: Settlement. Region: Attica. Nearest village: Porto Rafti. Fieldwork: Rescue excavation. Coastality value: 616.

References: Hope–Simpson & Dickinson 1979, 213; *ArchDelt* 56–59 (2001–2004): B1, 339; Weiberg 2007, 263; Nazou 2014, 351; Andrikou 2020a, 13.

Chronology: Early Bronze I–IIA.

Description: Small EH settlement now mostly eroded.

S293. *Vriokastro (Βρυόκαστρο)*

Type: Possible settlement. Region: Cyclades. Island: Andros. Fieldwork: Survey. Coastality value: 2030.

References: *ArchDelt* 54 (1999): B2, 818; Televantou 2008, 43–53.

Chronology: Final Neolithic.

Description: FN settlement with a wall at the top of the hill and a second wall protecting the south and west sides. Natural caves had been used as habitat or for funerary use.

S294. *Xerolimni Vigli (Ξηρολίμνη– Βιγλί)*

Type: Possible settlement. Region: Crete. Nearest village: Xirolimni. Fieldwork: Survey. Coastality value: 10803.

References: Nowicki 2014, 98.

Chronology: Early Bronze I.

Description: FN II–EM I site with architectural features.

S295. *Yiali (Γυαλί)*

Type: Possible settlement. Region: Dodecanese. Island: Yiali. Fieldwork: Rescue excavation. Coastality value: 1484.

References: Sampson 1988d.

Chronology: Final Neolithic.

Description: FN house and presumed settlement close to the obsidian extraction areas. May have only been seasonal habitation.

S296. *Zagani (Ζαγάνι)*

Type: Settlement. Region: Attica. Nearest village: Velanidia. Fieldwork: Rescue excavation. Coastality value: 2394.

References: Steinhaeur 2002, 31–34; Vasilopoulou 2009, 214–219; Nazou 2014, 353.

Chronology: Final Neolithic–Early Bronze I.

Description: FN –EH I fortified site, located in the area of the modern airport and the hill has subsequently been levelled in the construction of the airport.

S297. *Zakros (Ζάκρος)*

Type: Settlement. Region: Crete. Nearest village: Kato Zakro. Fieldwork: Research excavation. Coastality value: 631.

References ; Hogarth 1900–01, 121–149; Platon 1963, 160–188; 1964, 141–168; 1967, 162–194; 1968, 149–183; 1969, 197–237; 1970, 208–251; 1971, 231–275; 1972, 159–192; 1973, 137–166; 1975, 343–375; 1977, 421–446; 1978, 259–299; 1979, 282–322; 1980, 297–330; 1981, 331–366; 1985, 217–262; 1986, 243–297.

Chronology: Early Bronze III–Late Bronze I.

Description: Scattered settlement remains in EM III, with emergence of the protopalatial palace in MM I–II. The Neopalatial site is surrounded by a town on a higher elevation with the palace. The settlement was destroyed and abandoned in LM IB (Appendix 5B, Fig. 30).

Relevant finds: Appenndix 3:A (*Fishing apparatus from non-funerary contexts*); Appendix 3:D (*Marine food waste remains from quotidian contexts*); Appendix 5A: **5**.**61, 5**.**165**.

S298. *Zerelia Magoula (Ζερέλια Μαγούλα)*

Type: Settlement. Region: Thessaly. Nearest village: Almyros. Fieldwork: Research excavation. Coastality value: 8190.

References: Wace *et al.* 1907/8, 197–225; Reinders 2004, 22; *ArchDelt* 62 (2007): B1, 704–707; *ArchDelt* 63 (2008): B1, 686–687; *ArchDelt* 64 (2009): B1, 568–570.

Chronology: Early Bronze I–Late Bronze Age.

Description: The report seems to suggest that the site was in more–or–less continuous usage throughout the EBA, MBA and LBA. Architectural levels equivalent to all phases of the EBA were established, as well as MBA levels into the start of the LBA.

Relevant finds: Appendix 3:D (*Marine food waste remains from quotidian contexts*).

S299. *Zoumbaria (Ζουμπάρια)*

Type: Settlement. Region: Cyclades. Island: Despotiko. Fieldwork: Rescue excavation. Coastality value: 351.

References: Tsountas 1898–9a, 163; *ArchDelt* 16 (1960): B, 246; Doumas 1977, 25; Kourayos & Burns 2005, 136.

Chronology: Early Bronze I–IIA.

Description: Scant remains of an EC I–IIA settlement close to the cemetery.

Extra–urban shrines

S300. *Agios Georgios sto Vouno (‘Αγιος Γεώργιος στο Βουνό)*

Type: Peak sanctuary. Region: Laconia. Island: Kythera. Fieldwork: Research excavation.

References: Sakellarakis 2013; Tournavitou 2014.

Chronology: Middle Bronze I–Late Bronze I.

Description: Architectural remains and a wealth of ritual items attesting to the presence of a Minoan peak sanctuary on the island of Kythera.

Relevant finds: Appendix 5A: **5**.**213**, **5**.**214**, **5**.**215**.

S301. *Kalamaki (Καλαμάκι)*

Type: Peak sanctuary. Region: Crete. Nearest village: Palaikastro. Fieldwork: Rescue excavation.

References: *ArchDelt* 27(1972): B, 651; Rutkowski 1986, 174.

Chronology: Middle Bronze I–III.

Description: Peak sanctuary close to Palaikastro.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S302. *Mt. Juktas (Βουνό Γιούχτας)*

Type: Peak sanctuary. Region: Crete. Nearest village: Archanes. Fieldwork: Research excavation.

References: Karetsou 1981; Reese 1987a, 201, 204; Peatfield 1989, 354–361.

Chronology: Middle Bronze I–Late Bronze Age.

Description: Pre–eminent Minoan peak sanctuary, with architectural features evident from the Neopalatial period. The shrine has long–distance views over the coast and likely served the Knossos and Archanes settlements (Appendix 5B, Fig. 18).

Relevant finds: Appendix 3:E (*Marine food waste remains from ritual or probable ritual contexts*); Appendix 4:A (*Murex dye production*); Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 4:EA (*Marine objects in body ornamentation from settlement or cultic contexts*); Appendix 4: EC (*Manuports and Miscellany*); Appendix 5A: **5**.**182**, **5**.**202**.

S303. *Patsos (Φαράγγι Πατσού)*

Type: Cave sanctuary. Region: Crete. Nearest village: Patsos. Fieldwork: Rescue excavation.

References: Rutkowski 1986, 59, 70, no.21; Warren 1966; Prent 2005, 156–158.

Chronology: Late Bronze I.

Description: 'Horns of Consecration', figurines and other cult items were found inside the cave.

Relevant finds: Appendix 5A: **5**.**180**.

S304. *Petsophas (Πετσοφά)*

Type: Peak sanctuary. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation.

References: Myers 1902–3, 356–387; Rutkowski 1991.

Chronology: Middle Bronze I–Late Bronze Age.

Description: Excavated early, the shrine contained figurines, cult paraphernalia and building remains. It likely served the local settlement at Palaikastro.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S305. *Psychro (Σπήλαιο Ψυχρού)*

Type: Cave sanctuary. Region: Crete. Nearest village: Psychro. Fieldwork: Research excavation.

References: Rutkowski 1986, 57, 70, no.23; Vandenabeele 1991, 247–248; Watrous 1996.

Chronology: Middle Bronze I–Late Bronze Age.

Description: Cave shrine with votives dating to a range of periods in the Bronze Age, with a focus on items of cult such as offering tables, figurines and metal implements.

Relevant finds: Appendix 5A: **5**.**181**.

S306. *Skoteino (Σπήλαιο Σκοτεινού)*

Type: Cave sanctuary. Region: Crete. Nearest village: Gouves. Fieldwork: Rescue excavation.

References: Kanta 1980, 68; Rutkowski 1986, 61, 71, no. 26.

Chronology: Middle Bronze I–Late Bronze Age.

Description: Cult use of the cave is attested through the finds of bronze figurines and an axe votive. The cave has natural stalactites and hollows filled with water.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S307. *Traostalos (Τραόσταλος)*

Type: Peak sanctuary. Region: Crete. Nearest village: Azokeramos. Fieldwork: Rescue excavation.

References: Davaras 1976, 97, fig. 55; Vandenabeele 1991, 243, 249; Chryssoulaki 1999, 315, fig. 15; 2001.

Chronology: Middle Bronze I–Late Bronze I.

Description: Peak sanctuary which has been argued to have had a particular maritime association (Chryssoulaki 2001, 63). A range of cult paraphernalia and figurines were recovered from the site.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*); Appendix 5A: **5**.**208**, **5**.**209**, **5**.**217**.

S308. *Vigla (Βίγλα)*

Type: Peak sanctuary. Region: Crete. Nearest village: Epano Zakro. Fieldwork: Survey.

References: Faure 1967, 118; Jones 1999, 77; Peatfield 1989, 413–15

Chronology: Middle Bronze I–II.

Description: Close to Zakros, cult activity is traced through figurines and pottery from the summit of the sanctuary.

Relevant finds: Appendix 4:DA (*Special use of marine shell objects from cultic or possible cultic contexts*).

S309. *Vrysinas (Βρύσινας)*

Type: Peak sanctuary. Region: Crete. Nearest village: Oros. Fieldwork: Rescue excavation.

References: Faure 1972, 397; Peatfield 1989, 421

Chronology: Middle Bronze I–II.

Description: Peak sanctuary with deposits of figurines and other cult paraphernalia. The shrine was visible from the sea and had a view of the sea to the north.

Relevant finds: Appendix 3:E (*Marine food waste remains from ritual or probable ritual contexts*); Appendix 5A: **5**.**207**.

Cemeteries

C1. *Agia Irini (Αγία Ειρήνη)*

Type: Extramural. Region: Cyclades. Island: Kea. Fieldwork: Research excavation. Coastality value: 786.

References: Davis 1986; Overbeck 1989.

Chronology: Middle Bronze III–Late Bronze I.

Description: Around twenty–five burials of a variety of types immediately beside the settlement.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C2. *Agia Marina (Αγία Μαρίνα)*

Type: Intramural. Region: Boiotia. Nearest village: Kastro. Fieldwork: Rescue excavation. Coastality value: 19818.

References: Soteriades 1912, 272; Syriopoulos 1968, 231.

Chronology: Early Bronze III.

Description: Two adult graves inside the settlement at Agia Marina.

C3. *Agia Marina–Gerospilia (Αγία Μαρίνα)*

Type: Rock shelter. Region: Crete. Nearest village: Platanias. Fieldwork: Research excavation. Coastality value: 872.

References: Pendlebury 1939, 103, 123; Moody 1987, catalogue AMR1; Godart & Tzedakis 1992, 46; Herrero 2014, 299.

Chronology: Middle Bronze I–II.

Description: Rock shelter with burials reported on the interior.

C4. *Agia Photia (Αγία Φωτιά)*

Type: Multiple (see description). Region: Crete. Nearest village: Agia Photia. Fieldwork: Research excavation. Coastality value: 677.

References: Davaras 1971, 392–397; Karantzali 1996, 46–48; Day *et al.* 1998; Betancourt 2008, 237–240.

Chronology: Early Bronze I–IIA.

Description: Series of cemetery sites. Rock–cut tombs (210), pit tombs (35), several disturbed tombs (13) and cave burials. Cycladic pottery dominates the assemblage in EM tombs. First use of rock–cut tombs is EM I, with continuity to EM II.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C5. *Agiassos (Αγιασσός)*

Type: Extramural. Region: Cyclades. Island: Naxos Fieldwork: Rescue excavation. Coastality value: 1562.

References: *ArchDelt* 62 (2007): B2, 1144.

Chronology: Early Bronze IIA.

Description: Buildings and shale slabs linked to graves reported, likely from a looted Cycladic cemetery. Most likely to be EC IIA.

C6. *Agioi Anargyroi–Naxos (Άγιοι Ανάργυροι–Νάξος)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 14168.

References: *ArchDelt* 17 (1961–2): A, 272; Doumas 1977, 100, 126.

Chronology: Early Bronze I/IIA.

Description: EC I/II cemetery with built platforms. Twenty–two graves uncovered and parts of the cemetery had been looted.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C7. *Agioi Anargyroi Argolid (Άγιοι Ανάργυροι–Αργολίδα)*

Type: Extramural (likely). Region: Argolid. Nearest village: Petrothalassa. Fieldwork: Survey. Coastality value: 348.

References: Jameson *et al.*1994, 488.

Chronology: Early Bronze I.

Description: Cist grave of unworked slabs found on the beach scarp with human remains in situ. No artefacts found in the grave but it had been heavily eroded by the sea. Most of the finds were of EH I date but were collected up to 100m due to erosion.

C8. *Agioi Theodoroi–Moulki (Άγιοι Θεόδωροι–Μούλκι)*

Type: Extramural. Region: Corinthia. Nearest village: Agioi Theodoroi. Fieldwork: Rescue excavation. Coastality value: 1007.

References: *ArchDelt* 24 (1969): B1, 103.

Chronology: Middle Bronze II.

Description: MH built cist tomb burial accompanied by only a few grave goods.

C9. *Agios Antonios (Άγιος Αντώνιος)*

Type: Rock shelter. Region: Crete. Nearest village: Kavousi. Fieldwork: Survey. Coastality value: 10044.

References: Hall 1914, 183–185; Haggis 1993; 2005, 98–99.

Chronology: Early Bronze I – Middle Bronze I.

Description: Rock shelter tomb. First usage dates to EM I and continues through until MM IA. Some material was found outside the shelter, which included animal bones perhaps related to ritual food consumption.

