

# **The formation and development of political territory and borders in Ionia from the Archaic to the Hellenistic periods: A GIS analysis of regional space**

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## **Introduction**

The purpose of this article is to present a set of geopolitical maps of Ionia from the Archaic to the Hellenistic periods using a range of sources and by applying comparative models drawn from a number of Greek regions. The maps represent the first attempt to visualise geopolitical Ionia. The borders and territories of the Ionian poleis have been identified and drawn on two maps to represent the geopolitical situation at the time of polis formation in the 8th century BC, and again in the 2nd century BC during the Hellenistic period when considerable changes to the political landscape were made. The motivation behind creating a geopolitical map of Ionia that plots the territories and borders of the Ionian poleis is to open discussion. Ionian and regional research has traditionally been carried out on a polis by polis basis.<sup>1</sup> As a consequence less focus has been placed on the pan-regional aspects of Ionian development.<sup>2</sup> Intra-project focus within fieldwork leads to lower levels of direct collaboration between research institutions and to a fragmentation of the Ionian narrative. In addition, increasing specialisation in academic fields has led to fewer regional studies being undertaken. The linearity of cultural development is often broken into convenient chronological bites where material driven themes are treated separately. This is a logical way of focusing on detail and responding to a dominant source material from period to period, but it does however lead to a staccato narrative;<sup>3</sup> for example, the Archaic and Classical periods are largely dominated by literary texts that exploit and amplify cultural polarity between Persia and the Greek world, using regional war as a literary vehicle to carry the narrative.<sup>4</sup> The Hellenistic period tends to focus more upon architectural studies, central planning and autocratic driven change, whilst the increase of material from honorific inscriptions in the late Hellenistic and Roman periods drives a more civic based narrative. Archaeological data for each period are also fragmented; very little has been excavated from the Archaic period in Ionia, and generally it is the larger monumental and public and religious buildings rather than domestic material that is available for research. Finally, the themes of settlement evolution and the spatial development of the Ionian landscape are rarely taken up and discussed in a pan-Ionian narrative.

## **Geopolitical Ionia in the sources**

The main source for defining political Ionia is Herodotus, who gives us the names of the 12 member states of the Ionian League and therefore the parameters for the highest ordering of political territory in Ionia.<sup>5</sup> A second important source is a short text preserved in Vitruvius that describes

<sup>1</sup> Hill 2016:70–72.

<sup>2</sup> One exception is the conference publication on early by Ionia Cobet, J., von Graeve, V., Niemeier, W. D. and Zimmermann, K. (eds) 2007.

<sup>3</sup> Hill 2016:33–34.

<sup>4</sup> E.g. the works of Herodotus, Thucydides, Xenophon.

<sup>5</sup> Hdt 1.1.42.2 Miletus, Myus, Priene, Ephesus, Colophon, Lebedus, Teos, Clazomenae, Phocaea, Erythrae and the island states of Samos and Chios. Herodotus further states that he thought that only 12 states were allowed as this was the original number of peoples in the

events surrounding a conflict on Mt Mycale that has become known as the Melian War.<sup>6</sup> The events mentioned in the text are few, but hold considerable relevance for our understanding of early Ionian political development. A group of states made up of Priene, Samos, Colophon and Ephesus joined against indigenous (Carian) Melie in order to drive out the community and annex the territory. In the aftermath of the war, which is roughly dated to 650 BC, the Panionion sanctuary to Poseidon Helikonios was constructed over the raised site of Melie. The cult and annual religious festival is seen as the starting point for the establishment of the Ionian league.<sup>7</sup> There are ethnic and religious undertones in the narrative where Ionian and non-Ionian as cultural and political concepts are defined, and which are also present in other fragmented sources on early Ionia.<sup>8</sup> Whilst this is the earliest reference to the Ionian league, it should not be ruled out that some form of *koine* may have existed prior to 650, and that the foundation of the Panionion should be seen as the formalisation of a common Ionian political identity rather than its genesis.<sup>9</sup> Archaeologists who employ wider and less rigid frameworks of definition have raised caveats about accepting the information within ancient sources at face value.<sup>10</sup> The textual sources for early Ionia are patchy and fragmented, such that an approach that employs them alongside archaeological data for Geometric and Archaic period Ionia will offer a more balanced discussion.<sup>11</sup>

The 12th-8th centuries is a period that is difficult to read, with few secure sources and more questions than answers. However, the volume of material is continuously being added to, so that scholars are currently united in how early Ionia should be interpreted.<sup>12</sup> The myth of an Ionian Migration in the 12th century that transplanted Greek cultural norms onto an Anatolian region is no longer accepted, instead models of gradual acculturation between Aegean and Anatolian impulses as having formed Ionia are now the norm.<sup>13</sup> This means that for the Early Iron Ages we should see a landscape in cultural transition, which gradually fused into being what we later culturally define as Ionian.

For the Archaic and Classical periods, we can activate a greater number of sources for drawing political and territorial relationships on maps. The rise of literacy coincides with state development and inter-regional conflict in the 6th-5th centuries, reaching levels that provoked writers to record and account the events that dominated their lives e.g. Herodotus, Thucydides and Xenophon. In addition to literary texts, treaties and agreements between poleis begin to be recorded, which give us direct information on how borders were negotiated and regulated, and importantly where they lay. One final and important material is the Athenian Tribute lists, that name settlements and communities and provides important information on their political affiliation. This means that creating a political and territorial map for the 6th and 5th centuries can be done with greater confidence than for the 8th and 7th centuries. The Hellenistic and Roman periods provide a more detailed and varied source material where civic inscriptions in particular, become increasingly valuable. The Copenhagen Polis Centre's Inventory of Archaic and Classical Poleis has conveniently collected and classified the sources for each and every polis in a systematic and usable form and represents therefore a considerable resource.<sup>14</sup>

Achaean homeland (Hdt 1.145).

<sup>6</sup> Vitruv. 4.1.4-5

<sup>7</sup> Lohmann 2007: 2012.

<sup>8</sup> MacSweeney 2013.

<sup>9</sup> Herda 2006:41, Hill 2016:58-59, 287; Lohmann 2012; Smarczyk 2000:57-58. Referring to a number of honorary titles connected to the Panionion that use the term *basileus*, which, he argues follow earlier practice and tradition.

<sup>10</sup> Greaves 2010.

<sup>11</sup> Greaves 2010; Mac Sweeney 2013: 2015; Vaessen 2014: 2015.

<sup>12</sup> Herda 2006:105.

<sup>13</sup> Criellaard 2009; Herda 2006; Hill 2016: 2017; Greaves 2010; Kerschner 2010; Mac Sweeney 2013; Vaessen 2015.

<sup>14</sup> Hansen and Nielsen 2004.



**Figure 1.** Map of Ionia in the Archaic period showing the major poleis and physical features mentioned in the text.

### The physical landscape of Ionia

The topography of Ionia is aligned east-west and dominated by two mountain ridges running from the island of Chios to the Mimas peninsula and eastward, and from Samos to Mycale, Mt Thorax and eastward (Figure 1). Geologically the ridges are known as *horsts* and are separated by valleys formed by collapsed fault lines known as *grabens*,<sup>15</sup> which have since been filled with sediments and

<sup>15</sup> Brinkmann 1971:189; Greaves 2010; 47–49.

alluvium to form rich cultivable valley bottoms. The east-west river valleys that run from inland Anatolia to the Aegean coast are the most important topographic elements to influence cultural development within the region. They represent long corridors of communication and settlement and have been seen as linking together the Aegean littoral and Anatolian uplands.<sup>16</sup> The size of the watersheds that drain down into the *grabens* cover huge areas: The Gediz (anc. Hermuz) River basin reaching the sea north of Izmir drains 18,000 km<sup>2</sup> has a watershed that makes up 2,2 % of Turkey's total land area. The Büyük Menderes (anc. Meander) reaching the sea near Miletus has a watershed that drains almost 24,000 km<sup>2</sup> along its 548 km length, which is 3.2 % of Turkey's total area, whilst the Küçük Menderes (anc. Cayster) which reaches the sea near Ephesus stretches 114 km from the Aegean into Anatolia, and drains 3200 km<sup>2</sup>.<sup>17</sup>

The presence of high mountain ridges close to the sea, traps humidity and increases precipitation in what is otherwise a dry region. The valley floors are therefore well watered by rainfall, springs and snow melt. Prior to modern regulation of the watercourses (the draining of wetlands, increased irrigation and water use), the flooding of the valley floors in the region was a normal and regular occurrence.<sup>18</sup> Historical descriptions made by travellers from the 17th to the 20th centuries all mention the difficulty of travel due to marshy conditions and perennial flooding.<sup>19</sup> Homer mentions wetlands by the Cayster (modern Küçük Menderes) river as being a haven for wild birds.<sup>20</sup> The presence of permanent marshes would undoubtedly have been a key resource for the trapping of birds, fishing and the collecting of plants and reeds. The process of colluviation, or soil-wash down a slope, alongside river alluviation, have lead over time to considerable amounts of soil having been deposited into the valley floor and raising it.