C10. *Agios Charalambos (Άγιος Χαράλαμπος)*

Type: Cave. Region: Crete. Nearest village: Agios Charalambos. Fieldwork: Research excavation. Coastality value: 82527.

References: *ArchDelt* 31 (1976): B2, 379–380; *ArchDelt* 37 (1982): B2, 387–388; Betancourt 2005; Betancourt & Muhly 2006.

Chronology: (Late Neolithic – Final Neolithic); Early Bronze I–Middle Bronze II.

Description: Cave burial with the remains of hundreds of individuals in secondary deposition arranged before the closing of the cave entrance in MM II. Evidence for food consumption outside the cave.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C11. *Agios Georgios Amorgos (Άγιος Γεώργιος–Αμοργός)*

Type: Extramural. Region: Cyclades. Island: Amorgos. Fieldwork: Survey. Coastality value: 21076.

References: Tsountas 1898, 138.

Chronology: Early Bronze IIA.

Description: Dummler reported prehistoric tombs.

C12. *Agios Georgios Aulonariou (Άγιος Γεώργιος Αυλωναρίου)*

Type: Extramural. Region: Euboia. Nearest village: Agios Georgios. Fieldwork: Rescue excavation. Coastality value: 42370.

References: *ArchDelt* 38 (1982): B1, 141.

Chronology: Early Bronze IIA.

Description: A built rectangular ossuary of the EH II period containing twenty – thirty skeletons.

C13. *Agios Ioannis (Άγιος Ιωάννης)*

Type: Cave. Region: Crete. Nearest village: Chania. Fieldwork: Research excavation. Coastality value: 1199.

References: Treuil 1970, 19–20; *ArchDelt* 36 (1981): B2, 395–396; Moody 1987, catalogue AI6; Godart & Tzedakis 1992, 44.

Chronology: Final Neolithic–Early Bronze I.

Description: Cretan FN burials were documented in the cave, but the picture is unclear due to disturbance. First documented usage is in the EN

C14. *Agios Ioannis o Eleemon (Άγιος Ιωάννης ο Ελεήμων)*

Type: Extramural. Region: Cyclades. Island: Thera. Fieldwork: Rescue excavation. Coastality value: 10261.

References: Marthari 2001, 109–11; Sotirakopoulou 2010, 831.

Chronology: Early Bronze III–Middle Bronze I.

Description: Rock–cut chamber tombs dated to the EC–MC transition. Only one tomb recovered, rest of cemetery destroyed by quarrying.

C15. *Agios Kosmas (Άγιος Κοσμάς)*

Type: Extramural. Region: Attica. Nearest village: Alimos. Fieldwork: Research excavation. Coastality value: 564.

References: Mylonas 1934, 258–279; Mylonas 1959; Maran 1998.

Chronology: Early Bronze I–IIB; (Early Bronze III–Late Bronze)

Description: Two cemeteries (north and south), east of the headland settlement. Cist graves and built graves. Thirty–two graves in the north cemetery, with around seven, mostly plundered graves in the south cemetery.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C16. *Agios Loukas (Άγιος Λουκάς)*

Type: Extramural. Region: Cyclades. Island: Syros. Fieldwork: Research excavation. Coastality value: 2009.

References: Tsountas 1899, 79.

Chronology: Early Bronze IIA–Middle Bronze I.

Description: Large cemetery of EC IIA graves fround near northern tip of Syros. One grave is slightly later and contained pottery contemporary with Phylakopi I and a MH kanthatos.

C17. *Agios Myronas (Άγιος Μύρωνας)*

Type: Extramural. Region: Crete. Nearest village: Agios Myronas. Fieldwork: Rescue excavation. Coastality value: 34837.

References: *Ergon* 1968 [1969], 102–111; *ArchDelt* 22 (1969): B2, 486; *ArchDelt* 23 (1969): B2, 403; *ArchDelt* 25 (1973): B2, 454–455.

Chronology: Middle Bronze I–II.

Description: Pithos and larnax burials.

C18. *Agios Nikolaos Anavyssos (Άγιος Νικόλαος–Ανάβυσσος)*

Type: Extramural/intramural. Region: Attica. Nearest village: Anavyssos. Fieldwork: Rescue excavation. Coastality value: 1472.

References: Hope Simpson & Dickinson 1979: 208–209; *ArchDelt* 51 (1996): B1, 65–66.

Chronology: Middle Bronze II.

Description: Cist tombs, as well as *pithoi* by the sea on the E and W sides of the neck of the promontory. Fine MH pottery in the vicinity.

C19. *Agios Nikolaos (Crete) (Άγιος Νικόλαος Κρήτη)*

Type: Extramural. Region: Crete. Nearest village: Agios Nikolaos. Fieldwork: Research excavation. Coastality value: 2098.

References: BCH 76 (1952), 242.

Chronology: Middle Bronze II–III.

Description: One small larnax and one small *pithos* burial. First usage is in the MM period, likely to be MM II–III.

C20. *Agios Pandeleimon Zefiria (Άγιος Παντελεήμων– Ζεφύρια)*

Type: Extramural. Region: Crete. Nearest village: Zefira. Fieldwork: Research excavation. Coastality value: 6646.

References: *ArchDelt* 21 (1966): B2, 386; Renfrew 1972, 512

Chronology: Early Bronze I.

Description: An EC I cemetery reported by Renfrew. Four EC burials.

C21. *Aigaleo (Αιγάλεω)*

Type: Extramural. Region: Attica. Nearest village: Aigaleo. Fieldwork: Rescue excavation. Coastality value: 5618.

References: *ArchDelt* 65 (2010): B1, 272–277; *ArchDelt* 65 (2010): B1, 276–277; Asimakou & Paschali 2020, 325–328.

Chronology: Early Bronze I.

Description: Several burials of EH/EC I date around Leoforos Kifisou in Aigaleo Rock cut chamber tombs with human remains present. Three further rock cut tombs around 2km away.

C22. *Ailias (Αϊλιας)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 27184.

References: *ArchDelt* 17 (1961–2): A 129–132; Papagiannopoulou 1991, 304

Chronology: Middle Bronze III.

Description: Cist tombs of MB date. Likely to be MC late based on analysis of Minoan imported pottery by Papagiannopoulou.

C23. *Aitania (Αϊτάνια)*

Type: Extramural. Region: Crete. Nearest village: Aitania. Fieldwork: Rescue excavation. Coastality value: 23345.

References: Dimopoulou–Rethemiotaki 2005, 259; Girella 2015, 126.

Chronology: Middle Bronze II–III.

Description: Pithos burial.

C24. *Akrotiraki (Ακρωτηράκι)*

Type: Extramural. Region: Cyclades. Island: Siphnos. Fieldwork: Rescue excavation. Coastality value: 4150.

References: Tsountas 1899, 73; *ArchDelt* 56–9 (2001–2004): B6, 136–137.

Chronology: Early Bronze I–IIA.

Description: Cemetery with EC I and EC IIA grave goods, further survey led to the excavation of two further tombs.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:CB (*Utilitarian uses of marine shell from funerary contexts*).

C25. *Akrotiri (Ακρωτήρι)*

Type: Extramural. Region: Cyclades. Island: Thera. Fieldwork: Research excavation. Coastality value: 1966.

References: Doumas 2008, 165–175.

Chronology: Early Bronze IIA–B.

Description: Rock cut chamber tombs of EBA date, though their assignation as tombs is not certain.

C26. *Akrotiri (Naxos) (Ακρωτήρι–Νάξος)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 3632.

References: Doumas 1977, 82.

Chronology: Early Bronze I–IIA.

Description: Cemetery of twenty–four cists, on promontory near centre of coast. Most are EC I with one EC II burial.

Relevant finds: Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C27. *Alyki–Artemis (Αλυκή–Αρτέμιδα)*

Type: Extramural. Region: Attica. Nearest village: Artemis. Fieldwork: Rescue excavation. Coastality value: 639.

References: Hope–Simpson 1979, 207; Stathi 2019.

Chronology: Early Bronze I.

Description: Two EH I graves.

C28. *Ano Koufonisi Agrilia (Άνω Κουφονήσι: Αγριλιά)*

Type: Extramural. Region: Cyclades. Nearest village: Ano Koufonisi. Fieldwork: Rescue excavation. Coastality value: 3720.

References: *ArchDelt* 25 (1970): B2, 428–430; *ArchDelt* 26 (1971): B2, 467; Zapheiropoulou 2008, 183–194.

Chronology: Early Bronze I/IIA.

Description: Seventy–two intact rock cut graves and a further twenty disturbed, were excavated. All dated to EC I/II (Kampos).

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C29. *Ano Koufonisi: Skopelitis field (Άνω Κουφονήσι: κτήμα Σκοπελίτη)*

Type: Extramural. Region: Cyclades. Nearest village: Ano Koufonisi. Fieldwork: Rescue excavation. Coastality value: 188.

References: Zapheiropoulou 2008, 183–194.C

hronology: Early Bronze I/IIA.

Description: Cemetery had been severely damaged by looters. Nine grave pits were identified with fragmentary grave goods.

C30. *Ano Koufonisi: Tzavaris field (Άνω Κουφονήσι: κτήμα Τσάβαρη)*

Type: Extramural. Region: Cyclades. Nearest village: Ano Koufonisi. Fieldwork: Rescue excavation. Coastality value: 703.

References: Zapheiropoulou 2008, 183–194.

Chronology: Early Bronze I/IIA.

Description: Cemetery had been the target of looters. On the highest level of the field were many pits cut into bedrock, some of which contained grave offerings. An area of inhumations lay towards the foot of the hill.

C31. *Anopoli (Ανώπολη)*

Type: Extramural. Region: Crete. Nearest village: Anopoli. Fieldwork: Rescue excavation. Coastality value: 12074.

References: *ArchDelt* 4 (1918), 58–60; Petit 1990, 49.

Chronology: Middle Bronze I.

Description: One *pithos* burial in a pit.

C32. *Antiparos: Paralia Sostis (Αγία Άννα)*

Type: Extramural. Region: Cyclades. Island: Antiparos. Fieldwork: Rescue excavation. Coastality value: 564.

References: Bent 1884, 49; Simpson & Dickinson 1979, 324; Renfrew 1972, 527: Antiparos, no.13.

Chronology: Early Bronze I.

Description: Cist tomb cemetery.

C33. *Antron (Άντρον)*

Type: Extramural. Region: Phthiotis. Nearest village: Glifa. Fieldwork: Rescue excavation. Coastality value: 1029.

References: Papakonstantinou 1999a; Papakonstantinou 1999b.

Chronology: Middle Bronze III–Late Bronze Age.

Description: Grave circles at Antron – likely *tumuli* but later activity removed height of the mound. At least ten tombs can be dated to MH–LH transition with later usage also attested.

C34. *Apantima (Απάντημα)*

Type: Extramural. Region: Cyclades. Island: Antiparos. Fieldwork: Rescue excavation. Coastality value: 1294.

References: Tsountas 1898, 140; Doumas 1977, 25–26.

Chronology: Early Bronze I–IIA.

Description: Cemetery with tombs ranging from EC I to EC IIA.

C35. *Aphendika (Αφεντικά)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 10298.

References: *ArchDelt* 17 (1961–1962): A, 148.

Chronology: Early Bronze I–IIA.

Description: Seventy graves excavated over a large area. Cemetery dates from EC I–IIA

C36. *Aphendis Kaminaki (Αφέντης Καμινάκι)*

Type: Extramural. Region: Crete. Nearest village: Kaminaki. Fieldwork: Rescue excavation. Coastality value: 81610.

References: Watrous 1982, 60; *ArchDelt* 51 (1996): B2, 658.

Chronology: Early Bronze IIA; Middle Bronze II–III.

Description: Pithos burials were reported.

C37. *Aphendis Kastelli (Αφέντης Καστέλλι)*

Type: Rock shelter. Region: Crete. Nearest village: Kastelli. Fieldwork: Rescue excavation. Coastality value: 38890.

References: Hazzidakis 1934, 76, n.7; Rutkowski & Nowicki 1996, 50.

Chronology: Early Bronze I.

Description: Rock shelter, with *pithoi* reported for burials.

C38. *Aphidna (Αφίδναι)*

Type: Extramural. Region: Attica. Nearest village: Agios Stephanos. Fieldwork: Research excavation. Coastality value: 41215.

References: Wide 1896, Blackburn 1970, 193–194; Hielte-Stravropoulou & Wedde 2002; Forsen 2010, 223–234.

Chronology: Early Bronze II–Middle Bronze I.

Description: Tumulus now lost. EH II–EH III dating of the finds. Thirteen burials in shafts, pits, cists and *pithoi*. Dated to MH by Wide (1896), a date upheld by Hielte–Stavropoulou and Wedde (2002, 24), though Forsen (2010, 225) argues for a late EH II date.

C39. *Aplomata (Απλώματα)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 938.

References: Kontoleon 1970, 146; 1971, 172; 1972, 143; Photou 1983, 23; Karantzali 1996, 20.

Chronology: Early Bronze IIA.

Description: The cemetery consists of twenty–seven burials.

C40. *Apollo Maleatas (Epidavros) (Απόλλων Μαλεάτας: Επίδαυρος)*

Type: Extramural. Region: Argolid. Nearest village: Epidavros. Fieldwork: Research excavation. Coastality value: 50578.

References: Theodorou–Mavrommatidi 2003, 256–259, fig. 12–14; 2004, 1170–1173, pl. 3; Theodorou–Mavrommatidi 2011, 773–780.

Chronology: Early Bronze I; (Middle Bronze II)

Description: Several EH I burials and MH *tumulus*. Unclear if the *tumulus* pertains to mortuary practices in the area or whether it is indicative of some ritualisation of a previous cemetery.

Relevant finds: Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C41. *Archanes Phourni (Αρχάνες Φουρνί)*

Type: Extramural. Region: Crete. Nearest village: Archanes. Fieldwork: Research excavation. Coastality value: 34306.

References: *ArchDelt* 20 (1965): A, 110–118; 1966, 174–85; 1971, 276–283; 1972, 310–353; 1974, 327–351; 1975, 179–181, 167–171, 174–178, 181–187; 1977 459–482; Sakellarakis & Sakellaraki 1979, 344–351, 381–385, 395–396; 1980a, 320; 1982, 400–401; Sakellarakis & Sapouna–Sakellaraki 1997, 169–222; Papadatos 2005.

Chronology: Early Bronze IIA–Late Bronze I.

Description: Three *tholoi* and several 'burial buildings' (House Tombs). Tholos Γ and E begin in EM IIA until MM II. Tholos B begins in MM IA until LM I. A mix of larnakes and *pithoi* found inside. Tholos B is disturbed, while Tholoi Γ and E contain eighteen and fifty–six burials respectively. Around sixteen rectangular burial buildings. They contain mostly larnax burials, along with some *pithos* burials. Secondary treatment: skulls piled in the corners. Around eight hundred and fifty individuals in total, along with a multitude of grave offerings.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 5A: **5.5, 5.6, 5.7**.

C42. *Argos (Άργος)*

Type: Extramural. Region: Argolid. Nearest village: Argos. Fieldwork: Rescue excavation. Coastality value: 3128.

References: *ArchDelt* 28 (1973): B1, 94–95, 97–99, 112; Dietz 1991, 132–140; *ArchDelt* 55 (2000): B1, 181–182; *ArchDelt* 56–9 (2001–2004): B4, 26–28, 67–68; Papadimitriou 2010, 45–56.

Chronology: Early Bronze IIB – Late Bronze III.

Description: Several cemeteries near MH Argos. Mix of pit and cist tombs. Cemetery continues into LH III. Earliest burials date to the EH (Courbin 1954, 176), most likely EH IIB (Pullen 1985, 119).

Relevant finds: Appendix 5A: **5.29**.

C43. *Aria (Άρια Αργολίδας)*

Type: Intramural. Region: Argolid. Nearest village: Nafplio. Fieldwork: Rescue excavation. Coastality value: 1920.

References: Georgiadis 2011, 166.

Chronology: Final Neolithic.

Description: Oval pit grave of a child dating to FN, with two vessels near the legs.

C44. *Asine (Ασίνη)*

Type: Intramural. Region: Argolid. Nearest village: Asine. Fieldwork: Research excavation. Coastality value: 895.

References: Frodin & Persson 1938, 116–128; Dietz 1980; Nordquist 1987, 91, 95; Dietz 1991 145–147.

Chronology: Early Bronze II–Late Bronze Age.

Description: Intramural child graves from EH II contexts. Graves of an MH date seem to have been placed in areas of the lower town, which may have been wasteland or grazing areas. Around sixty–eight pit graves, fifty–three cist graves, as well as around thirteen cist graves on Barbouna hill.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C45. *Askitario (Ασκηταριό)*

Type: Intramural/extramural. Region: Attica. Nearest village: Raphina. Fieldwork: Research excavation. Coastality value: 891.

References: Theocharis 1953–4, 59–76; 1955; Maran 1998; Weiberg 2007, 246.

Chronology: Early Bronze I–IIB.

Description: Extramural graves at Askitario have not been excavated and are given a general EH II dating because of the finds in the settlement. Intramural child graves in EH II phases of the settlement.

C46. *Askloupi (Ασκλούπι)*

Type: Intramural/extramural. Region: Dodecanese. Island: Kos. Fieldwork: Research excavation. Coastality value: 4500.

References: Morricone 1972–3, 261–271.

Chronology: Early Bronze IIB–III.

Description: EB II jar burials. Controversy over the dating with some preferring an EB III dating.

C47. *Asprochorio (Άσπρο Χωριό)*

Type: Extramural. Region: Cyclades. Island: Melos. Fieldwork: Survey. Coastality value: 3405.

References: Renfrew 1972, 512.

Chronology: Early Bronze III–Middle Bronze I?

Description: Rock cut tombs dated to early MB from a cemetery on the eastern coast.

C48. *Asteria Glyphada (Αστέρια Γλυφάδας)*

Type: Extramural. Region: Attica. Nearest village: Glyfada. Fieldwork: Rescue excavation. Coastality value: 340.

References: *ArchDelt* 56–9 (2001–2004): B1, 479–480; *Ergon* 2012, 13–17; *Ergon* 2015, 9–11; *ArchDelt* 61 (2006): B1, 215; Kaza–Papageorgiou 2020, 309

Chronology: Early Bronze I–IIA.

Description: Extensive EH I–II cemetery on the side of a low hill on the Pounda peninsula. Clusters of small chamber tombs cut into the hard limestone and an earlier pit is associated with an undiscovered FN–EH I settlement and metalworking debris. Second phase of the pit (EH II) relates to the cemetery and its functions.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C49. *Atalanti (Αταλάντη)*

Type: Extramural. Region: Boiotia. Nearest village: Atalanti. Fieldwork: Rescue excavation. Coastality value: 4472.

References: *ArchDelt* 56–59 (2001–2004): B2, 375.

Chronology: Early Bronze III.

Description: EH III *tumulus* found under Hellenistic–Roman building complex. The edge of the *tumulus* is defined by a peribolos wall of large unworked stones, while the interior is filled with small and medium–sized stones.

C50. *Athens (Αθήνα)*

Type: Extramural. Region: Attica. Nearest village: Athens. Fieldwork: Rescue excavation. Coastality value: 10483.

References: Iakovides 1962: 53, 221; Immerwahr 1971; 1982; Pullen 1985, 127; Dousougli 1998, 137.

Chronology: Final Neolithic; Early Bronze II; Middle Bronze II.

Description: Shaft tomb in Agora dated by Immerwahr to FN. A MH date had been suspected, though an FN date is more likely based on affinities in the pottery with Kephala culture of Kea. Seven MH cists and a pit grave were also found in the acropolis area. A tomb also noted in the Kerameikos, assigned to EH II on basis of similarities with Agios Kosmas and Tsepi.

C51. *Athimari (Αθυμάρι)*

Type: Extramural. Region: Crete. Nearest village: Kenourgio Chorio. Fieldwork: Survey. Coastality value: 19672.

References: Panagiotakis 2006, 397.

Chronology: Middle Bronze I–II.

Description: A cemetery reported, though the mode of burial was not specified.

C52. *Avdheli (Άβδελι)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Survey? Coastality value: 10830.

References: *ArchDelt* 18 (1963): B, 279; Doumas 1977, 122.

Chronology: Early Bronze IIA.

Description: Looted cemetery. Three graves discovered were unusual with the upper part cists, with lower part stone lined pits.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 4: EB (*Marine objects in body ornamentation from funerary contexts*).

C53. *Bairia Gazi (Μπαϊρια Γάζι)*

Type: Extramural. Region: Crete. Nearest village: Gazi. Fieldwork: Rescue excavation. Coastality value: 1401.

References: *ArchDelt* 39 (1984): B, 296.

Chronology: Early Bronze III–Middle Bronze I.

Description: House tomb. Two larnakes and a *pithos* found inside.

C54. *Brauron (Βραυρώνα)*

Type: Extramural/intramural. Region: Crete. Nearest village: Vravrona. Fieldwork: Rescue excavation. Coastality value: 1410.

References: *Ergon* 1962, 35; *ArchDelt* 39 (1984): B1, 45.

Chronology: Middle Bronze II.

Description: Cist tombs were reported, as was an intramural child burial.

C55. *Chalandriani (Χαλάνδρι)*

Type: Extramural. Region: Cyclades. Island: Syros. Fieldwork: Research excavation. Coastality value: 3836.

References: Tsountas 1898–99; *Ergon* 57 (2010), 7–52; *ArchDelt* 63 (2008): B2, 1095–1097; *Ergon* 58 (2011), 32; Doumas 1977, 128–130.

Chronology: Early Bronze IIA–B.

Description: Preeminent cemetery of the Keros-Syros phase in the Cyclades (EC IIA), which is its main phase, though usage continues until the Kastri phase (EC IIB). Mostly excavated by Tsountas, with several new tombs excavated in recent years. Predominantly corbelled vaulted tombs, the total number is now estimated at around a thousand graves.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:CB (*Utilitarian uses of marine shell from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 4: EB (*Marine objects in body ornamentation from funerary contexts*); Appendix 5A: **5.105, 5.106, 5.128, 5.129**.

C56. *Chalkis: Vlicha (Χαλκίς Βληχά)*

Type: Intramural. Region: Euboia. Nearest village: Chalkis. Fieldwork: Rescue excavation. Coastality value: 1695.

References: *ArchDelt* 32 (1977): B1, 98–100.

Chronology: Middle Bronze III.

Description: Intramural child burials inside MH houses.

C57. *Chania (Χανιά)*

Type: Extramural. Region: Crete. Nearest village: Chania. Fieldwork: Rescue excavation. Coastality value: 1046.

References: Theophaneides 1940, 484.

Chronology: Middle Bronze I.

Description: MM I *pithos* burial.

C58. *Corinth Cheliotomylos (Κόρινθος: Χελιοτόμυλος)*

Type: Extramural. Region: Corinthia. Nearest village: Korinthos. Fieldwork: Research excavation. Coastality value: 21851.

References: Pullen 1985, 113.

Chronology: Early Bronze IIA.

Description: A kilometre west of the Temple of Apollo at Corinth a ‘well’ was excavated containing a homogeneous deposit of EH IIA pottery, as well as between twenty to thirty individuals. Most of the internments were a mass of jumbled bones, which could be a result of some form of secondary treatment.

C59. *Corinth Temple of Apollo (Κόρινθος: Ναός του Απόλλωνα)*

Type: Extramural. Region: Corinthia. Nearest village: Korinthos. Fieldwork: Research excavation. Coastality value: 19522*.

References: Pullen 1985, 106–112;

Chronology: Early Bronze IIA; Middle Bronze II.

Description: Rock–cut chamber tombs of a probable EH II dating recognised in small numbers. Also found were MH extramural graves, roughly dating to MH II.

C60. *Delpriza Kranidi (Δελπρίζα Κρανιδίου)*

Type: Extramural. Region: Argolid. Nearest village: Kranidi. Fieldwork: Research excavation. Coastality value: 794.

References: Kossyva 2011 329–366.

Chronology: Early Bronze I/II.

Description: EC/EH I/II Ossuary. Inside the tomb were piles of human bones and skulls in successive layers. At least thirty individuals represented.

C61. *Dendra (Δενδρά)*

Type: Extramural. Region: Argolid. Nearest village: Midea. Fieldwork: Research excavation. Coastality value: 3457.

References: Cavanagh & Mee 1998, 38

Chronology: Middle Bronze III – LBA.

Description: Rich burials in the *tumuli* date to MH III– LH I, while the other tombs postdate this study.

C62. *Diakoftis (Διακόφτης)*

Alternate name: Ormos Korphos. Type: Extramural. Region: Cyclades. Island: Mykonos. Fieldwork: Research excavation. Coastality value: 1530.

References: Belmont & Renfrew 1964, 398.

Chronology: Early Bronze IIA.

Description: Two rock–cut tombs with EC IIA grave goods.

C63. *Dimini: Toumba (Διμήνι: Τούμπα)*

Type: Extramural. Region: Thessaly. Nearest village: Dimini. Fieldwork: Research excavation. Coastality value: 1845.

References: Tsountas 1908, 147–152.

Chronology: Middle Bronze III–LBA.

Description: Cist burials at Dimini, some dating to the late MH period (c. MH III). The *tholos* tombs postdate this study.

C64. *Dokathismata (Δωκαθίσματα)*

Type: Extramural. Region: Cyclades. Island: Amorgos. Fieldwork: Rescue excavation. Coastality value: 18511.

References: Tsountas 1898, 138, 154, 165.

Chronology: Early Bronze IIA.

Description: Twenty graves of EC IIA date excavated.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts).*

C65. *Drios (Δριός)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 1066.

References: Tsountas 1898, 139; Renfrew 1969, 6; Hope Simpson & Dickinson 1979, 320.

Chronology: Early Bronze I–IIA.

Description: EC I cemetery possibility it extends into EC IIA.

C66. *Eleusis (Έλευσις)*

Type: Extramural. Region: Attica. Nearest village: Elefsina. Fieldwork: Rescue excavation. Coastality value: 1043.

References: Mylonas 1932, 104–117; Mylonas 1975; Hope Simpson 1981, 46.

Chronology: Middle Bronze II–Late Bronze Age.

Description: Middle Helladic west cemetery. Most cist tombs are MH II, though there are tombs going through until the end of the LBA.

C67. *Evraika (Εβραϊκά)*

Type: Rock shelter. Region: Crete. Nearest village: Pacheia Ammos. Fieldwork: Rescue excavation. Coastality value: 1237.

References: Pariente 1991, 940; Haggis 2005, 141; Tsipopoulou 2008, 132.

Chronology: Middle Bronze I–II.

Description: Two rock shelters, with one in use from MM I–II, with the other possibly being contemporary or part of a larger burial region.

C68. *Galana Krimna (Γαλανά Κρημνά)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 4049.

References: Tsountas 1898, 139, 155; Renfrew 1972, no. 16; Hope Simpson & Dickinson 1979, 321.

Chronology: Early Bronze I.