### **Progradation of the coastline at estuaries and in deltas**

Where the large east-west Anatolian river systems heavily laden with alluvium in suspension meet the sea a dynamic and ongoing process has led to the continual extension of the shoreline. This process is known as progradation and has had serious consequences for those urban communities affected by it, which in time have become landlocked. Figure 2 shows how progradation gradually extended the coastline of the Gediz (anc. Hermuz), Küçük Menderes (anc. Cayster) and Büyük Menderes (anc. Meander) estuaries within a relatively, short time frame. This dynamic situation had a significant effect on settlement and urbanisation in Ionia and Aeolis, and in particular on the urban centres of the lower reaches of these three rivers (Miletus, Myus, Priene, Ephesus in Ionia and Neon Teichos, Larissa, Panaztepe, Leukai, Heraklia and Temnos in Aeolis).<sup>21</sup> Figure 3 shows the estimated shoreline in the Early Archaic period when the poleis had formed and urban communities were beginning to develop. Figure 4 shows the shoreline in the mid Hellenistic period at ca. 200 BC, when the effects of progradation were beginning to have an adverse effect on those communities whose economies were dependent upon access to the sea.

### **Eco-agrarian potential and slope analysis**

A further element of the analysis was the creation of a slope model, to give a qualitative aspect to the discussion of the Ionian landscape. The interplay between landscape and settlement needs to consider what sort of ecological variables and zones would have been attractive for settlement.

<sup>16</sup> Greaves 2010:50–2; Thonemann 2011.

<sup>17</sup> Greaves 2010:50–52; Hill 2016:37.

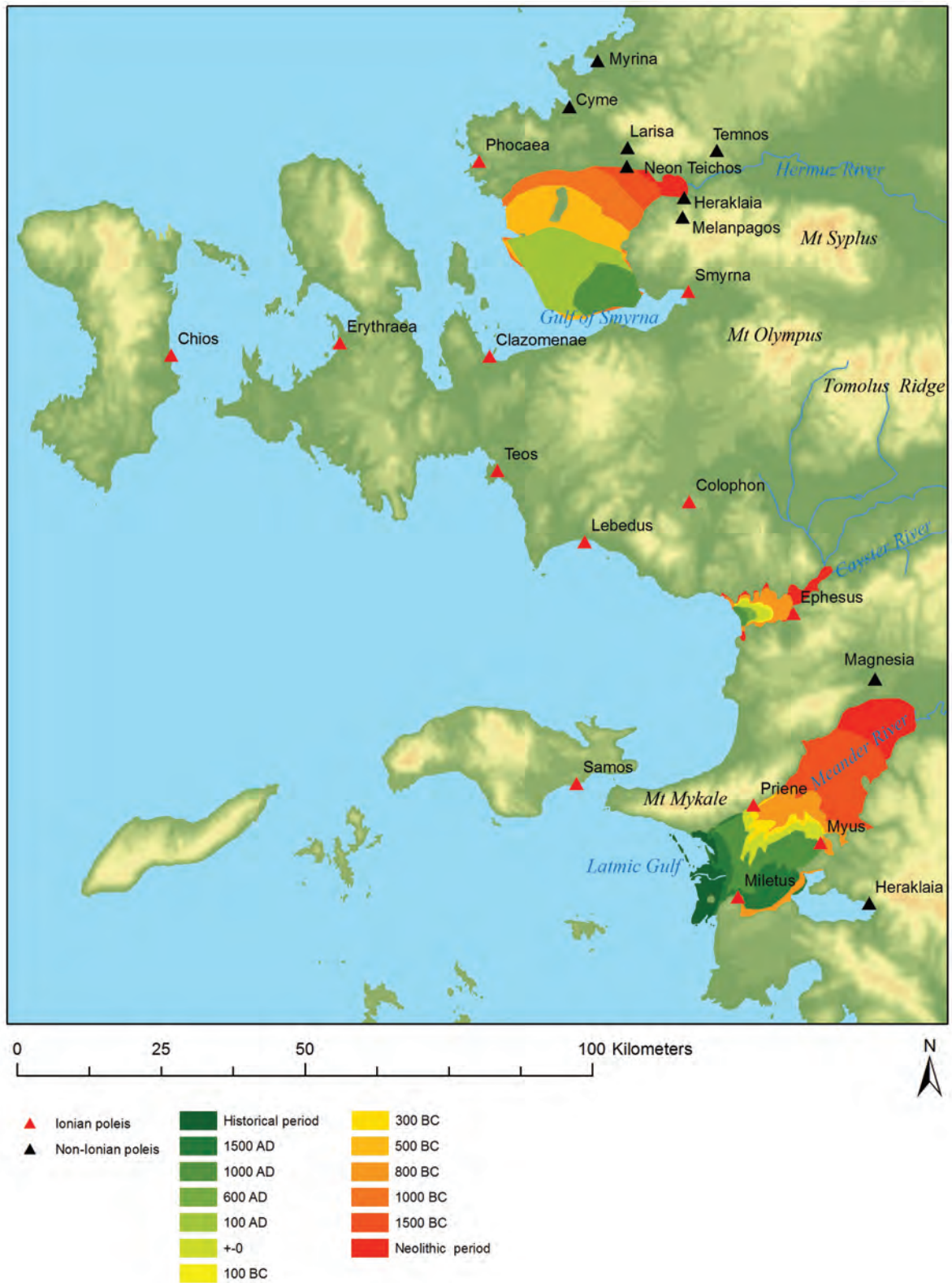
<sup>18</sup> Gündüz and Şimşek 2011; Hill 2010.

<sup>19</sup> Hill 2010.

<sup>20</sup> Hom. *Il* 11.461.

<sup>21</sup> For data on silting at Ephesus see Kraft *et al.* 2007; Delile *et al.* 2015 for Late Roman and Byzantine Ephesus, for Miletus see Aksu *et al.* 1987; Brückner *et al.* 2017: 2014.





**Figure 2.** Map of Ionia showing the effect of progradation of the shoreline at the estuaries and deltas of the major regional rivers.



**Figure 3.** Map showing the Ionian coastline in the Archaic period ca. 650 BC.

Scholars have noted that early East Greek settlements favoured sites on low hills that lay close to natural harbours and deltas, and near alluvial plains suitable for cultivation.<sup>22</sup> The pattern shows that a combination of several variables was important: access to the sea, access to cultivation areas, a definable and defensible site, such that locations conforming to all variables would have been attractive for early settlement.

<sup>22</sup> Kirsten 1956:46–47 and 72; Becks 2015:118–119 noted a similar pattern for EBA sites in western Anatolia. See also Hill 2016:118.

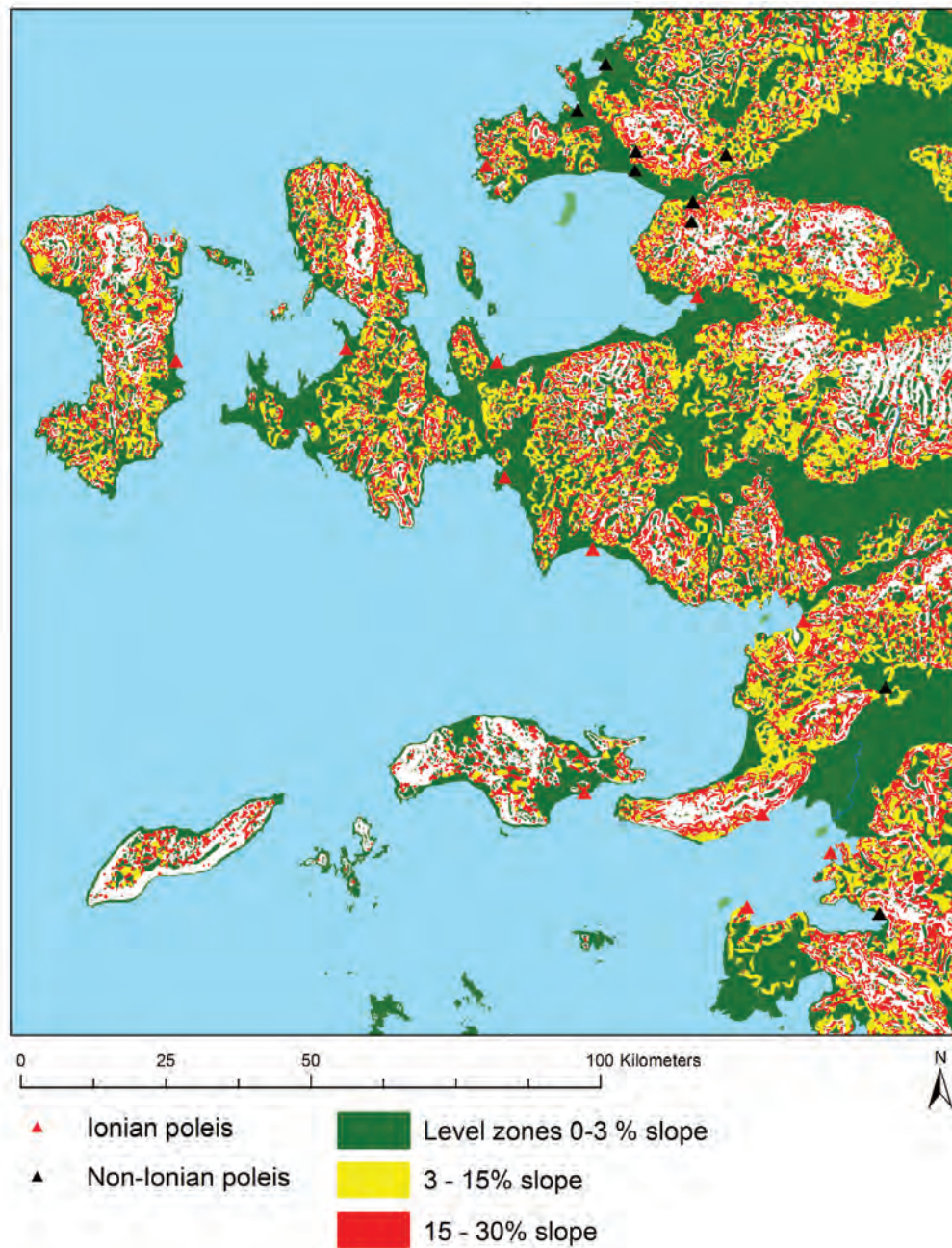


**Figure 4.** Map showing the Ionian coastline in the Hellenistic period ca. 200 BC.

Figure 5 displays an overlay of the eco-agrarian potential represented by a set of polygons that express the relationship between landscape and agrarian ecology. The potential in this case has been based upon a slope model of the region. Slope is a central variable that influences Mediterranean farming as the nature of the slope will (along with other factors) determine what can be cultivated and where.<sup>23</sup> Flat and level areas do not require terracing, however as slope increases terracing becomes necessary and the steeper the slope, the narrower and deeper the terrace becomes.