Description: Twenty–eight cist graves reported near the south tip of the island. All EC I in date.

C69. *Galanados (Γαλανάδος)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 5488.

References: *ArchDelt* 62 (2007): B2, 1147–1148; *ArchDelt* 63 (2008): B2, 1105–1106.

Chronology: Early Bronze IIB.

Description: Cist tomb containing the remains of two deceased, presumably secondary burials, as well as a beaker of likely EC IIB (Kastri) date. The tomb in question belongs to a necropolis, today largely destroyed.

C70. *Glypha (Γλύφα)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 4923.

References: Tsountas 1898, 139, 155; Doumas 1977, 25; Hope Simpson & Dickinson 1979, 321.

Chronology: Early Bronze I.

Description: Ten EC I cists excavated.

C71. *Gonia (Γωνιά)*

Type: Intramural. Region: Corinthia. Nearest village: Agios Dimitrios. Fieldwork: Research excavation. Coastality value: 5465.

References: Blegen 1930, 62–64.

Chronology: Middle Bronze II–III.

Description: Seven MH shaft and cist graves of children and adults deposited on a hill where there were structures dating to EH and MH.

C72. *Gournes (Γούρνες)*

Type: Extramural. Region: Crete. Nearest village: Gournes. Fieldwork: Rescue excavation. Coastality value: 1139.

References: House tombs: *ArchDelt* 4 (1918), 45–87; Soles 1992, 148–151; Sbonias 1995, 91, 103–104, 113. Rock–cut tombs: *ArchDelt* 54 (1999): B2, 853–856; Galanaki 2006.

Chronology: Early Bronze I (Rock–cut tombs); Middle Bronze I–II (House tombs)

Description: House tomb: (Tomb A), with an associated building. Twenty burials reported in the north room, ten in the central room and one in the south room. The building also contained a plethora of associated items. The House tomb begins use in MM IA and continues until MM IB/II. Also a cemetery with thirty–six rock–cut tombs with many others probably unexcavated. Most consisted of a burial chamber and an antechamber and dated to EM I.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C73. *Gournia: North Cemetery (Γουρνιά: Βόρειο Νεκροταφείο)*

Type: Extramural. Region: Crete. Nearest village: Gournia. Fieldwork: Research excavation. Coastality value: 1653.

References: Boyd Hawes *et al.* 1908, 56; Soles 1979, 158–416; 1992, 3–38; Davis 1977, 87–93; Herrero 2014, 228.

Chronology: Early Bronze II–Middle Bronze III.

Description: Five house tombs and three rock shelters found in the "North Cemetery" at Gournia, with some beginning in use EM II (III, V and VI) and the rest beginning use in MM I (I, II, IV, VII and VIII). Some of the House tombs may have contained larnakes. Many of the tombs contained few burials, indicating some form of secondary treatment of the remains elsewhere.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 5A: **5**.**27**.

C74. *Gournia Sphoungaras (Γουρνιά: Σφουγγαράς)*

Type: Extramural. Region: Crete. Nearest village: Gournia. Fieldwork: Research excavation. Coastality value: 1514.

References: Rock Shelters: Boyd Hawes *et al.* 1908, 56; Hall 1912, 43–46; Pithos cemetery: Hall 1912, 58–72.

Chronology: Early Bronze I–Late Bronze I.

Description: Three rock shelters (I, II and IV) and a *pithos* cemetery at the Sphoungaras cemetery of Gournia. Rock shelters I and II begin in use in EM I and continue to EM II. Rock shelter IV begins in MM I and likely continues into MM II and possibly contains a larnax. The *pithos* cemetery begins in MM I and continues in usage until LM I and contains 150 upside–down *pithoi* and one larnax. Also present are several 'deposits' which may be disturbed cist burials. Deposit A: EM II, Deposit B: EM IIB. MM I deposit: EM III.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 5A: **5**.**35, 5**.**36, 5**.**62**.

C75. *Hypaton (Ύπατον)*

Type: Extramural. Region: Boiotia. Nearest village: Ipato. Fieldwork: Rescue excavation. Coastality value: 26127.

References: *ArchDelt* 25 (1970): B1, 224–226.

Chronology: Early Bronze IIA.

Description: Rock–cut chamber tombs, Located in the NE part of the Theban plain. Three burials found. Only one had grave goods. Multiple sherds of a pot dated to EH. Assumes that the burial space extends to the west by 150m. Also a settlement a few hundred metres south of the modern village.

C76. *Isthmia (Ίσθμια)*

Type: Extramural. Region: Corinthia. Nearest village: Isthmia. Fieldwork: Rescue excavation. Coastality value: 1114.

References: Pullen 1985, 120.

Chronology: Early Bronze II.

Description: Eroded deposit with limited evidence of human remains, as well as EH IB–EH IIA pottery.

C77. *Kalamaki (Καλαμάκι)*

Type: Extramural. Region: Corinthia. Nearest village: Isthmia. Fieldwork: Rescue excavation. Coastality value: 1663.

References: Broneer 1958, 28; Pullen 1985, 117.

Chronology: Early Bronze II.

Description: East of Isthmus of Corinth, the construction of the national road destroyed several tombs. No settlement noted in the area and the pottery was likely EH IIA from Aegina.

C78. *Kalergi (Καλέργι)*

Type: Extramural. Region: Crete. Nearest village: Kastelli. Fieldwork: Rescue excavation. Coastality value: 31022.

References: Branigan 1993, 148; Goodison & Guarita 2006, 202.

Chronology: (Early Bronze Age) Middle Bronze III.

Description: MM III *tholos*, close to a probable MM III settlement. Possibly an unexcavated EM *tholos* on hill, though this has been disputed (Goodison & Guarita 2006, 202).

C79. *Kalivotopos (Καλυβότοπος)*

Type: Extramural. Region: Crete. Nearest village: Episkopi. Fieldwork: Rescue excavation. Coastality value: 25346.

References: Platon 1951a, 445, Panagiotakis 2006, 383.

Chronology: Middle Bronze I–II.

Description: House Tomb with larnax burials.

C80. *Kalo Chorio (Καλό Χωριό)*

Type: Extramural. Region: Crete. Nearest village: Kalo Chorio. Fieldwork: Rescue excavation. Coastality value: 2832.

References: Haggis 1996.

Chronology: Middle Bronze I–II.

Description: Two House tombs (A and B). Tomb A contained five larnax burials, while Tomb B contained one *pithos* burial.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C81. *Kalogries (Καλόγριες)*

Type: Extramural. Region: Cyclades. Island: Melos. Fieldwork: Rescue excavation. Coastality value: 4890.

References: *ArchDelt* 20 (1965): B, 508; Doumas 1977, 25, Renfrew 1972, 512.

Chronology: Early Bronze I.

Description: Twelve EC I tombs excavated.

C82. *Kampos (Κάμπος)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 637.

References: Doumas 1977, 25.

Chronology: Early Bronze II.

Description: EC I–IIA cist tomb cemetery.

C83. *Kampos Tis Makris (Κάμπος της Μάκρης)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 2109.

References: Stephanos 1906, 86; *ArchDelt* 17 (1961–2): A, 140; *ArchDelt* 20 (1965): B, 50–5l; Photou 1983, 34.

Chronology: Early Bronze I.

Description: Around sixty graves with EC I goods close to the east coast. Thirty were looted. Only one burial in each.

C84. *Kapsala (Κάψαλα)*

Type: Extramural. Region: Cyclades. Island: Amorgos. Fieldwork: Rescue excavation. Coastality value: 20318.

References: Tsountas 1898, 138, 152.

Chronology: Early Bronze IIA.

Description: Eleven graves excavated here on the SE coast. All are EC IIA with one possible EC I–II.

C85. *Karvounolakkoi (Καρβουνόλακκοι)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 2533.

References: *ArchDelt* 17 (1961–2): A, 109.

Chronology: Early Bronze I–IIA.

Description: Large cemetery with more than eighty–two graves. Twenty–two were not looted.

C86. *Karydi (Καρύδι)*

Type: Cave. Region: Crete. Nearest village: Karydi. Fieldwork: Rescue excavation. Coastality value: 40557.

References: Faure 1964, 67.

Chronology: Early Bronze I.

Description: Cave burial dated to the EM I period.

C87. *Karystos Agia Triada (Κάρυστος Αγία Τριάδα)*

Type: Cave. Region: Euboia. Nearest village: Kalivia. Fieldwork: Rescue excavation. Coastality value: 13099.

References: *ArchDelt* 64 (2009): B2, 1018–1019; *ArchDelt* 65 (2010): B2, 1789–1790; Mavridis & Tankosic 2016, 207–242.

Chronology: Early Bronze IIA.

Description: Cave with EH II burials, with remnants of earlier and later periods.

C88. *Kastri (Kythera) (Καστρί [Κύθηρα])*

Type: Extramural. Region: Laconia. Island: Kythera. Fieldwork: Research excavation. Coastality value: 7132.

References: Coldstream & Huxley 1972, 221–224; Bevan *et al.* 2002b, 55–94.

Chronology: Middle Bronze II–Late Bronze.

Description: Several tombs around the vicinity of the site at Kastri. Tholoi, cist and chamber tombs are known. Only chronologically relevant tombs included here.

C89. *Katelionas (Κατελίωνας)*

Type: Extramural. Region: Crete. Nearest village: Katelionas. Fieldwork: Survey. Coastality value: 52074.

References: Branigan 1998, 63, 73–74.

Chronology: Middle Bronze I–III

Description: Niches in the rock contained cists, though no human bones were found *in situ*.

C90. *Kato Koufonisi (Κάτω Κουφονήσι)*

Type: Extramural. Region: Cyclades. Island: Kato Koufonissi. Fieldwork: Rescue excavation. Coastality value: 772.

References: *ArchDelt* 25 (1970): B2. 429–430.

Chronology: Early Bronze IIA

Description: EC tomb opened by accident. Near Nero, in northeast part of the island.

C91. *Keli (Κελί)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 4063.

References: Stephanos 1903, 53; *ArchDelt* 17 (1961–2): A, 112; Doumas 1977, 25

Chronology: Early Bronze I.

Description: Ten cists of EC I date excavated.

C92. *Kephala (Κεφάλα)*

Type: Extramural. Region: Cyclades. Island: Kea. Fieldwork: Research excavation. Coastality value: 552.

References: Caskey 1962, 263–266; Caskey 1964, 314–335; Coleman 1977.

Chronology: Final Neolithic.

Description: FN cemetery. Thirty–one graves uncovered in the cemetery below the acropolis.

C93. *Kephalari Magoula (Κεφαλάρι Μαγούλα)*

Type: Intramural. Region: Argolid. Nearest village: Kefalari. Fieldwork: Rescue excavation. Coastality value: 1030.

References: *ArchDelt* 29 (1973–4): B2, 246–247.

Chronology: Middle Bronze II

Description: Several pit burials in the *magoula* at Kephalari. The stratigraphy is not certain, but an MH layer contained clay lined pit burials.

C94. *Kephali Aphroditis (Κεφάλι Αφροδίτης)*

Type: Intramural. Region: Crete. Nearest village: Episkopi. Fieldwork: Rescue excavation. Coastality value: 36646,

References: D.Reese pers.comm.

Chronology: Early Bronze I.

Description: At least one tomb noted at the settlement.

Relevant finds: Appendix 3:F (Marine food waste remains from funerary contexts).

C95. *Kephali Sphendyli (Κεφάλι Σφενδύλι)*

Type: Extramural. Region: Crete. Nearest village: Sphendyli. Fieldwork: Rescue excavation. Coastality value: 31789.

References: ID2786.

Chronology: Early Bronze I.

Description: Under a later structure, and below a layer of sterile soil, were twenty–four FN/EM I burials.

C96. *Kesseri (Κέσσερι)*

Type: Extramural. Region: Boiotia. Nearest village: Oinofyta. Fieldwork: Rescue excavation. Coastality value: 7897.

References: *ArchDelt* 24 (1969): B1, 187.

Chronology: Early Bronze IIA.

Description: Near Schimatari overlooking Southern Euboic gulf. In eastern part of the site seven looted rock–cut burials. Similar to tombs at Lithares.

C97. *Kiapha Thiti (Κιάφα Θήτι)*

Alternate name: Kontra Gkliate. Type: Intramural. Region: Argolid. Nearest village: Anixi. Fieldwork: Rescue excavation. Coastality value: 8357.

References: Maran 1992.

Chronology: Middle Bronze II.

Description: MH Cist tomb cemetery containing burials of children.

C98. *Knossos: Ailias (Κνωσσός: Αηλιάς)*

Type: Extramural. Region: Crete. Nearest village: Knossos. Fieldwork: Research excavation. Coastality value: 15244.

References: Hood & Smyth 1981, nos. 257, 259–260.

Chronology: Middle Bronze II–III.

Description: Eight chamber tombs, most can be assigned an MM II date, with some MM III. Sixty individuals in *pithoi*, five pit burials and twenty–three larnax burials.

Relevant finds: Appendix 4:EC (*Manuports and miscellany)*.

C99. *Knossos: Gypsades (Κνωσσός: Γυψάδες)*

Type: Extramural. Region: Crete. Nearest village: Knossos. Fieldwork: Research excavation. Coastality value: 12667.

References: Hood *et al.* 1958–9, 194–262; Hood & Smyth 1981, nos. 307, 308, 313, 330, 331; Herrero 2014, 232–234.

Chronology: Middle Bronze II–Late Bronze I.

Description: One *tholos*, one house tomb (Building II), one chamber tomb (XVIII) and three tombs of an unknown type reported. The *tholos*, house tomb and chamber tomb are made in MM II.

C100. *Knossos: Hutchinson Tomb (Κνωσσός: Ο τάφος του Hutchinson)*

Type: Extramural. Region: Crete. Nearest village: Knossos. Fieldwork: Research excavation. Coastality value: 9415.

References: Karo 1935, 240–241; Hood & Smyth 1981, no. 140.

Chronology: Middle Bronze II–III.

Description: Could have been an enlarged rock shelter or a rock–cut chamber tomb. Burial and *pithoi* were found in association with MM II and MM III material culture.

C101. *Knossos Mavrospelio (Κνωσσός: Μαυρόσπηλιο)*

Type: Extramural. Region: Crete. Nearest village: Knossos. Fieldwork: Research excavation. Coastality value: 9344.

References: Forsdyke 1926–7, 243–296; Hood & Smyth 1981, no.249, 250, 251, 254.

Chronology: Middle Bronze II–Late Bronze I.

Description: Three chamber tombs and three unexcavated *pithos* burials. Chamber tombs begin in use in MM II and continue in use until LM I and later, with a mix of larnakes and *pithoi*. The unexcavated tombs are assumed to have been MM and may possibly be from the same date as the chamber tombs.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 5A: **5.42, 5.70, 5.75, 5.93, 5.94, 5.95**.

C102. *Kolonna (Κολώννα)*

Type: Intramural. Region: Saronic. Island: Aegina. Fieldwork: Research excavation. Coastality value: 199.

References: Walter 1981, 179–184; Higgins 1987, 182; Kilian-Dirlmeier 1997; 2003, 29–32.

Chronology: Early Bronze I–Late Bronze I.

Description: MH II Shaft Grave, overlain by a semi–circular *tumulus*. EH I–LH burials in the settlement of which most were infants.

C103. *Korinos (Κορινός)*

Type: Intramural. Region: Thessaly. Nearest village: Katerini. Fieldwork: Rescue excavation. Coastality value: 3432.

References: Besios & Adaktylou 2008, 235–240; *ArchDelt* 62 (2007): B2, 874.

Chronology: Final Neolithic.

Description: Ditch burial. Three burials were found inside this ditch.

Relevant finds: Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts).*

C104. *Koutsouria (Κουτσούρια)*

Type: Intramural. Region: Argolid. Nearest village: Nafplio. Fieldwork: Research excavation. Coastality value: 2455.

References: *ArchDelt* 28 (1973): B1, 90; *ArchDelt* 29 (1974): B2, 202; Georgiadis 2011, 166.

Chronology: Final Neolithic.

Description: Burial in a rock–cavity, covered by large stones.

C105. *Krasi Armi (Κράσι Αρμί)*

Type: Extramural. Region: Crete. Nearest village: Krasi. Fieldwork: Rescue excavation. Coastality value: 46047.

References: Evans 1928, 39, n.4; Zois 1968a, 66–68; 1998c, 229–237.

Chronology: Early Bronze I.

Description: Two *tholoi* (A and B) of the EM I period.

C106. *Krassadhes (Κρασσάδες)*

Type: Extramural. Region: Cyclades. Island: Antiparos. Fieldwork: Rescue excavation. Coastality value: 3350.

References: Tsountas 1898, 161.

Chronology: Early Bronze I.

Description: Cemetery with at least fifty graves.

C107. *Lakkoudhes (Λακκούδες)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 4001.

References: Doumas 1977, 73, 120.

Chronology: Early Bronze I.

Description: Twenty–five graves, of which only six were unplundered.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix4:EB (*Marine objects in body ornamentation from funerary contexts*).

C108. *Lakkoudhes A (Λακκούδες Α)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 4832.

References: Doumas 1977, 120–122.

Chronology: Early Bronze IIA.

Description: Small EC IIA cemetery of four tombs of a likely larger cemetery now destroyed.

C109. *Lefkandi (Λευκαντί)*

Type: Extramural. Region: Euboia. Nearest village: Lefkandi. Fieldwork: Research excavation. Coastality value: 627.

References: Sapouna–Sakellaraki 1995, 41–54.

Chronology: Middle Bronze II.

Description: Two MH chamber tombs, double chamber tombs (i.e. one leads into the other). Chamber 1 had been looted with scanty MH sherds. Underneath the floor level was MH settlement remains, in which were disturbed remains of burials of the MH.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C110. *Lefkes (Λεύκες)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 15608.

References: Tsountas 1898, 140; Renfrew, 1969, 6.

Chronology: Early Bronze I.

Description: EC I cist tomb cemetery.

C111. *Leivadhi (Λειβάδι)*

Type: Extramural. Region: Cyclades. Island: Despotiko. Fieldwork: Rescue excavation. Coastality value: 5717.

References: Tsountas 1898, 162; Simpson & Dickinson 1979, 325.

Chronology: Early Bronze I–II.

Description: Three groups of robbed tombs found on the south coast. Dating from EC I to EC IIA. Thirteen graves.

C112. *Leptokarya (Λεπτοκαρυά)*

Type: Extramural. Region: Thessaly. Nearest village: Fieldwork: Rescue excavation. Coastality value: 1215.

References: Poulaki–Pantermali *et al.* 2007, 185–190.

Chronology: Middle Bronze II–III.

Description: Various tombs ranging in date from MH II to MH III. Tomb 11 (*tumulus*) is dated from 2010–1770 BC, according to C14, shortly before the destruction layer. The other burials were in pits marked by stonework. Tombs 7 and 8 continue into MH III.

C113. *Lerna intramural cemetery (Λέρνα Νεκροταφείο εντός των τειχών)*

Type: Intramural. Region: Argolid. Nearest village: Myloi. Fieldwork: Research excavation. Coastality value: 552.

References: Caskey 1958, 136; Caskey 1959, 205; Blackburn 1970; Angel 1971; Banks 2013, 419–421; Banks 2015, 175–180.

Chronology: Final Neolithic; Early Bronze III–Late Bronze I.

Description: Burials within the settlement of Lerna. Two FN burials noted. No EH I–II burials found. At least eight infants buried in EH III. Ninety–one pits and ninety–two cists recorded of the MH period. Likely that the extramural cemeteries have not been located. Tumulus built at end of EH II with two LH I shaft graves associated.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*); Appendix 4:EC (*Manuports and miscellany*).

C114. *Linares (Λινάρες)*

Type: Extramural. Region: Crete. Nearest village: Papadiokampos. Fieldwork: Rescue excavation. Coastality value: 20530.

References: *ArchDelt* 27 (1972): B, 651; Davaras 1972, 45–46; 1973, 81–82; Soles 1992b, 158–160.

Chronology: Early Bronze II–Middle Bronze II.

Description: House tomb with several internments. Begins in the EM II and continues until the MM II.

C115. *Louros Athalassou (Λούρος Αθάλασσας)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Research excavation. Coastality value: 2178.

References: *ArchDelt* 17 (1961–2): A, 132; Doumas 1977, 25.

Chronology: Early Bronze I/II.

Description: Kampos phase cemetery.

Relevant finds: Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*); Appendix 5A: **5**.**3**.

C116. *Makrovouni (Μακροβούνι)*

Type: Intramural. Region: Argolid. Nearest village: Aerodromio. Fieldwork: Rescue excavation. Coastality value: 3935.

References: Dousougli 1987, 164–220.

Chronology: Middle Bronze II.

Description: Two MH cists and a *pithos* burial.

C117. *Malevizi Stavromenos (Μαλεβίζι: Σταυρωμένος)*

Type: Extramural. Region: Crete. Nearest village: Agia Marina. Fieldwork: Rescue excavation. Coastality value: 1405.

References: Hazzidakis 1913, 43–44; Pendlebury *et al.* 1934, 91b.

Chronology: (Middle Bronze I–II); Middle Bronze III.

Description: MM House tomb.

C118. *Malia: Agia Varvara (Μάλια: Αγία Βαρβάρα)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 389.

References: La Rédaction 1921, 536; Demargne & Gallet de Santerre 1953, 9–11; Treuil 2005, 209, n.2.

Chronology: Middle Bronze I.

Description: Rock shelters on the coast of Agia Varvara and on the Agia Varvara islet. They both date to the MM I period.

C119. *Malia: Charniers (Μάλια: Charniers)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 456.

References: La Rédaction 1928, 502–503; Demargne 1945, 1–24, 70–71.

Chronology: Early Bronze II–Late Bronze I.

Description: Rock shelters (Charniers; Premier, Second, Troisième and Quatrième) at Malia. Premier begins in EM II and continues until MM IA, Second begins in use in EM III until around MM III/LM I, Troisième begins in EM III and is in use until MM III/LM I and Quatrième begins in use in MM IA is in use until MM II. Each contains a multitude of internments.

C120. *Malia: Chrysolakkos (Μάλια: Χρυσόλακκος)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 478.

References: Demargne 1930; 1945, 25–69; van Effenterre 1980, 241–252; Soles 1992, 163–171; Treuil 2005, 211–214.

Chronology: Early Bronze III–Late Bronze I.

Description: Large house tombs (Chrysolakos I and II), with Chrysolakos I beginning in in EM III and being in use until MM II and Chrysolakos II beginning in use in MM IB and continuing in use until LM I. Only a few human bones were recoverd. Chrysolakos II contained *pithos* burials.

Relevant finds: Appendix 5A: **5**.**149**.

C121. *Malia: Deposit Bord De Mer (Μάλια: Απόθεση στην ακτή της θάλασσας)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 409.

References: Rédaction 1921, 535–538; 1928, 502; Van Effenterre & Van Effenterre 1963, 62–70; Soles 1992, 172–173.

Chronology: Middle Bronze I–II.

Description: Burials inside fissures in the rock, around twenty individuals. Dated to the MM I and MM II periods.

C122. *Malia: Ilôt du Christ (Μάλια: Αφέντης Χρστός)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 449.

References: Van Effenterre & Van Effenterre 1963, 103–113.

Chronology: Middle Bronze II–Late Bronze I.

Description: Pithos cemetery, first in use in MM IB and continuing until MM III/LM I. Five published but more reported.

C123. *Malia: La Tholos (Μάλια: Θόλος)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 565.

References: Van Effenterre & Van Effenterre 1963, 81–82.

Chronology: Middle Bronze I.

Description: Tholos tomb dates to MM I.

C124. *Malia: Maison des Morts (Μάλια: Οικία των Νεκρών)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 565.

References: La Rédaction 1928, 503–504; van Effenterre & van Effenterre 1963, 85–102; van Effenterre 1980, 236–237; Soles 1992b, 173–176.

Chronology: Middle Bronze I–Late Bronze I.

Description: House tomb with the first use in MM I, with further usage in MM III/LM I, with a break in MM II. Ten stone cists, ten burial *pithoi* and the bones of infants discovered. Herrero (2014, 241) argues that the cists were probably LM, and the *pithoi* MM. Possibly exists this was not originally a tomb, but was reused for burials later. (Treuil 2005, 215–216).

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C125. *Malia: Ossuaries (Μάλια: Οστεοφυλάκεια)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 627.

References: Demargne 1945, 61–62; Soles 1992, 172.

Chronology: Early Bronze IIB–Middle Bronze II.

Description: Series of house tombs interpreted as ossuaries for the deposition of the dead (Eastern Ossuaries I, II and Western Ossuary), as well as a rock shelter interpreted as another ossuary. The Eastern Ossuaries begin in use in MM I, while the Western Ossuary begins in EM IIB and continues until MM IB/II.

C126. *Malia: Tomb Triangulaire (Μάλια: Tomb Triangulaire)*

Type: Extramural. Region: Crete. Nearest village: Malia. Fieldwork: Research excavation. Coastality value: 558.

References: van Effenterre & van Effenterre 1963, 75–77.

Chronology: Middle Bronze I–Late Bronze I.

Description: Pit tombs at Malia (Tomb Triangulaire 1 and 2). They begin in use in MM I and continues into LM I uninterrupted.

C127. *Mandalia (Μανδάλια)*

Type: Extramural. Region: Crete. Nearest village: Agios Georgios. Fieldwork: Rescue excavation. Coastality value: 30667.

References: Soles 1992, 127–129; Georgoulaki 1996b, 147–150.

Chronology: Early Bronze III–Middle Bronze III.

Description: House Tomb with the first use in EM III, continuing in use until MM III.

C128. *Manganari (Μαγγανάρι)*

Type: Extramural. Region: Cyclades. Island: Ios. Fieldwork: Research excavation. Coastality value: 371.

References: BCH 28 1904, 309.

Chronology: Early Bronze I.

Description: Cemetery on the northern side of the southernmost bay of Ios. Appear to be cist tombs of the Amorgian/Melian type, which suggests that they may be of the EC I phase.

C129. *Manika (Νεκροταφείο Μάνικας)*

Type: Extramural. Region: Euboia. Nearest village: Nea Artaki. Fieldwork: Research excavation. Coastality value: 837.

References: Sapouna–Sakellarakis 1987, 223–264; *ArchDelt* 38 (1983): B1, 139–140; *ArchDelt* 39 (1984): B, 120–123; Sampson 1988a; *ArchDelt* 51 (1996): B1, 289–300.

Chronology: (Early Bronze I?) Early Bronze IIA–IIB.

Description: Large chamber tomb cemetery associated with the settlement. Subsequent tombs have been excavated, with most dating to between Kampos and Kastri style pottery (EH I/II–IIB). Most were cut into the bedrock and the grave offerings belie a mix of Cycladic and Helladic influences. Animal remains suggest the practice of funeral meals on or outside the graves, while the bone pigment containers suggest that corpses may have been painted before burial.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C130. *Mantres tou Roussou (Μάντρες του Ρούσσου)*

Type: Extramural. Region: Cyclades. Island: Amorgos. Fieldwork: Rescue excavation. Coastality value: 3517.