<sup>23</sup> Allen 1997; Beven and Conolly 2004:126; Butzer 1996; Cater and Dale 1955: 99–100; De Laet 2007:136; Foxhall 1990: 2010; Isager and Skydsgaard 1992:9; Halstead 2002.



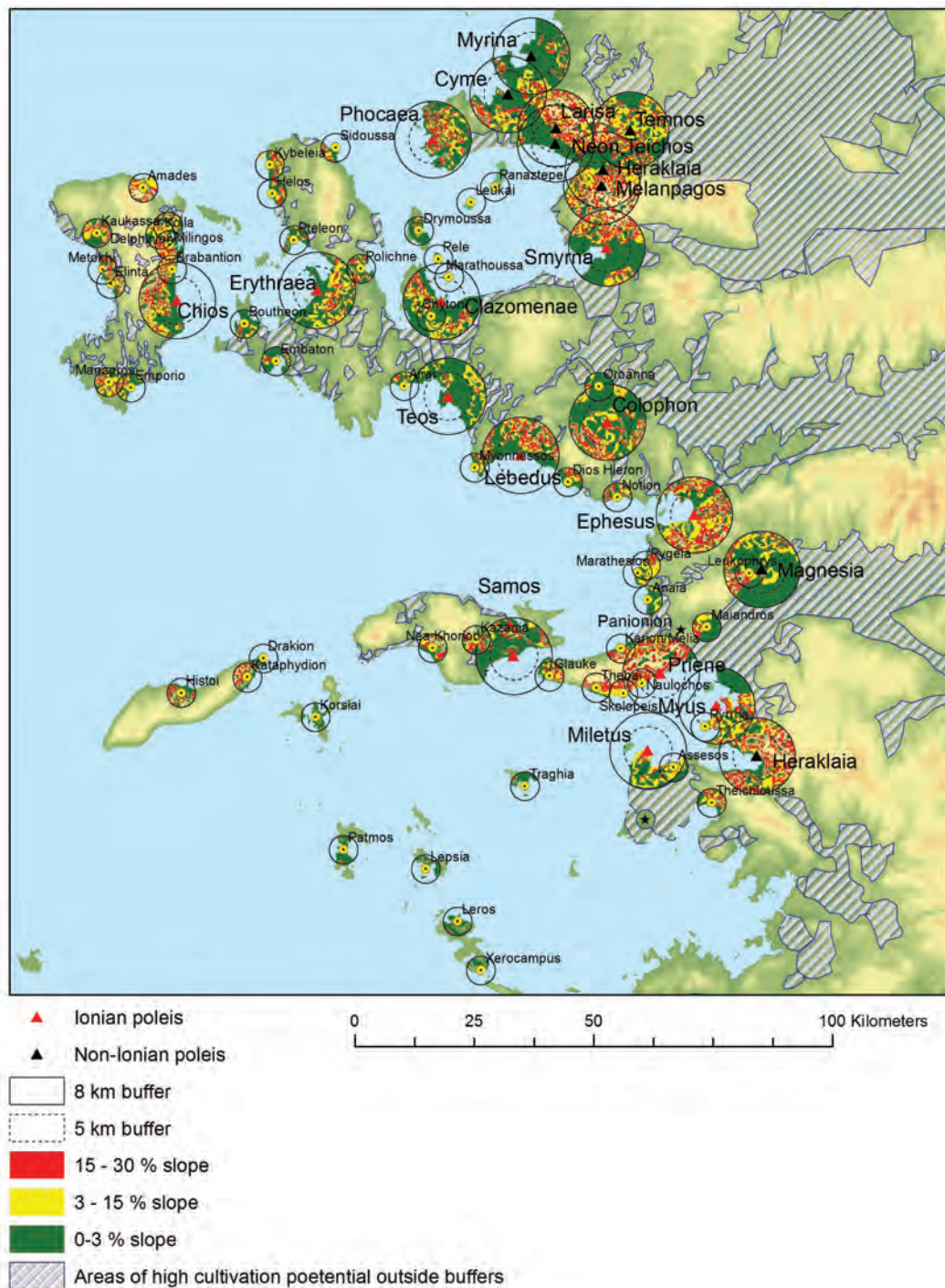


**Figure 5.** Map of Ionia showing the distribution of cultivable land coded by slope.

Within the frame of Mediterranean subsistence strategies this leads to choices over which crops would be cultivated. Narrower deeper terraces are more suitable for vines and arboriculture than for annually seeded crops such as cereals and pulses that would require the soil to be worked such that wider more shallow terraces were favoured.<sup>24</sup> Flat or level areas could be used for open field cultivation that could be ploughed by oxen that would have required a large area in order to turn. We should not assume that slopes were terraced only when more level areas were no longer available, as there are clear advantages offered by terracing, in that water retention is increased and that terracing creates clearly defined and manageable plots. The diverse nature of traditional Mediterranean cultivation has been recognised as being central to subsistence strategies where

<sup>24</sup> Bevan and Conolly 2004:126; De Laet 2007:136.





**Figure 6.** Map of Archaic period Ionia showing the distribution of cultivable land in Ionia within an 8 km radius around urban poleis, and a 3 km radius around the smaller affiliated settlements.

farmers could have a diverse number of crops that could be harvest at different times throughout the year and that occupied a spread and diverse range of locations and ecological niches. In this way risk management would be built into the system.<sup>25</sup>

The slope-based land use polygons are meant as a guide to indicate at a simple and fundamental level that green areas would have been favoured over yellow areas, which would have been favoured

<sup>25</sup> Halstead 2002.

over red areas. The value of green and yellow areas would increase if they lay at the base of a high ridge, as springs and natural hydraulic pathways would have a positive effect for cultivation in dry periods. The model implies that there would have been a hierarchy of slope favourability within agrarian strategies. The three polygon types in the model represent:

*Green polygons* – level areas with 0–3% slope suitable for open field cultivation that could be ploughed. Such zones at the base of high ridges are the most valuable agrarian zones today.

*Yellow polygons* – areas with a slope gradient between 3–15 % slope that would require terracing in order to be cultivated. Wider terraces (until 8%) are preferred for cereals as they offer space for working, zones above 8% of slope are preferred for pulses and other crops not requiring large areas.

*Red polygons* – areas with a slope gradient between 15–30 % that would have required terracing giving narrower and deeper terraces that were preferred for vines and trees that send roots deep into the soil, and that do not require the same level of working as annual crops.

Terrain that is > 30% slope gradient and that would not have been suitable for terracing would have had some economic value as grazing for caprines.

Figure 6 Shows the Archaic and Classical poleis and the eco-agrarian potential that is contained within eight km buffers around the central place of each polis, while five km buffers have been placed over smaller second order settlements within each polis territory.<sup>26</sup> In addition zones of high agrarian potential (alluvial plains and flatter areas at the base of ridges) lying outside of buffers are shown. Figure 7 shows the same situation in the Hellenistic period.

The application of slope as a variable within remote sensing and spatial analysis and its suitability for GIS lies in the fact that we have complete coverage for the entire region. Other variables such as soil depth or type would also be suitable, but coverage is not based upon complete and universal observations for the entire region. In addition values that can be observed today may not have been present in Antiquity as variations in manuring strategies would have altered the situation over time and the natural processes of erosion may have led to considerable differences in soil depths.<sup>27</sup> Slope therefore represents a more convenient and universal variable for the purposes of region-wide remote-sensing, though we should note that due to dynamic and normal geomorphological processes it will be impossible to ever gain a complete and accurate snapshot of the ancient landscape at any given time. The polygons have been generated using a slope raster based upon a 1:50 000 elevation model and groundtruthed during fieldwork at a number of locations within Ionia, in order to check that the slope model correlates with the situation on the ground.<sup>28</sup>

## Drawing borders and territories

The Archaic and Classical polis was a spatially defined political entity.<sup>29</sup> Borders in the Greek world were disputed and territory and communities were defined as falling within one polis territory or another.<sup>30</sup> We also know that Ionia was treated as a region by ancient authors and often defined against the neighbouring regions of Aeolis to the north, Lydia to the east and Caria to the south.<sup>31</sup>

<sup>26</sup> The significance of five km and eight km buffers is discussed in detail in the following section.

<sup>27</sup> Bintliff 1992.