References: Tsountas 1898, 166–168; Yiannouli 2002, 1.

Chronology: Early Bronze IIA.

Description: Mixed deposit of tomb offerings on the surface after the intervention of local farmer.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C131. *Marathon: Klopa (Μαραθώνας: Κλώπα)*

Type: Extramural. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 374.

References: Oikonomakou 2010, 235–342; *ArchDelt* 56–9 (2001–2004): B1, 372–373;

Chronology: Middle Bronze II.

Description: Around 550m from the settlement at Plasi, a *tumulus* was discovered covering a cist burial.

C132. *Marathon: Plasi (Μαραθώνας: Πλάσι)*

Type: Intramural. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 584.

References: Polychronakou–Sgouritsa *et al.* 2016, 305–315.

Chronology: (Early Bronze Age) Middle Bronze III – Late Bronze I.

Description: During and after MH III, the settlement was abandoned and used as an extensive cemetery. Several cist graves noted in the buildings of the old settlement, as well as an Early Mycenaean Warrior tomb. Scant remains of an EBA burial.

C133. *Marathon: Vranas (Μαραθώνας: Βρανάς)*

Type: Intramural. Region: Attica. Nearest village: Marathonas. Fieldwork: Rescue excavation. Coastality value: 2484.

References: Marinatos 1970, 5–18; *Ergon* 1971, 9; *Ergon* 1972, 5–7; *ArchDelt* 56–9 (2001–2004): B1, 385; Maran 1992, 320–322.

Chronology: Middle Bronze I–III.

Description: MH *tumuli* (likely MH II–III) with possible EH phase. Most are MH, though some postdate the study period.

C134. *Markopoulo: Kopreza (Μαρκόπουλο: Κοπρέζα)*

Type: Extramural. Region: Attica. Nearest village: Markopoulou. Fieldwork: Rescue excavation. Coastality value: 18218.

References: Papachristodoulou 1971, 143–146.

Chronology: Early Bronze II; Middle Bronze II.

Description: Various cists and built graves of EH II date were found near Markopoulo, often with obsidian and EB sherds. MH II burial. Cemetery is 2km away from the village. Rock–cut tombs.

C135. *Maronia (Μαρώνεια)*

Type: Cave. Region: Crete. Nearest village: Maronia. Fieldwork: Rescue excavation. Coastality value: 42467.

References: Marinatos 1937, 224, 228; Sakellarakis 1966, 418.

Chronology: Early Bronze I–Middle Bronze I.

Description: Three rock shelters (Maronoia Kolibos, Maronoia Spiliara I and II). Maronoia Spiliara I begins its use life in EM I and MM I material is also reported. Maronoia Spiliara II begins in EM II and continues into EM III.

C136. *Mavro Vouno Grammatiko (Μαύρο Βουνό Γραμματικό)*

Type: Intramural. Region: Attica. Nearest village: Grammatiko. Fieldwork: Rescue excavation. Coastality value: 40418.

References: *ArchDelt* 66 (2011): B1, 126–129.

Chronology: Early Bronze I.

Description: Six rock–cut graves were excavated on the east side of the settlement. The graves were covered with schist covers and contained extended skeletons.

C137. *Megali Magoula Galatas (Μεγάλη Μαγούλα Γαλατάς)*

Type: Extramural/intramural. Region: Argolid. Nearest village: Galatas. Fieldwork: Research excavation. Coastality value: 698.

References: Konsolaki–Yiannoupoulou 2010, 72–73.

Chronology: Middle Bronze III–Late Bronze Age.

Description: Tholos 3 is of MH III/LH I–II date, while the other two are LH II–III. Thick layer of sea pebbles was strewn over the floor of Tomb 3. Intramural burials of infants in the settlement.

C138. *Megali Velanidia (Μεγάλη Βελανιδιά)*

Type: Extramural. Region: Thessaly. Nearest village: Velanidia. Fieldwork: Rescue excavation. Coastality value: 3509.

References: *ArchDelt* 56–59 (2001–2004): B2, 490–491.

Chronology: Middle Bronze II.

Description: A small cist tomb, oriented N–S, was discovered at the top of the hill. It consisted solely of the skeleton. Despite the absence of funerary furnishings, the excavator attributed the burial to the MH period based on the burial method.

C139. *Meliskipos (Μελίσκιπος)*

Type: Extramural. Region: Crete. Nearest village: Plati. Fieldwork: Rescue excavation. Coastality value: 83906.

References: Watrous 1982, 64, no.70.

Chronology: Middle Bronze I–II.

Description: Pithos cemetery, from the MM I possibly into MM II.

C140. *Meskine (Μεσκίνη)*

Type: Extramural. Region: Crete. Nearest village: Tzermiado. Fieldwork: Rescue excavation. Coastality value: 79496.

References: Watrous 1982, 42, no. 11.

Chronology: Middle Bronze I.

Description: Cave with a *pithos* burial reported, dating to MM I.

C141. *Messaria (Μεσσαριά)*

Type: Extramural. Region: Dodecanese. Island: Kos. Fieldwork: Rescue excavation. Coastality value: 2538.

References: *ArchDelt* 63 (2008): B2, 1311–1312.

Chronology: Early Bronze IIB.

Description: Pithos burials of the EB II period. Eight adults in six *pithoi* (one containing a triple burial), and an infant burial. Only the adult burials were accompanied by grave offerings.

C142. *Messorachi Skopi (Μεσσόραχη Σκοπή)*

Type: Extramural. Region: Crete. Nearest village: Faneromeni. Fieldwork: Rescue excavation. Coastality value: 17401.

References: *ArchDelt* 60 (2005): B2, 1057; Papadatos & Sofianou 2012, 48–50; Herrero 2014, 286–287.

Chronology: Early Bronze I.

Description: Looted EM I *tholos* tomb. Few human bones were found. Surface survey revealed a dense scatter of sherds northeast of the tomb (within 50m of it) consistent with a small settlement that may be associated with the tomb.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C143. *Midea (Μιδέα)*

Type: Intramural. Region: Argolid. Nearest village: Midea. Fieldwork: Research excavation. Coastality value: 10696.

References: Demakopoulou *et al.* 2010, 31–44.

Chronology: Early Bronze III – Middle Bronze III.

Description: Burials in the northeast area of the acropolis as well as three disturbed tombs on the lower acropolis. Two late MH pit graves discovered on the slopes leading up to the settlement. Several distured burials in Lower Acropolis with the finds dating to MH II. Burials also noted dating to EH III–MH I.

C144. *Mikrothives (Μικροθήβες)*

Type: Extramural. Region: Thessaly. Nearest village: Mikrothives. Fieldwork: Rescue excavation. Coastality value: 5540.

References: *ArchDelt* 56–59 (2001–2004): B2, 508–510; *ArchDelt* 61 (2006): B1, 607–618.

Chronology: Middle Bronze II.

Description: Excavation uncovered twenty–four tombs. The majority of tombs were Hellenistic, but were MH. In one, two MH kantharoi and jumbled bones were reported.

C145. *Mitrou (Μήτρου)*

Type: Intramural. Region: Phthiotis. Nearest village: Mikrovivos. Fieldwork: Rescue excavation. Coastality value: 332.

References: Kramer–Hajos *et al.* 2008, 167.

Chronology: (Early Bronze Age?) Middle Bronze I–Late Bronze I.

Description: Occupational strata of the MH I–II period, including cist tombs. One monumental cist grave (Grave 51). Parallel and perpendicular to this monumental grave were smaller cist graves. All graves had been robbed, but one cist tomb (Grave 50) could be dated to LH I by a bichrome matt–painted amphoriskos.

C146. *Mochlos (Μόχλος Νεκροταφείο)*

Type: Extramural. Region: Crete. Nearest village: Mochlos. Fieldwork: Research excavation. Coastality value: 462.

References: Seager 1912, 17–80; Zois 1968, 81–87; Soles 1992, 43–71, 73–77, 79–113; Davaras 1975; *ArchDelt* 31 (1976): B2, 376–378.

Chronology: Early Bronze II–Middle Bronze I; Middle Bronze III.

Description: Thirty house tombs. Most begin in EM II (Tomb I–XI; Tomb XV–XXIII and Tomb Θ), Tomb Γ begins in MMIA. Most span from EM II to MM I and with a gap, followed by activity in MM III (Tomb I–VII; Tomb IX–X; Tomb XV; Tomb XX/XXI–XXII). Some are in use only until the end of EM III (Tomb VIII; Tomb XVIII; Tomb XXIII) while others are in use only in EM III and MM I (Tomb XVI–XVII; Tomb XIX).

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary context*s); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*); Appendix 5A: **5.43, 5.81, 5.87, 5.148, 5.155, 5.189**.

C147. *Mycenae: Grave Circles (Μυκήνες: Ταφικός Κύκλοι)*

Type: Extramural. Region: Argolid. Nearest village: Mykines. Fieldwork: Research excavation. Coastality value: 11965.

References: Schliemann 1880; Karo 1915, 113–230; Wace 1921–23, 103–126; Mylonas 1964; Graziadio 1988, 343–372; Dietz 1991, 106–132; French 2002, 31; Iakovidis *et al.* 2003, 51; Pelon 2010, 367–376.

Chronology: Middle Bronze III–Late Bronze III.

Description: Two grave circles. Grave Circle B is earlier and consists of twenty–six graves in both cist and shaft form. Graves range in date from MH IIIB to LH I and contain a range of imported and rich grave goods, especially in the later examples. Grave Circle A is slightly later and located closer to the settlement with more monumental, rich burials.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 5A: **5.68, 5.69, 5.78, 5.99, 5.100, 5.101, 5.102, 5.103**.

C148. *Myloi: Oikopedon Manti (Μύλοι: Οικόπεδο Μαντί)*

Type: Extramural. Region: Argolid. Nearest village: Myloi. Fieldwork: Rescue excavation. Coastality value: 1189.

References: *ArchDelt* 22 (1967): B1, 182; Dietz & Divari–Valakou 1990; Dietz 1991, 147–148.

Chronology: Middle Bronze III–Late Bronze I.

Description: Small cemetery of an MH III–LH I date presumably connected to contemporary settlement at Lerna.

C149. *Myrsini (Μυρσίνη)*

Type: Extramural. Region: Crete. Nearest village: Mochlos. Fieldwork: Rescue excavation. Coastality value: 7179.

References: Platon 1959, 373–374; Daux 1960, 821; Pelon 1976, 31–32.

Chronology: Early Bronze II–Middle Bronze I.

Description: Tholos tomb with at least twenty–five larnakes and *pithoi* with a total estimate of sixty individual internments. Begins in use in EM II and carries on through EM III to MM I.

C150. *Nauplio (Ναύπλιο)*

Type: Extramural. Region: Argolid. Nearest village: Nafplio. Fieldwork: Rescue excavation. Coastality value: 827.

References: *ArchDelt* 56–9 (2001–2004): B4, 56–57.

Chronology: Middle Bronze III–Late Bronze I .

Descripion: Ten tombs of MH III–LH I date.

C151. *Nea Makri (Νέα Μάκρη)*

Type: Extramural. Region: Attica. Nearest village: Nea Makri. Fieldwork: Rescue excavation. Coastality value: 811.

References: *ArchDelt* 35 (1980): B1, 82–83.

Chronology: Early Bronze IIA.

Description: Rock–cut EH II chamber tombs.

C152. *Nea Roumata (Νέα Ρούματα)*

Type: Extramural. Region: Crete. Nearest village: Nea Roumata. Fieldwork: Rescue excavation. Coastality value: 39970.

References: *ArchDelt* 35 (1980): B2, 508–509; Godart & Tzedakis 1992, 58–59; Karantzali 1996, 89, 239; Herrero 2014, 302.

Chronology: Early Bronze I.

Description: Three corbelled graves (Nea Roumata Pevkos Tomb I, II and Tomadalis) with an EM I date. Tomb II is found only 18m from Tomb I, while the Tomadalis tomb is 2km north of Tomb I. One inhumation found in Tomb I. An EM I–II settlement is noted around 1km from the tombs. Similarities with the corbelled graves of Chalandriani on Syros have been noted.

C153. *Ormos Apollonos (Όρμος Απόλλωνος)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 1978.

References: Stephanos 1908, 115; *ArchDelt* 17 (1961–2): A, 144.

Chronology: Early Bronze IIA.

Description: Excavator dates to EC IIA on basis of bronze tools. Northern most part of the island. Stephanos found a double burial.

C154. *Pacheia Ammos (Παχειά Άμμος)*

Type: Extramural. Region: Crete. Nearest village: Pacheia Ammos. Fieldwork: Rescue excavation. Coastality value: 514.

References: Seager 1916; Platon & Alexiou 1957, 339–340; Zois 1968, 167–168.

Chronology: Middle Bronze I–III.

Description: Pithos cemetery located 20m from modern coast. Two hundred twenty–two *pithoi* and six larnakes were published, with the inhumations in a contracted position turned upside–down.

Relevant finds: Appendix 5A: **5.54, 5.55, 5.91**.

C155. *Palaikastro: Agios Nikolaos (Παλαίκαστρο: Άγιος Νικόλαος)*

Type: Extramural. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation. Coastality value: 11674.

References: Tod 1903; Duckworth 1903a; Faure 1964, 67.

Chronology: Early Bronze I; Late Bronze I.

Description: Three rock shelters (Rock Shelter I, II and III), with Rock Shelter III containing the grave offerings. Assigned an FN–EM I dating. Up to eighteen skulls found in the three burial loci, though the *pithos* found in Rock Shelter III is likely to be LM, not EM.