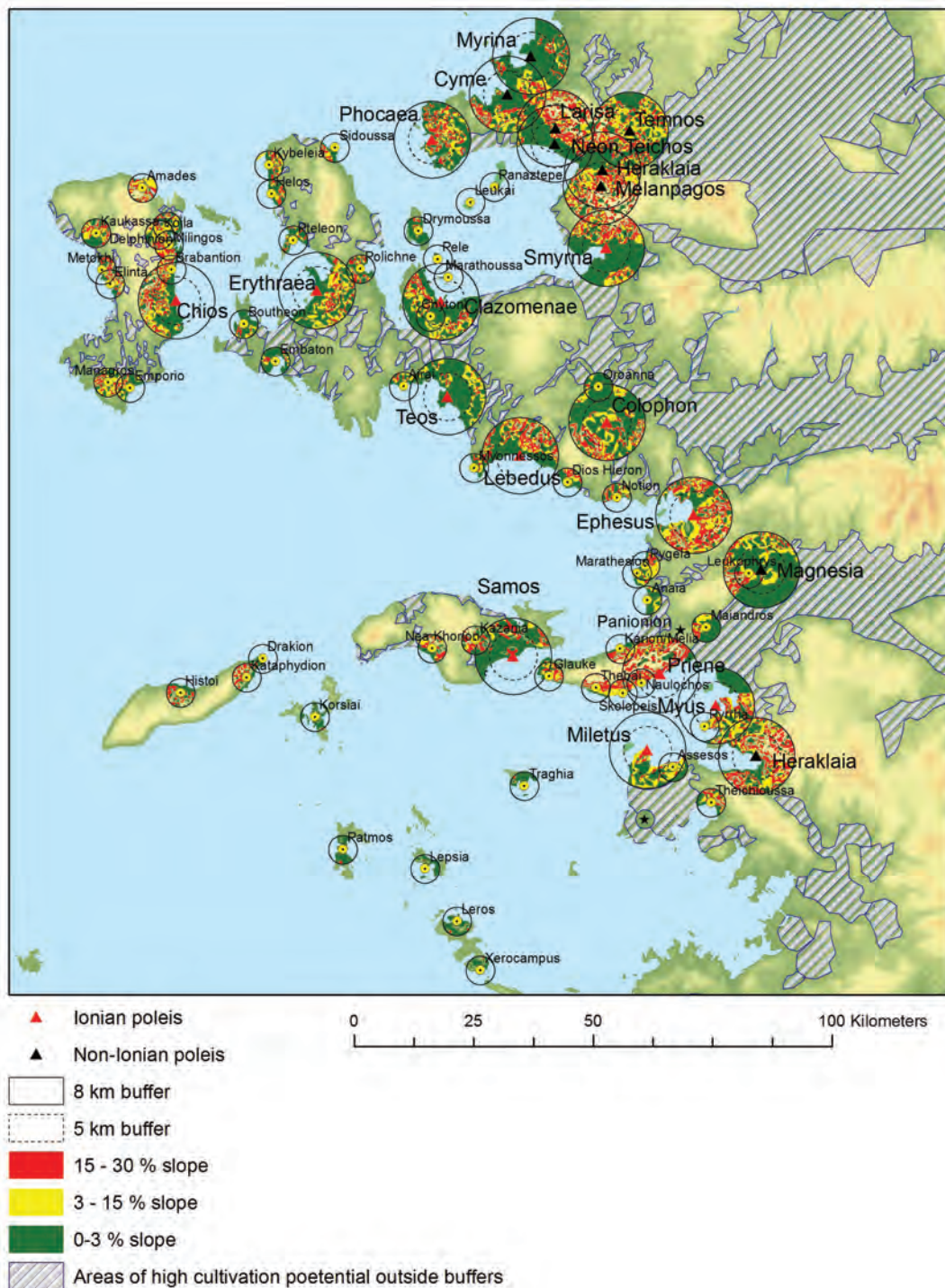
<sup>28</sup> Hill 2016: 96–97. Detailed groundtruthing took place on the western side of the Galesion ridge to the west of Metropolis, whilst less detailed groundtruthing was undertaken at a wide number of locations in Ionia during excursions in the region.

<sup>29</sup> Arist.pol.5.1303; Ober 1995; Rousset 1994

<sup>30</sup> Herodotos wrote that when Smyrna was taken over by an Ionian faction and the Aeolian population was ejected they were distributed amongst the other communities of Aeolis and enrolled in their citizen bodies. Hdt 1.150; Cf. Agger 1996 on border disputes and interstate arbitrations.

<sup>31</sup> Rubinstein 2004:1053–55; Hdt. 1.149 (for Aeolis) and 1.144 (for Caria) and 1.150 (for the Doran hexapolis), Thuc. 3.333.2; Xen an.3.5.15; Cf. Roosevelt 2009:25 on the border between Ionia and Lydia.





**Figure 7.** Map of Hellenistic period Ionia showing the distribution of cultivable land in Ionia within an 8 km radius of the urban poleis, and a 3 km radius of the smaller affiliated settlements.

By activating a number of textual source materials that either directly or indirectly tell us which communities were affiliated to which poleis and which borders were disputed, as well as general observations on how borders were placed in the landscape, it is possible to create a set of maps with the aim of exploring geopolitical Ionia. Named sites that have a known political affiliation have been plotted on the map. In this way, it has been possible to suggest and assume the extent of the individual polis territories in Ionia. We know from contemporary Greek sources that borders between neighbouring poleis often followed linear features in the landscape such as





**Figure 8.** Illustration showing algorithmic generated Thiessen polygons.

mountain ridges and valley bottoms.<sup>32</sup> A number of studies from Greek regions have confirmed that political borders were most likely negotiated, drawn up and agreed upon in this way.<sup>33</sup> In addition to assuming where borders went, textual data on border conflicts often that tell us that two poleis shared (and disputed) a common border, and as such this gives a degree of certainty confirming the assumptions that have been made. There is also archaeological or physical material that was used such as boundary markers (*horoi*) and the presence of forts that were aimed at marking and defending a border.

The analysis began by plotting Thiessen polygons using the central places of the 12 states of the Ionian *dodecapolis*, where polygons use a distance to centre factor and allocate space as belonging one territory or another based upon the distance to the nearest central place (Figures 8 and 9). These polygons were then adjusted to relate to the textual information of sites with known polis affiliation and topographic assumptions that actual borders would have followed watersheds and linear features such as rivers and coastline. For the case of the Ionian poleis the algorithmic generated Thiessen polygons correlated quite closely with the actual distribution of the poleis territories; a fact that tells us that the Ionian poleis are distributed evenly in the landscape and that distance to centre may have been an important variable behind the formation of political territory.

Named sites that have a known affiliation have also been plotted onto Archaic and Hellenistic maps (Figures 10 and 11).<sup>34</sup> In this way it is possible to suggest or assume the extent of a polis territory based upon which settlements were included within which polis territory. Only named and located

<sup>32</sup> Rousset 1994:177 In 51 of 71 cases the centre line of watercourses (*Thalweg*) were the most commonly used linear feature.

<sup>33</sup> Bintliff and Snodgrass 1985 and Snodgrass 1991 for Boeotia; Fachard 2012 for Eritrea (Euboea).

<sup>34</sup> The main sources used for the definition and chronologies of sites is Hansen and Nielsen 2004. Spatial information on location was taken from the University of North Carolina Ancient World Mapping Center, the Pleiades project <http://pleiades.stoa.org/>. In addition, a large number of articles on individual sites were accessed to supplement location, chronology and typology, these are referenced individually.