C156. *Palaikastro: Gravel Ridge (Παλαίκαστρο: Gravel Ridge)*

Type: Extramural. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation. Coastality value: 415.

References: Bosanquet 1902a, 290–297; Duckworth 1903b, 350–354; Dawkins 1903, 307, fig; 7.1; 1905b, 269, 272–273; Bosanquet & Dawkins 1923, 12, n. 2, 118; Zois 1998a, 48–49, 58.

Chronology: Early Bronze II–Middle Bronze III.

Description: Four House tombs (Tomb I, VIIa, VIIb, VIII) with over one hundred skulls and a plethora of human remains found interred within them. Tomb I is first used in EM IIA, continuing to EM III, while Tombs VIIa, VIIb and VIII begin in MM I, with Tomb VIIa continuing in usage until MM III.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C157. *Palaikastro: Patema Tomb V (Παλαίκαστρο: Πάτημα Τάφος V)*

Type: Extramural. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation. Coastality value: 567.

References: Duckworth 1903b, 351–355; Dawkins 1905, 269, 272; Bosanquet & Dawkins 1923, 5, 7–9.

Chronology: Early Bronze III–Middle Bronze I.

Description: House tomb dating to the MM I period, though it may start a little earlier at the end of EM III. Scattered human remains as well as three bodies in a contracted position.

C158. *Palaikastro: Sarantari (Παλαίκαστρο: Σαραντάρι)*

Type: Extramural. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation. Coastality value: 620.

References: Dawkins 1905b, 269.

Chronology: Middle Bronze I.

Description: Two house tombs (IVa and IVb) dated to MM I.

C159. *Palaikastro: Ta Ellinika (Παλαίκαστρο: Τα Ελληνικά)*

Type: Extramural. Region: Crete. Nearest village: Palaikastro. Fieldwork: Research excavation. Coastality value: 784.

References: Dawkins 1904, 196–202; 1905b, 268–272; Bosanquet & Dawkins 1923, 5–7; Betancourt 1979, 34, 43–44, 46–47, 49; Zois 1998a, 63, 67, 72.

Chronology: Early Bronze II – Middle Bronze II.

Description: House tombs (Tomb II, III and IV), with Tomb II in use in EM II and MM I, Tomb III in use in EM III and MM IA, and Tomb IV I use from MM IA to MM IB. In Tomb IV, one body was deposited on a layer of pebbles. Several internments in the tombs.

Relevant finds: Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 5A: **5**.**161**.

C160. *Palamari (Παλαμάρι)*

Type: Intramural. Region: North Aegean. Island: Skyros. Fieldwork: Rescue excavation. Coastality value: 767.

References: *ArchDelt* 66 (2011): B2, 1071.

Chronology: Early Bronze II–Middle Bronze I.

Description: Intramural burials reported.

C161. *Panagia (Παναγία)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 6748.

References: Tsountas 1898, 139, 156; Doumas 1977, 25.

Chronology: Early Bronze I.

Description: Twenty–three cist graves in an EC I cemetery.

Relevant finds: Appendix 4:CB (*Utilitarian uses of marine shell from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C162. *Paralia Politikon (Παραλία Πολιτικών)*

Type: Extramural. Region: Euboia. Nearest village: Paralia Politikon. Fieldwork: Rescue excavation. Coastality value: 965.

References: *ArchDelt* 52 (1997): B2, 402.

Chronology: Early Bronze IIA.

Description: Around sixty EH II tombs excavated.

C163. *Pavlopetri: Elaphonisi (Παυλοπέτρι: Ελαφονήσι)*

Type: Extramural. Region: Laconia. Nearest village: Elafonissos. Fieldwork: Research excavation. Coastality value: 84.

References: Harding *et al.* 1969, 125–132; Gallou & Henderson 2012, 79–104.

Chronology: Early Bronze IIA.

Description: Rock–cut chamber tombs. More than sixty were clustered, facing the settlement. Four cist graves were reported also, as well as a *pithos* burial.

C164. *Pevkakia (Πευκάκια)*

Type: Intramural. Region: Thessaly. Nearest village: Volos. Fieldwork: Research excavation. Coastality value: 165.

References: Caskey 1971, 305; Dickinson 1983, 61.

Chronology: Middle Bronze I–III.

Description: Cist and pit tombs have been rerported from MH layers.

C165. *Pelos (Πηλός)*

Type: Extramural. Region: Cyclades. Island: Melos. Fieldwork: Rescue excavation. Coastality value: 6116.

References: Edgar 1896–7, 35–51; Schallin 1993, 17.

Chronology: Early Bronze I.

Description: EC I Cemetery. Around twenty cist tombs.

C166. *Pera Vigla (Πέρα Βίγλα)*

Type: Extramural. Region: Crete. Nearest village: Sampas. Fieldwork: Survey. Coastality value: 43497.

References: Panagiotakis 2006, 414; Herrero 2014, no.275.

Chronology: Middle Bronze I–II.

Description: Cemetery was reported.

C167. *Petras: Hill 1 (Πετράς: Λόφος 1)*

Type: Extramural. Region: Crete. Nearest village: Petras. Fieldwork: Research excavation. Coastality value: 970.

References: Tsipopoulou 2008, 130; 2012.

Chronology: Early Bronze I–Middle Bronze II.

Description: A House tomb and rock shelter first in use in EM I, with activity throughout until MM II and further activity again in the LM. Nearly a hundred skulls found and a large number of disarticulaterd bones, some with burn marks. Probably an ossuary. The excavators suggest that the MM I material and larnax come from cleanings of the house tombs.

C168. *Petras: Kephala (Πετράς: Κεφάλα)*

Type: Extramural. Region: Crete. Nearest village: Petras. Fieldwork: Research excavation. Coastality value: 979.

References: Tsipopoulou 2008, 130; 2012; 2017. Triantaphyllou 2009.

Chronology: Early Bronze II–Middle Bronze II.

Description: Seventeen house tombs excavated, of which, eight are assigned a construction date of EM II, with activity continuing into MM II. Fragments of four Cycladic figurines were found ouside Tomb I. Some tombs also date to EM I.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*); Appendix 4:DB (*Marine objects in body ornamentation from funerary contexts*); Appendix 5A: **5**.**216**.

C169. *Phrachto (Φραχτό)*

Type: Extramural. Region: Crete. Nearest village: Kalloni. Fieldwork: Survey. Coastality value: 44837.

References: Panagiotakis 2006, 417; Herrero 2014 no.276.

Chronology: Middle Bronze I–II.

Description: Cemetery reported.

C170. *Phylakopi (Φυλακωπή)*

Type: Extramural/Intramural. Region: Cyclades. Island: Melos. Fieldwork: Research excavation. Coastality value: 975.

References: Edgar 1904, 234–237.

Chronology: Early Bronze I–Middle Bronze I.

Description: Rock–cut chamber tombs noted on the site, but empty. Speculatively they could be assigned an EC II/EC III dating based on similar types at Manika on Euboia. Tombs were also noted to the west of the site, with ceramics of a type comparable to Pelos (EC I). Also noted were MC intramural child burials in *pithoi* in the settlement proper. It is also possible that part of the settlement was constructed over an earlier cemetery accounting for mortuary type materials in the early levels.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*).

C171. *Phyrroges (Φυρρογές)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 1226.

References: Stephanos 1904, 57; 1905, 216; *ArchDelt* 17 (1961–2): A, 138.

Chronology: Early Bronze I–IIA.

Description: EC I–IIA cemetery, with traces of a hundred and twenty graves.

C172. *Pidima (Πήδημα)*

Type: Extramural. Region: Cyclades. Island: Syros. Fieldwork: Rescue excavation. Coastality value: 1440.

References: Tsountas 1899, 79.

Chronology: Early Bronze IIA.

Description: At least two tombs of EC IIA phase reported.

C173. *Pigi (Πηγή)*

Type: Extramural. Region: Crete. Nearest village: Pigi. Fieldwork: Rescue excavation. Coastality value: 3551.

References: Whitley *et al.* 2007, 113–114.

Chronology: Middle Bronze I.

Description: MM I *pithos* cemetery of sixteen *pithoi*, as well as a pit with traces of burning, which contained cooking vessel sherds found among burials.

C174. *Pigi Athinas (Πηγή Αθήνας)*

Type: Extramural. Region: Macedonia. Nearest village: Pigi Athinas. Fieldwork: Rescue excavation. Coastality value: 1846.

References: *ArchDelt* 56–59 (2001–2004): B3a, 212–214; Tritsaroli 2017.

Chronology: Late Bronze I.

Description: Tumulus necropolis. Only the earliest of *tumulus* burials fall inside LH I.

C175. *Plastiras (Πλαστήρας)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 637.

References: Doumas 1977, 25, 97.

Chronology: Early Bronze I

Description: Twelve EC I tombs excavated, with most plundered.

C176. *Platyvola (Πλαστήρας)*

Type: Cave. Region: Crete. Nearest village: Platyvola. Fieldwork: Rescue excavation. Coastality value: 44080.

References: *ArchDelt* 20 (1965): B2, 568–570; *ArchDelt* 21 (1966): B2, 428–429; *ArchDelt* 23 (1968): B2, 415–416; Godart & Tzedakis 1992, 48–51; Karantzali 1996, 84–85.

Chronology: Final Neolithic–Early Bronze III

Description: Cave burial, with bones found in Chamber IV. Begins in the FN continues through until at least EM III, with possible MM and LM residual material. Sauceboats and Cycladic figurines suggest extra–Cretan links.

C177. *Polichni (Πολίχνη)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 1073.

References: Stephanos 1904, 58; *ArchDelt* 17 (1961–2): A, 140; Dickinson & Simpson 1979, 329.

Chronology: Early Bronze I.

Description: Six graves excavated, two were EC I.

C178. *Poros–Katsambas cemetery (Πόρος Κατσαμπάς–Νεκροταφείο)*

Type: Extramural. Region: Crete. Nearest village: Heraklion. Fieldwork: Rescue excavation. Coastality value: 1635.

References: Alexiou 1967, 195–209; *ArchDelt* 42 (1987): B2, 528–529; *ArchDelt* 49 (1994): B2, 709–710.

Chronology: Middle Bronze II–Late Bronze Age.

Description: Several chamber tombs. Ikaros Avenue chamber tomb begins in MM IIB and continues through to LM I, while the 14th Public School chamber tomb begins in MM IIB and continues through to LM IB. A Neopalatial chamber tomb also known, one of 10 from the centre of the known cemetery of the Minoan settlement. The tombs date from MM III (with a little MM II) to late LM IB.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C179. *Proskynas (Προσκυνάς)*

Type: Intramural. Region: Locris. Nearest village: Proskynas. Fieldwork: Rescue excavation. Coastality value: 2628

References: Papathanassiou 2003, 619–628; Veropoulidou 2011, 193.

Chronology: Final Neolithic–Early Bronze I; Middle Bronze I–III.

Description: At least fifteen tombs, from FN to EBA. The EH settlement was also later reused for MH intramural burial.

C180. *Prosymna: Argive Heraion (Πρόσυμνα: Αργιακό Ηραίον)*

Type: Extramural. Region: Argolid. Nearest village: Nea Ireo. Fieldwork: Research excavation. Coastality value: 20041.

References: Blegen 1937, 30–50; Dietz 1991, 140–145.

Chronology: Middle Bronze III–Late Bronze I.

Description: Thirty–one LH I pit burials were recorded near the later Argive Heraion. Most were described as MH, but are actually LH I.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C181. *Pseira (Ψείρα)*

Type: Extramural. Region: Crete. Nearest village: Pseira. Fieldwork: Research excavation. Coastality value: 897.

References: Betancourt & Davaras 2002; 2003; Herrero 2014, 275–279.

Chronology: Early Bronze I – Middle Bronze II

Description: Cist tombs (8), Rock shelter burials (6) and House tombs (5). Some tombs begin use in the FN/EM I with two (VIII, XII) beginning in EM II and two further beginning in MM I (XI, XIV). Most tombs terminate in the MM II period.

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C182. *Pyrgos: Crete (Πύργος: Κρήτη)*

Type: Cave. Region: Crete. Nearest village: Kokkini Hani. Fieldwork: Rescue excavation. Coastality value: 1195.

References: *ArchDelt* 4 (1918): B, 136–170; Zois 1968a, 40–48; 1998c, 55–68, 83–104.

Chronology: Early Bronze I – Middle Bronze I.

Description: Cave and rock shelter, first in use in EM I with activity down to EM II–III. More than twenty larnakes were found in the cave, with around fifty individuals, though these may actually date to EM III, as they were found above EM I pottery, leading some to suggest this was a habitation cave in EM I, later in use as a burial ground in EM III/MM I.

C183. *Pyrgos: Paros (Πύργος: Πάρος)*

Type: Extramural. Region: Cyclades. Island: Paros. Fieldwork: Rescue excavation. Coastality value: 514.

References: Tsountas 1898, 158; 168; Doumas 1972, 151, 164; 1977, 25.

Chronology: Early Bronze I–IIA.

Description: A large cemetery of around fifty–eight graves of EC I–IIA date.

C184. *Raphina (Ραφήνα)*

Type: Intramural. Region: Attica. Nearest village: Raphina. Fieldwork: Rescue excavation. Coastality value: 840.

References: Theocharis 1952, 130–135; Pullen 1985, 132; Weiberg 2007, 69.

Chronology: Early Bronze IIA.

Description: Intramural burial has been recorded within the confines of the settlement.

Relevant finds: Appendix 3:B (*Fishing apparatus from funerary contexts*).

C185. *Raphtopoula (Ραφτοπούλα)*

Type: Extramural. Region: Attica. Nearest village: Porto Rafti. Fieldwork: Survey. Coastality value: N/A.

References: Theocharis 1955a, 283–290.

Chronology: Early Bronze IIA.

Description: Cemetery on an islet close to the settlement of Pounda. Surface pottery and disturbed cist–like slabs indicate

the probability of a looted cemetery. Dating is difficult, but likely to be EH II in line with other occupation in the area.

C186. *Rhodinadhes (Ροδινάδες)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 20182.

References: Doumas 1977, 126–128.

Chronology: Early Bronze IIB.

Description: Four graves of the Kastri (EC IIB) phase excavated by Doumas.

C187. *Rivari (Ριβάρι)*

Type: Extramural. Region: Cyclades. Island: Melos. Fieldwork: Rescue excavation. Coastality value: 116.

References: Televantou 2008b, 209–223; Sampson & Fotiadi 2008, 217–223.

Chronology: Early Bronze IIB–IIIA.

Description: Disturbed circular rock–cut chamber tomb. Dated roughly from EC II–III. Mostly Kastri material.

C188. *Salamina (Σαλαμίνα)*

Type: Extramural. Region: Saronic. Island: Salamis. Fieldwork: Rescue excavation. Coastality value: 1197.

References: *ArchDelt* 63 (2008): B1, 213–214; *ArchDelt* 64 (2009): B1, 245; *ArchDelt* 67 (2012): B1, 72–73.

Chronology: Early Bronze II–Late Bronze Age.

Description: A range of burials from EH II to LH I uncovered during various construction projects across the main town of Salamis.

C189. *Sesklo: Kastraki (Σέσκλο: Καστράκι)*

Type: Intramural. Region: Thessaly. Nearest village: Sesklo. Fieldwork: Rescue excavation. Coastality value: 9360.

References: Tsountas 1908, 125–147.

Chronology: Middle Bronze III.

Description: One hundred and fifty-six cist burials from late MH in between Neolithic buildings, with several others in use outside. Around 150m away were another twelve burials in an extramural fashion.

C190. *Siderokamino (Σιδεροκάμινο)*

Type: Extramural. Region: Crete. Nearest village: Stalida. Fieldwork: Rescue excavation. Coastality value: 10287.

References: Branigan 1993, 148; Goodison & Guarita 2006, 194–195.

Chronology: Early Bronze II–Middle Bronze II.

Description: Tholos dated to the MM I, with possible MM II and earlier EM II–III.

C191. *Sissi: House Tombs (Σίσσι: Τάφοι–Οικίες)*

Type: Extramural. Region: Crete. Nearest village: Sissi. Fieldwork: Research excavation. Coastality value: 577.

References: Schoep 2009, 46–51; Crevecoeur & Schmitt 2009, 71–76.

Chronology: Early Bronze II–Middle Bronze II.

Description: Nine house tombs excavated at the site. All are out of use by the end of MM II.

C192. *Siteia (Σητεία)*

Type: Extramural. Region: Crete. Nearest village: Sitia. Fieldwork: Rescue excavation. Coastality value: 2546.

References: Platon 1953, 484.

Chronology: Middle Bronze I–III.

Description: Rock shelter, in use in MM I, with further use in MM III. Pithos and larnax burial found.

C193. *Skarkos (Σκάρκος)*

Type: Intramural. Region: Cyclades. Island: Ios. Fieldwork: Research excavation. Coastality value: 1775.

References: Marthari 2009, 41–58.

Chronology: Middle Bronze III – Late Bronze I.

Description: A late MC–LC I cemetery cuts into the EC settlement.

C194. *Sounion (Σούνιον)*

Type: Extramural. Region: Attica. Nearest village: Sounion. Fieldwork: Survey. Coastality value: 2086.

References: Theocharis 1955a, 287.

Chronology: Early Bronze IIA.

Description: Unexcavated tombs, facing the sea. Dating not certain but they were reported as cist tombs and likely to be between EH I–IIA.

C195. *Spathi (Σπάθη)*

Type: Extramural. Region: Cyclades. Island: Melos. Fieldwork: Rescue excavation. Coastality value: 590.

References: *ArchDelt* 20 (1966): B, 513; Doumas 1977, 49; Renfrew 1972, 512.

Chronology: Early Bronze III.

Description: Rock cut tombs similar to those from Phylakopi.

C196. *Spedos (Σπεδός)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 550.

References: Stephanos 1903, 53, 1906, 87; *ArchDelt* 17 (1961–2): A, 114; Doumas 1972, 163.

Chronology: Early Bronze IIA.

Description: Cemetery associated with the settlement where twenty–five graves have been excavated.

Relevant finds: Appendix 4:DB (Special use of marine shell objects from funerary contexts).

C197. *Stavros (Σταυρός)*

Type: Extramural. Region: Cyclades. Island: Amorgos. Fieldwork: Rescue excavation. Coastality value: 4351.

References: Tsountas 1898, 138, 153.

Chronology: Early Bronze IIA.

Description: Six graves reported on the south coast of Amorgos.

C198. *Stylida (Στυλίδα)*

Type: Extramural. Region: Phthiotis. Nearest village: Stilida. Fieldwork: Rescue excavation. Coastality value: 6775.

References: *ArchDelt* 62 (2007): B1, 633–635.

Chronology: Middle Bronze II.

Description: Rescue excavation uncovered thirty–seven graves, with some dating to the MH.

C199. *Tavla: Antimacheia (Τάβλα: Αντιμάχεια)*

Type: Extramural. Region: Dodecanese. Island: Kos. Fieldwork: Rescue excavation. Coastality value: 12295.

References: *ArchDelt* 39 (1984): B, 335–336.

Chronology: Early Bronze IIB.

Description: An EB IIB *pithos* burial was found with pottery.

C200. *Tharrounia (Θαρρούνια)*

Type: Extramural. Region: Euboia. Nearest village: Tharrounia. Fieldwork: Rescue excavation. Coastality value: 64935.

References: Sampson 1992, 88–91.

Chronology: Final Neolithic.

Description: Small cemetery close to the settlement. Graves were curviform cists and was reported to be contemporary with the cemetery at Kephala on Kea.

Relevant finds: Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts*).

C201. *Thorikos (Θορικός)*

Type: Extramural. Region: Attica. Nearest village: Lavrio. Fieldwork: Research excavation. Coastality value: 4586.

References: Pelon 1976, 228; Mussche *et al.* 1984, 61–67.

Chronology: Middle Bronze III – Late Bronze Age.

Description: Located on the saddle of the Velatouri hill. Stone laters indicate a *tumulus* later disturbed and tomb contents indicate a MH III–LH I date before the area was used for Mycenaean *tholos* tombs.

C202. *Tiryns: Citadel (Τίρυνς)*

Type: Intramural. Region: Argolid. Nearest village: Nea Tirynthia. Fieldwork: Research excavation. Coastality value: 323.

References: Verdelis 1963, 1; Gercke *et al.* 1975, 9–10; Kilian 1983; Forsen 1992, 47, 49; Cavanagh & Mee 1998, 15.

Chronology: Early Bronze IIB–Middle Bronze III.

Description: Pullen dates two grave found below Mycenaean remains to EH II on ceramic synchronisms. Some debate over the two EH III graves located in the rundbau, whether they are intramural in an agricultural context (Kilian 1983, 318 and fig. 48. Forsen 1992, 49) or whether the structure itself is a cemetery (French & French, 1971, 28). It is not impossible that the structure could be a remnant of an EH III *tumulus*. Eleven pits/cists mentioned for the MH period.

C203. *Trapeza Cave (Τράπεζα Σπήλαιο)*

Type: Cave. Region: Crete. Nearest village: Tzermiado. Fieldwork: Rescue excavation. Coastality value: 80776.

References: Pendlebury *et al.* 1939; Branigan 1971, 60, 67–68, 70–71; Zois 1998b, 242–245.

Chronology: Early Bronze II–Middle Bronze II.

Description: The burial use of the cave has been assigned to between EM II and MM I. Burial *pithoi* reported inside the cave dated to the MM I period, with several other *pithos* burials located within a 100m radius of the entrance of the cave.

Relevant finds: Appendix 4:CB (*Utilitarian uses of marine shell from funerary contexts*); Appendix 4:DB (*Special use of marine shell objects from funerary contexts*).

C204. *Trapeza: Kastellos Trenches (Τράπεζα: Σκάμματα Κάστελλου)*

Type: Extramural. Region: Crete. Nearest village: Tzermiado. Fieldwork: Rescue excavation. Coastality value: 80776.

References: Pendlebury et al. 1940, 9–10.

Chronology: Late Neolithic.

Description: Two "trenches" (Kastellos Trench 4 and 11) focusing on rock shelters near the Trapeza cave. The burial in Trench 4 is probably LN, though there is evidence for continued use of the rock shelters through the EM and into MM I.

C205. *Tsepi (Τσέπι)*

Type: Extramural. Region: Attica. Nearest village: Marathonas. Fieldwork: Research excavation. Coastality value: 1262.

References: Pantelidou Gofa 1997, 41–46; 1998, 41–50; 1999, 33–41; *Ergon* 1999, 22–28; Pantelidou Gofa 2000, 33–36; *Ergon* 2000, 25–34; Pantelidou Gofa 2001, 15–19; 2006, 1–7;*Ergon* 2007, 13–20; *Ergon* 2008, 13–23; *Ergon* 2009, 11–14; *Ergon* 2012, 18–22; *Ergon* 2010, 59; *Ergon* 2011, 14; Pantelidou Gofa 2012, 9–19; 2013, 9–20.

Chronology: Final Neolithic–Early Bronze IIA.

Description: Cemetery of special importance in north Attica, with burials of an EC type on the Greek mainland. Tombs are mostly cist graves, some more elaborate than the standard type. Custom of lower jaw removal evident from the skeletal material, as well as placing pebbles above lower skeletons, evident in most tombs (Appendix 5B, Fig. 27).

Relevant finds: Appendix 3:F (*Marine food waste remains from funerary contexts*); Appendix 4:EB (*Marine objects in body ornamentation from funerary contexts).*

C206. *Tsikniades (Τσικνιάδες)*

Type: Extramural. Region: Cyclades. Island: Naxos. Fieldwork: Rescue excavation. Coastality value: 13393.

References: Philaniotou 2008, 195–207;

Chronology: Early Bronze I–IIB.

Description: One hundred and twenty-two graves from a partially excavated cemetery, the majority of which had been looted. Most were slab–lined cists of various forms: some instances of two-storey graves were noted. Only twenty-seven of the unplundered graves had offerings. The absence of skeletal material in some unplundered graves supports the suggestion that they were deliberately removed as part of mortuary practice.

C207. *Tsimindiri (Τσιμιντήρι)*

Type: Extramural. Region: Cyclades. Island: Antiparos. Fieldwork: Rescue excavation. Coastality value: 132.

References: Tsountas 1899, 76; Doumas 1977, 25.

Chronology: Early Bronze I.

Description: At least one cist burial found on the small island between Antiparos and Despotikon. Bent recalls it being covered with graves. Assigned an EC I dating by Doumas.

C208. *Vardoiani (Βαρδιάνοι)*

Type: Extramural. Region: Crete. Nearest village: Kritsa. Fieldwork: Survey. Coastality value: 23286.

References: Faure 1964, 60, 70.

Chronology: Early Bronze IIB.

Description: Possible EM IIB tomb.

C209. *Vasiliki: House tomb (Βασιλική: Τάφος Οικία)*

Type: Extramural. Region: Crete. Nearest village: Vasiliki. Fieldwork: Research excavation. Coastality value: 4351.

References: Seager 1916, 20; Hall 1912a, 73; Soles 1992b, 194–195.

Chronology: Middle Bronze I.

Description: The house tomb dates solely to MM I. Four larnakes reported and the tomb itself was located on the same hill to which the settlement belongs.

C210. *Vasiliki: Rock Shelter (Βασιλική: Βραχοσκεπή)*

Type: Extramural. Region: Crete. Nearest village: Vasiliki. Fieldwork: Research excavation. Coastality value: 6086.

References: Zois 1993a, 103.

Chronology: Early Bronze IIA.

Description: The rock shelter is first in use in EM IIA. A fragment of a Cycladic figurine was found close to the rock shelter and has been interpreted as potentially belonging to this context.

C211. *Vathi (Βαθύ)*

Type: Extramural. Region: Cyclades. Island: Siphnos. Fieldwork: Rescue excavation. Coastality value: 1183.

References: Tsountas 1899, 76; Doumas 1977, 25.

Chronology: Early Bronze I.

Description: Small EC I cemetery on coast.

C212. *Zerelia: Kastraki (Ζερέλια)*

Type: Extramural. Region: Thessaly. Nearest village: Almiros. Fieldwork: Rescue excavation. Coastality value: 8078.

References: Wace *et al.* 1907, 214–216; Cavanagh & Mee 1998, 145.

Chronology: Middle Bronze I–III.

Description: Tombs are dated to LH III by Wace *et al.* (1907, 214), though Cavanagh and Mee (1998, 145) date them the MH. The tombs contained little pottery, though the wheel–made jug of grey–black ware probably refers to some variery of Minyan ware, giving a probable dating of the MH.

C213. *Zoumbaria (Ζουμπάρια)*

Type: Extramural. Region: Cyclades. Island: Antiparos. Fieldwork: Rescue excavation. Coastality value: 351.

References: Tsountas 1898, 164–165; *ArchDelt* 16 (1960): B, 246.

Chronology: Early Bronze I—IIA.

Description: Thirty–four EC I tombs excavated in total, possible the cemetery extends into EC IIA.