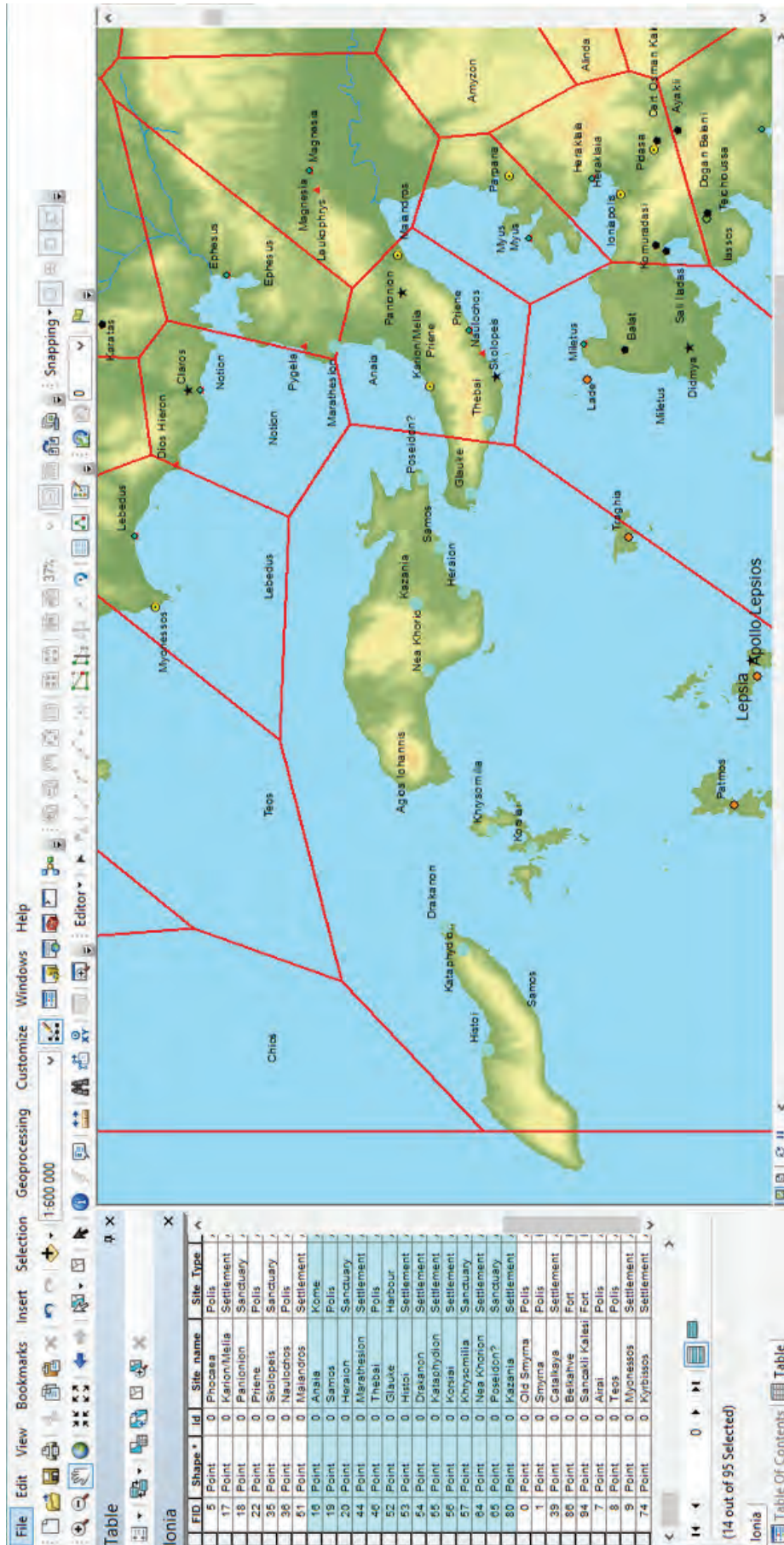


Figure 9. Illustration showing the adjusting of Thiesen polygons during the editing process





settlements that can be linked to the Archaic and Classical periods have been used, in addition some borders have been placed using a retrospective method. An example of this is the Erythrae border on the Isthmus to the Mimas peninsula, which becomes more visible in the Hellenistic period through the presence of Clazomenian border forts. I have assumed that the border would have been negotiated and recognised in earlier periods and that the forts do not represent a new border, but rather a formalisation of an older border.<sup>35</sup> The same has also been assumed for the border between Clazomenae and Teos and Smyrna's eastern and southern borders.

<sup>35</sup> Koparal 2009.





**Figure 11.** Map of geopolitical Ionia in the Hellenistic period showing the territories of the Ionian poleis.

The question of distance to centre has been seen as being central to the formation and development of the polis and its territory.<sup>36</sup> A number of scholars have highlighted the agrarian nature of Early Iron Age society, and pointed out that the early polis was essentially a large village, the terms *Dorfstadt*, *Ackerburgerstadt* or *Village State* have been used.<sup>37</sup> Farmers need to travel to their fields and holdings from where they live, while the nucleated settlement was the normal situation in the

<sup>36</sup> Bintliff 1999: 2006:209–10, 2012; Hill 2016:60–67; Kirsten 1956; Ruschenbush 1985.

<sup>37</sup> *Dorfstadt* (Kirsten 1956), *Ackerburgerstadt* (Weber 1976), *Village State* (Bintliff 2012)

landscape and territories, therefore the practical requirements of agrarian activities have been used to explain why Early Archaic period poleis were small in size and are often evenly distributed across a landscape.<sup>38</sup> The term *Normalpolis* was termed to express the statistical phenomenon where 80% of all Archaic period Greek poleis were similar in size (maximum territory of 100 km<sup>2</sup> and a distance to centre radius of five km) and were evenly distributed through the landscape.<sup>39</sup> The term *Protopolis* has also been used to express the smaller nucleated settlements that would have had a territory up to three km radius and that either merged to form the larger *Normalpoleis* of the Archaic period or remained as second order satellite communities within a larger state structure.<sup>40</sup> *Großpoleis* is another term that has been used to explain the existence of larger states that formed through the amalgamation of settlement components; in this scenario a distance to centre radius of eight km (or more) is observed.<sup>41</sup> The relevance of these types is valid when discussing polis development and territory in Ionia as large states dominate to a greater degree than in neighbouring regions. In order to express these concepts and to test how far the Ionian settlement pattern conforms to these models, buffers of three, five and eight km have been applied to the maps.

### Presentation of the material and sources for Ionia

In order to offer a transparent analysis, I will present the settlement and territorial material that are expressed in the maps and discuss the changes that occur from the Archaic and Classical periods to the Hellenistic period and the sources that have been used.<sup>42</sup>

**Chios;** population estimates based upon the number of Chian ships at the Battle of Lade suggest that the population of the Island was large; Herodotus states that one hundred Chian ships participated in the Battle of Lade, each carrying 40-armed citizen troops, the largest number of ships from any Ionian polis.<sup>43</sup> Chios was also considered to be a wealthy state in contemporary sources.<sup>44</sup> Settlement on Chios is characterised by a dispersed pattern of smaller nucleated sites. It has been noted that this pattern of dispersed farmsteads and settlements also increases through the Hellenistic and Roman periods, which is striking.<sup>45</sup> There may be several reasons for this; such as a less polarised political system (oligarchy persisted longer on Chios) and insular security that did not require increasing nucleation as a mechanism for common defence from outside the polis.<sup>46</sup> Another reason may be that there is a mix of potential resources in the landscape, leading to a mosaic of settlement across the island despite the western coastal plain being favoured as the main settled area. Notwithstanding a fragmented settlement pattern Chios was a politically centralised polis, though complete political unification may have occurred as late as 600–550 with the formation of a *boulé* with 50 representatives from each *phylae* (total unknown).<sup>47</sup> It is perhaps valid to note that Samos the other large Ionian insular state was also a unified polis from the Early Archaic period, whilst (non – Ionian) insular Lesbos did not unify and contained five poleis,<sup>48</sup> and Rhodes three poleis until 408/7 when the island finally unified.<sup>49</sup> After the King's Peace in 386 BC Chios and Samos lost their territories on the mainland.

<sup>38</sup> Kirsten 1956; Philippson 1950; Ruschenbusch 1985.

<sup>39</sup> Kirsten 1956; Ruschenbusch 1985 based upon data from Greece.

<sup>40</sup> Bintliff 1999:18–20.

<sup>41</sup> Hansen and Nielsen 2004:71–72 who include data from colonial poleis (where *Großpoleis* with eight km were more common) gives a figure of 69% statistical conformity for the *Normalpolis* type, against Ruschenbusch's 80% statistical conformity.

<sup>42</sup> Hill, D 2016 contains a fuller version of the study with extensive references.

<sup>43</sup> Hdt.6.8. Ships at Lade by polis: Chios 100, Miletus 80, Lesbos 70, Samos 60, Teos 17 Priene 12, Erythrae 8, Myus 3, Phocaea 3.

<sup>44</sup> Thuc. 8.40.1, 8.40.1, 8.45.4 Alcibiades claimed Chios was the wealthiest of all Greek poleis.

<sup>45</sup> Shipley 1987:242–45 (when seen in relation to Samos and mainland Ionia).

<sup>46</sup> Shipley 1987:244–45.

<sup>47</sup> Rubinstein 2004:1066 (ML8=PEP Chios 23).

<sup>48</sup> Hansen *et al.* 2004:1018.

<sup>49</sup> Nielsen and Gabrielsen 2004:1197; Diod 13.75.1.

Another element regarding the early development of Chios is that the excavations at Emporio that were primarily focused on the Bronze Age (BA) site, uncovered a large EIA village and megaron hall with circuit walls, which was superseded by a temple to Athena from 700 BC.<sup>50</sup> This is of particular interest, as it suggests a pattern of early settlement (and political) focus upon a chieftain's dwelling, which is then later replaced by a sanctuary as the main central structure. This aspect correlates with the universal model that sees centrality and nucleation develop in the EIA around certain individual sites, which shifts in later phases to universal religious sites as seen through an increase in votive material at common sanctuaries, and followed later by temple construction.<sup>51</sup> The role of cult is a central element in this respect and temple construction is clearly connected to the development of the early Greek polis.<sup>52</sup> The site at Emporio declines and is abandoned around 600 which has been seen in connection with increasing political centralisation at the site lying today under Chios town.<sup>53</sup>

In terms of settlement in the landscape there is a clear pattern on Chios, that the coast is favoured and that known settlements occupy level areas suitable for cultivation at the base of slopes and mountains. There is a clear duality of site favourability between access to varied agrarian potential and access to the maritime zone; we should assume that all suitable locations corresponding to both criteria were likely to have been occupied by politically structured communities by the Archaic period.<sup>54</sup>

**Phocaea;** in relation to the size of its territory Phocaea was a deceptively large polis; recent archaeological work has highlighted the scale and size of urban Phocaea and in particular its defensive walls, that were five kilometres long in the 6th century and faced with carved stone blocks.<sup>55</sup> Phocaea sent three ships to the Battle of Lade.<sup>56</sup> Phocaea minted in the 6th century and was one of the earliest polis to issue electrum coins.<sup>57</sup> The polis was strongly oriented to the maritime economy. Phocaeon colonisation followed a different path to Milesian and Ionian colonisation in that it took place in the 6th century (later than the main period of Greek colonisation in the 8th-7th centuries) and predominantly in the western Mediterranean; Massilia and Alalia in France, Emporion in Spain and Hyele in Campania, and/or at places a long distance away from Phocaea.<sup>58</sup>

Modern Foça covers the urban archaeological area so that only small keyhole excavations have taken place. Parts of Phocaea were however excavated by Ekrem Akurgal in the 1950s and later through the 1990s by a team from Izmir.<sup>59</sup> The site was settled in the Late Bronze Age (LBA), and some settlement continuity into the Early Iron Age (EIA) can be inferred. A megaron type oval house suggests that the process of increasing settlement nucleation began in the Geometric period around socio-hierarchical structures, similar to Chios (Emporio), before communal sanctuaries gave societal focus.<sup>60</sup> Phocaea was urbanised by the 6th century and later enclosed by walls.<sup>61</sup>

In terms of territory Phocaea is physically separate from any other Ionian state, though as a maritime state this is perhaps irrelevant. The only other polis that Phocaea would have shared a terrestrial border with is Cyme (Aeolis) to the north east, though as the progradation of the Hermuz

<sup>50</sup> Boardman 1967; Vaessen 2014:24.

<sup>51</sup> Morgan 2003:141; Østby 2014:23–30 on Athena Alea at Tegea.

<sup>52</sup> De Poulignac 1995; Simon 1986; 1997; Østby 2014a, 2014b for Tegea.

<sup>53</sup> Boardman 1967:37–38.

<sup>54</sup> Shipley 1987:266.

<sup>55</sup> Öziğit 2003:342, 2004:442–43; Hdt. 1.162–64. The walls are mentioned as being several stades long and faced with stone.

<sup>56</sup> Hdt. 6.8.

<sup>57</sup> The Greek word for seal was "phoce" (Φώκη), and seals were regular images on Phocaeon coinage, the earliest being depicted on an electrum stater from 600–550. Head 1892 Catalogue of the Greek coins of Ionia. British Museum.

<sup>58</sup> Hansen and Nielsen 2004:1390; Morel 2006:359–360. Lampascus on the Hellespont was probably the earliest Phocaeon colony from 654 BC. Massilia is considered to have been founded around 600, Morel 2006:364

<sup>59</sup> Akurgal, E. 2007:233; Greaves 2010:98–99.

<sup>60</sup> Akurgal, E. 2007:116–118; Vaessen 2014:14.

<sup>61</sup> Rubinstein 2004:1090.



delta progressed an increasingly larger land area would have developed between insular Leukai that was affiliated to Clazomenae, and the larger settlement of unknown name and affiliation at Panaztepe to the south west. The dynamic and shifting nature of the Hermuz delta landscape would have led to a relatively fast changing situation with the potential to bring both negative and positive developments for the economies of states in this area. Phocaea is of interest for this study of Ionian settlement as it is clear that a large territory was not necessary for a strong polis to develop in Ionia. There was suitable agrarian capacity in the territory as shown by the distribution of green and yellow polygons in the territory of ca 100 km<sup>2</sup> that would likely have been adequate for the polis.

**Erythrae** had a large and well-defined territory with few borders to other poleis and little ambiguity that could have led to destructive conflicts with neighbouring states. Erythrae issued coins from the 6th century and city walls were built in the Hellenistic period.<sup>62</sup> Some fieldwork has been carried out at Erythrae since the 1960s, but little has been published..<sup>63</sup> Ekrem Akurgal noted that excavations at the acropolis recorded monumental Archaic period buildings (tentatively dated from 670–550 BC) at the time of polis formation.<sup>64</sup> The earliest phase of the temple to Athena is from the 8th century.<sup>65</sup> Epigraphic attestation of a prytanion and a stoa exists from the 4th century.<sup>66</sup> In the Athenian tribute lists there are five named dependent settlements in the territory: Embaton, Boutheia, Ptelion, Sidoussa and Polichna and some discussion as to whether they were independent poleis or included within the polis structure of Erythrae.<sup>67</sup> The pattern of settlement suggests a fragmented settlement structure that underwent political consolidation and centralisation by the Classical period; it has been suggested that the whole territory was not finally centralised under one dominant polis until the 5th century but existed as a syntelia until 450.<sup>68</sup> Rubinstein notes that the settlement pattern for the Mimas Peninsula was complex and that there are several named settlements (mentioned in the Athenian tribute lists) that have yet to be located. In terms of the agrarian potential the Mimas Peninsula is a mosaic of many small landscape compartments with a high eco-agrarian potential. In addition, there is a considerable coastal zone with many harbours and sheltered areas; it is perhaps therefore logical to expect a fragmented political situation continuing at Erythrae later than in other states. Erythrae had the largest territory of all Archaic and Classical poleis in Ionia.

We should note that the existence and location of the Clazomenian forts at Cinderesi and Hacigebes show that a border crossed the isthmus to the Mimas peninsula.<sup>69</sup> I suggest that this represents an older border, which defines the large area of the peninsula as one political unit, albeit based upon a number of settlements and communities. The size of the territory would also offer challenges to political centralisation as many spread and dispersed districts and communities would have to be politically structured within one polis. The fact that the territory has coastlines facing in three different directions (to the Gulf of Smyrna, towards Teos, and west towards Chios) would also have created communities with varying contacts and interests. In that respect Erythrae should be seen as an interesting and perhaps successful case study of how a large polis can be constructed from many communities.

In the Gediz (anc. Hermuz) delta the two settlements of **Leukai** and **Panaztepe** are worthy of discussion. Leukai was an Aeolian polis that came under the control of Clazomenae by the

<sup>62</sup> Hansen and Nielsen 2004:1374.

<sup>63</sup> Akurgal excavated here from 1964–1984, in 2003 and 2006 Coşkun Özgünel and Kutalmış Gökay of Ankara University carried out preliminary survey, see Akalin 2008; Akurgal, E. 1975; Vaessen 2014:23.

<sup>64</sup> Akurgal, E. 2007:233.

<sup>65</sup> Mitchell 1985:83.

<sup>66</sup> Rubinstein 2004:1075

<sup>67</sup> Rubinstein 2004:1073 (IG I3 273.III.).

<sup>68</sup> Rubinstein 2004:1074; IG 2791.48–49.

<sup>69</sup> Koparal 2009 on border forts at Clazomenae.

Hellenistic period; it would originally have been situated on an island though later became a coastal settlement as the coastline was extended through progradation. Panaztepe has been excavated and shown to be an extensive settlement on a larger island with continuity from the LBA to the Archaic period and importantly with Geometric period material.<sup>70</sup> Panaztepe is known only through archaeological material, such that its name and affiliation are unknown, however it is likely that it was a site of Aeolian affiliation as were the other sites along the Hermuz river. Both Leukai and Panaztepe had harbours and would have kept access to the sea, it may be possible that they were able to profit from a trading role on behalf of Heraklai, Neon Teichos and Larissa that lay further up the Hermuz river and would have lost direct maritime contact earlier.

*Clazomenae* is one of the most important archaeological sites for continual habitation from the EBA on the west Anatolian coast and has been excavated and published by the University of Ankara.<sup>71</sup> Importantly for Ionia the excavations at Limantepe have been able to show evidence for continual settlement from the LBA to the EIA; of particular interest for regional chronologies are preserved layers in the LHIII.<sup>72</sup> The central urban place of Clazomenae seems to have migrated at times between Chyton, Limantepe and Karantina, a small islet connected by a causeway at one km from Limantepe, which became the main site from the 5th century due to repeated attacks.<sup>73</sup> It is interesting to note that the political relationship between Limantepe and Chyton is unclear and the duality of urban sites has been seen as a factor behind conflict where competing groups developed at each settlement, (the situation can present a parallel to Colophon and Notion).<sup>74</sup> There are signs of abandonment at Limantepe around 495–400 BC and perhaps settlement migration to Chyton.<sup>75</sup>

Clazomenae seems to have had a conflictual border relationship to Teos as can be seen by the presence of forts along the border,<sup>76</sup> and also in an arbitration by Kos dated to ca 302.<sup>77</sup> There is no significant change to the territory of Clazomenae from the Archaic and Hellenistic periods other than the formalisation of visible border architecture, however without excavation it cannot be stated that the Hellenistic forts did not predate early structures. The site at Leukai apparently came under Clazomenae control (at least by the Hellenistic period).<sup>78</sup> This is of interest as there may have been a commercial role that Leukai carried out for the landlocked poleis of the Hermuz river.<sup>79</sup> Recent and on-going work at Clazomenae has been effective in identifying and publishing its economic role. The area around modern Urla that is today an important productive area (for olive trees), should also have been so in Antiquity.<sup>80</sup> Recently in this area a large-scale oil production site from the Archaic period was excavated and restored.<sup>81</sup> Finds of pottery kilns and the known exports of amphora and painted ceramic sarcophagi, and pottery are also a well attested and strong element to the Clazomenian economy.<sup>82</sup>

For the land-use model it is clear that the eight km buffer is too small to include all the agrarian zones of the territory. Clazomenae had a larger territory than either Ruschenbusch's or Hansen's normal type and that was made up of dependent settlement poleis and several settlement components. The chora of Clazomenae was certainly extensively settled, and defended against

<sup>70</sup> Erkanal 1997; 1998. Panaztepe had a harbour, a cemetery, an acropolis with an Archaic period temple and a domestic quarter. The structures and the material culture excavated at Panaztepe are similar to the East Greek poleis. What is interesting is that it has not been identified and/or linked to a named site in textual sources.

<sup>71</sup> Erkanal and Günel 1995; Rubinstein 2004:1076; Vaessen 2014:20–23.

<sup>72</sup> Ersöy 2003; 2004: 2007.

<sup>73</sup> Paus 7.3.9; Strab 14.1.36.

<sup>74</sup> Gehrke 1985:78–79; Hornblower 1991:405.

<sup>75</sup> Rubinstein 2004:1070.

<sup>76</sup> Koparal 2009.

<sup>77</sup> SEG 967.10; Ager 1991:67–69.

<sup>78</sup> Rubinstein 2004:1046; Diod.15.18.2. It has also been noted that coin issues from Clazomenae and Leukai are very similar, Babelon (Traité II.21159–60).

<sup>79</sup> Plin. HN 5.119 on Leukai having been a coastal city situated on a promontory that was previously an island.

<sup>80</sup> Koparal 2011:139.

<sup>81</sup> Koparal and İplikçi 2008. It is the most complete example from Antiquity with both weights and base preserved.

<sup>82</sup> Koparal 2014; Ersöy 2003.

Teos and Erythrae, however interestingly there are no towers constructed in the direction of Smyrna, which suggests that competition over territory eastwards was not so strong. It may be that distance was the reason for this and in that respect a radius maximum away from the centre may have been reached.

**Teos** was a large polis that sent 17 ships to the Battle of Lade.<sup>83</sup> The polis was valued by the Delian League at six talents, which was the same as Miletus and Ephesus.<sup>84</sup> Thales of Miletus had proposed Teos as a logical centre for centralising and unifying the Ionian poleis in the 6th century.<sup>85</sup> Teos had a southern and northern harbour and a small hill that was fortified as an acropolis, such that site-location fits the typical location criteria that Ernst Kirsten noted for early East Greek poleis. The hinterland is made up of varied agrarian potential, though with the emphasis on flatter and more open topography. The site location was therefore positive for settlement and economy. The population has been estimated at 2–3000 (free male) citizens.<sup>86</sup> The pattern of settlement at Teos suggests that the formation of the polis developed gradually into a larger centralised state by the Archaic period through the inclusion of smaller settlements within its political structure.<sup>87</sup> A number of elements note continuity of settlement at Teos from the LBA to the EIA and surface survey at the site collected Late Geometric – Classical period ceramics.<sup>88</sup> As with most of the other Ionian poleis Teian territory is larger than the five km and eight km buffers and there are dependent settlements and a complex structure of settlement components.

At the north-eastern extent of Teian territory was Arai that was a dependant Teian polis at least by the Hellenistic period, fortified in the 6th century and minted coins in the 4th century.<sup>89</sup> At the southern extent of Teian territory the coastal strip extends towards the affiliated settlement at Myonnessos.<sup>90</sup> Myonnessos occupied a strategic point on a coastal promontory with a small sheltered harbour. The site was small and without water could not have held a large population, though on the mainland behind are usable agrarian areas.<sup>91</sup> A third settlement inland at Kyrbissos joined with Teos in *sympolitea* in the Hellenistic period.<sup>92</sup> Each of these three settlements at the edges of Teian territory suggests that Teos expanded to include these smaller poleis in order to define borders and increase territorial area. These territorial changes may have occurred before the Hellenistic period and Teos would have had some territorial claim to these settlements and their territories before this. It may be that political access to the Panionion was dependent upon Teian membership, which would have made political merging with Teos attractive for smaller communities. A proposed synoicism of Lebedus to Teos by Antigonos Monophthalmus around 303 was never carried out, and the population of Lebedus was not long after (recorded as being) moved to the re-founded Arsinoe Ephesus.<sup>93</sup>

**Lebedus** Very little is known of both the polis and the territory of Lebedus. It was an independent polis and participant with voting rights at the Panionion and Ionian *koine*.<sup>94</sup> Lebedus was walled in the Hellenistic period,<sup>95</sup> though this has yet to be confirmed and no traces exist today. Almost no fieldwork has been carried out and little is visible today. The size of the territory is not large, but it did occupy a 20 km stretch of the coastal plain. Interestingly in the Hellenistic period its human resource was seen to be more valuable than its political status: Antigonos I Monophthalmus

<sup>83</sup> Hdt. 6.8.1.

<sup>84</sup> Rubinstein 2004:1101; Thuc. 8.16.20.

<sup>85</sup> Hdt. 1.170.

<sup>86</sup> Gauthier 1990:86.

<sup>87</sup> Koparal and Tuna 2017; Iren and Ünlü 2012: 309–10; Vaessen 2014:26.

<sup>88</sup> Meriç, R., 1987.

<sup>89</sup> Rubinstein 2004:1063.

<sup>90</sup> Rubinstein 2004:1063.

<sup>91</sup> Bean 1966:146–49.

<sup>92</sup> Koparal 2013.

<sup>93</sup> Ager 1995:61–63.

<sup>94</sup> Rubinstein 2004:1080.

<sup>95</sup> Weber, G. 1904.



proposed a synoicism between Lebedus and Teos in 303 BC,<sup>96</sup> and Lysimachus saw Lebedus as a source of settlers for Hellenistic Ephesus,<sup>97</sup> The site occupies a small islet linked to the mainland by a causeway, a similar topographic situation as at Airai and Myonessos. We can infer that these types of locations were valuable in early Ionia as they provided both harbours and defensible sites and access to nearby agrarian areas; as previously noted Ernst Kirsten saw such locations as being typical for early East Greek settlements. A final point to make about Lebedus is that it is the least visible of the sovereign members of the *dodecapolis*, and until we know the criteria upon which the 12 poleis were made we can only speculate on how significant Lebedus would have been in the seventh century and earlier.

**(Old) Smyrna** (Bayrakli) was originally an Aeolian polis, though possibly with some Ionian population, that was taken over by Colophonians who ejected the Aeolian citizens, which must have happened before 688.<sup>98</sup> Politically therefore Smyrna was an affiliate of Colophon and only received full participation with voting rights at the Panionion in the 3rd century.<sup>99</sup> Lydia sacked and took Smyrna in 585.<sup>100</sup> Smyrna has been seen as one of the earliest Iron Age urban centres in the region.<sup>101</sup> Cook dated circuit walls to 875–825, which were replaced around 700 after an earthquake.<sup>102</sup> Akurgal estimated there were 5–600 houses between 630–545 and an urban population of 3000 inhabitants.<sup>103</sup> Old Smyrna has been continually excavated over a long period of time, however, after the first phases of excavation from 1948–1951 and 1966,<sup>104</sup> very little has been published and certainly nothing in any detail; as such the material cannot be used by researchers.<sup>105</sup> This presents serious problems for Ionian research as Old Smyrna is one of those sites with the potential to produce long term chronologies from the LBA-EIA able to elucidate the development of Anatolian, Aegean and mainland Greek sites.

**(New) Smyrna** (Pagos) was re-founded and relocated to a new site within its own territory seven kilometres away by Antigonos I Monophthalmus,<sup>106</sup> though Lysimachus continued and probably finished the work after 301 BC as numismatic evidence has linked the name of his daughter Eurydikeia with Smyrna suggesting a renaming between 288–281 BC.<sup>107</sup> The dominating features of new Smyrna are the fortifications on Mt Pagos (Kadifekale). The re-foundation is interesting in that there is no apparent ecological need to relocate as there was at Ephesus and (possibly) Priene. The relocation of Smyrna may be related to developments in urbanisation and planning, in particular to water supply, which could not be implemented at the old site, and that autocratic will with available financing decided simply to build a modern city.<sup>108</sup> The old site was not defensible in any efficient way (the settlement was on flat terrain) despite there being defensive walls in the Archaic period,<sup>109</sup> and Strabo mentions that it was a sorry place that had taken on the appearance of a village.<sup>110</sup> Hellenistic Smyrna as a new foundation was based on a regular grid plan below a fortified acropolis. Hellenistic Smyrna has recently been the focus of excavations around the Agora

<sup>96</sup> Paus. 7.3.5; Syll. 333.

<sup>97</sup> Rubinstein 2004:1080 (Syll. 344).

<sup>98</sup> Hdt.1.149.1, Mimmernos fr.9 the pre-688 dating is based upon a recorded Smyranean (Onoamsatos) victor at the Olympic games; Paus.5.1.7.

<sup>99</sup> Hdt. 1.143.3 on the rejection of Smyrna's application for full participation with voting rights. However, Paus. 5.8.7 states that Smyrna was Ionian by 688, presumably on wider criteria than political representation at the Panionion. Cook 1952:104 suggested that Smyrna was Ionian by 800 based upon ceramic traditions.

<sup>100</sup> Hdt.1.16.2.

<sup>101</sup> Cook, J.M. 1965.2.

<sup>102</sup> Cook, J.M and Nichols1998.

<sup>103</sup> Akurgal 1983:14.

<sup>104</sup> Cook, J.M. and Ekrem Akurgal excavated in the early 1950s and again from 1966 which resulted in two publications: Akurgal, E. 1983, and a delayed publication in 1998 (Cook, J. M. and Nichols 1998). After that no detailed publications have been produced.

<sup>105</sup> Greaves 2010:50.

<sup>106</sup> Billows 1990.

<sup>107</sup> Milne 1941:3–5; Cohen, G. 1995:183.

<sup>108</sup> Hill 2016:299–300.

<sup>109</sup> Cook, J.M and Nichols1998.

<sup>110</sup> Strab. 14.1.37.

and theatre under the leadership of Akim Ersöy. The city grew considerably in the Roman period and competed with Pergamon and Ephesus to be 'First city of Asia'. The Roman agora was large, with a quadratic colonnaded stoa around a 120 x 80 metre large courtyard.<sup>111</sup>

The Smyrnaean chora's agrarian potential is high and varied. The presence of a fort at Belkahve on the route towards Sardis marks the eastern edge of the territory.<sup>112</sup> Towers at Akçaya and Çatalkaya where Archaic to Hellenistic period ceramics have been found also suggest how far the territory extended.<sup>113</sup> A northern tower marks the extent of the chora towards Melanpagos and Aeolis. The Smyrnan chora clearly carries considerable production potential; again, we need to note that Smyrna displays the characteristics of a *Großpolis*, with multiple settlement components and a large territory that was delineated and defended.

**Colophon** was the only Ionian polis whose central urban place lay inland and the only polis where the main urban centre was not also a port. Colophon was a powerful and politically active polis in the Early Archaic period and was involved in the Meliac War and the taking of Smyrna and ejection of the Aeolian population.<sup>114</sup> Colophon came under Lydian control in the reign of Gyges in the first half of the seventh century.<sup>115</sup> Colophon's political and economic sphere of interest was more inland than maritime; this fact is perhaps reflected in the territorial ambiguity that grew up between Colophon and her affiliate Notion. The well-known split between the urban centres that Aristotle wrote about had definitely occurred by the Hellenistic period, though Notion was most probably an independent political unit in the 5th century BC.<sup>116</sup> Athens used Notion as a base and might have played on the differences in order to gain a foothold in the region.<sup>117</sup> Another aspect of Colophon's territory is the important Pan-Hellenic oracular sanctuary at Claros some four km inland from Notion in the Ales Valley, which in effect gave three distinct central places to the territory and might have further added to the political fragmentation, that led to Colophon becoming a politically weaker state by the Hellenistic period.<sup>118</sup> A fortified circuit wall was built to enclose the city and enlarged its area between 311–306 BC.<sup>119</sup> After 301 BC Lysimachus destroyed the city and transferred the population to Ephesus.<sup>120</sup> However, settlement continued so whatever was transferred to Ephesus did not lead to the terminal abandonment of Colophon. Little systematic excavation has been carried out at the site that is heavily wooded, steep and spread across several small hills.<sup>121</sup> Less is known archaeologically about Colophon than other sites, however, small investigations have been undertaken in recent years.<sup>122</sup>

An interesting element to research at Colophon is the presence of funerary evidence from the LBA to Antiquity that contains both Mycenaean and Anatolian pottery within the graves. This has been interpreted as a meeting place between Aegean and Anatolian impulses and might be an expression for the cultural duality that is later expressed in the Colophon material in the Archaic period (with both Lydian and Ionian influences).<sup>123</sup> Funerary evidence shows intensification of activity in the Geometric period, which has recently been interpreted as settlement nucleation at the site leading to polis formation by the Archaic period,<sup>124</sup> and that a shift in burial traditions occurred in

<sup>111</sup> Akurgal. 2007:122.

<sup>112</sup> Rubinstein 2004:1099 a fort with 6 metre thick walls and Archaic period pottery.

<sup>113</sup> Rubinstein 2004:1097; Bean 1955; 1966; For Çatalkaya see Meriç and Nollé 1988:225–26.

<sup>114</sup> Vitr. 4.1.4–5 on the Meliac war Hdt. 1.16.2, 1.150.1–2 for the Smyrna conflict.

<sup>115</sup> Hdt. 1.10.5.1.

<sup>116</sup> Arist. Pol. 5.1303.

<sup>117</sup> Aslaksen 2007; Milne 1941.

<sup>118</sup> De la Genière and Jolivet 2003; de Polignac 1995; Holland 1944.

<sup>119</sup> Milne 1941:91.

<sup>120</sup> Paus.1.9.7.

<sup>121</sup> Excavations were interrupted by the Greco-Turkish war in 1921, see Holland 1944.

<sup>122</sup> Bammer 2011; Mariaud 2011; Muss *et al.* 2014.

<sup>123</sup> Holland 1944; Aslaksen 2007:62.

<sup>124</sup> Mariaud 2007: 2011:692.

the seventh century when Colophon and other Ionian poleis develop their own traditions at the expense of a previously homogeneous ethnic (Ionian) identity.

The agrarian potential of Colophonian territory is high with significant well-watered plains and low hills available for cultivation. Colophon had a complex territory made up of several settlement components; the site of Oroanna to the north was also a defended semi-urban settlement.<sup>125</sup> The Colophonian economy would have been more based upon estates and agrarian production and the tumuli and other visible funerary monuments that characterise the Colophonian landscape reflect this. Colophon shared a border with Metropolis from the mid-Hellenistic period, and erected a decree at Claros relating a judgement by the Roman senate against claims made by Metropolis that Colophonian magistrates had arrested Metropolitan citizens on Metropolitan land.<sup>126</sup> The details of the dispute are unclear, but it was serious enough for Menippus of Colophon to (unsuccessfully) seek arbitration from the Senate in Rome against the claims by Metropolis.<sup>127</sup> The way in which neighbouring Hellenistic Metropolis was founded as an independent polis with a defined territory, suggests that the land was not polis land before its foundation, and this gives an indication of where Colophon's eastern border lay. The main change to Colophonian territory by the Hellenistic period is the loss of Notion and possibly also Dios Hieron, which by the Hellenistic period are referred to as independent poleis in inscriptions.<sup>128</sup>

**Metropolis** was founded as a polis in the second half of the 3rd century, most probably as a Seleucid colony, within a previously neutral (non-polis) landscape compartment at the eastern edge of Ionia.<sup>129</sup> Metropolis as a new and planned community was populated through synoicism between indigenous local communities in the Torbali Plain and Seleucid veterans. The site is dominated by a fortified acropolis and town below it that was enclosed by a curtain wall. In the mid-2nd century under Attalid patronage considerable building projects were made including the construction of a theatre, stoa and roofed bouleuterion. Metropolis and other new Hellenistic poleis in the reign should be seen as the west – east spread of Hellenic urbanisation in the wake of the Macedonian take-over of Asia Minor.<sup>130</sup> The extension of Ephesian territory eastward along the Cayster Valley into what had been Lydia was part of the same process, that would also have included non-Greek rural communities into the polis; what had been the western border of Lydia and then later Persian Lydia was also a cultural border clearly defined against Hellenic Ionia. When this border was removed Greek cultural and political norms were spread eastwards into Anatolia.<sup>131</sup> That the Torbali plain did not make up any part of polis territory before the foundation of Metropolis, should be seen as relating to the conservatism of the polis system. The plain was highly suited for settlement and an important trans-regional communication route, yet it remained unclaimed by any of the states that bordered it. The reasons for this were surely linked to a reluctance to expand beyond previously agreed borders, which were regulated by the Ionian league, Lydia and later Persia. In addition, there was also the problem of including a non-Ionian population within an Ionian polis. Identity driven territory therefore would have difficulties in expanding beyond the spatial boundaries as defined through identity parameters. Therefore Metropolis' foundation should be seen as a radical shift from polis driven Ionia to autocratic driven Ionia, and a clear example of Hellenistic pragmatism and its desire to create a new world order.

**Ephesus** demonstrates continual settlement from the Bronze Age, though with a shift(s) in site location due to progradation and the dynamically changing conditions at the mouth of the Cayster

<sup>125</sup> Robert 1946:512–23.

<sup>126</sup> *I. Claros Menippus*, I col. I lines 50–54 and col.2 lines 1–7.

<sup>127</sup> See Hill 2016 for a wider discussion of the foundation of Metropolis as a Seleucid colony in the mid-3rd century. *I. Claros Menippus*, I, lines 23–27, 37–40; Ferray 1991:563; Kallet-Marx 1995:12–8; Metcalfe 2005:184.

<sup>128</sup> Rubinstein 2004:1070; SEG 39 1244,1,122.

<sup>129</sup> Hill 2016 for a thorough presentation and discussion of the Metropolis material. See also Dreyer 2008:654, Meriç 1982:14.

<sup>130</sup> Hill 2016:14–15, 299–301.

<sup>131</sup> Hill 2016:299–301.



River. Ephesus was a consistently large and central Ionian polis that (in comparison to Miletus, Samos and Archaic period Colophon) did not actively seek expansion, and did not found a single colony.<sup>132</sup> No other polis in Ionia consistently attracted the same level of external political and economic investment throughout Antiquity, which suggests that location was an important aspect to Ephesus' success as a port and city. Hellenistic Ephesus became the centre for Lysimachus' rule in the region after the battle of Ipsos in 301 BC.<sup>133</sup> Lysimachus re-founded the city as Ephesus Arsinoe (named after his second wife Arsinoe II of Egypt) at the base of Mt Preon, and brought in settlers from Colophon and Lebedus.<sup>134</sup> Lysimachus had a nine kilometre circuit wall built to enclose the new city.<sup>135</sup> The changes that came to Ephesus with the Hellenistic period would have been radical as the citizen body of Ephesus would have been altered and the identity of the polis would by necessity have changed. In addition, Ephesus would increasingly have been part of a globalised world and responsive to outside influences. That these developments occurred without any apparent friction is suggestive of an open and adaptive society.

The maps show that Ephesian territory expanded considerably from the Classical period to the Hellenistic and Roman periods. Roosevelt places the earlier Archaic and Classical period Ephesian/Lyidian border to the west of the settlement at Almoura (based upon tumuli and other finds).<sup>136</sup> The Ephesian border with Lydia has also been seen to follow the Tmolos Ridge, the border has been drawn here based upon the presence of forts on the Ionian side and Roosevelt suggests there was a wider border zone between Ionia and Lydia.<sup>137</sup> Recep Meriç places the Ephesian border in the Roman period further east where Hypaipaeon territory began (based upon Roman milestones and *horoi*),<sup>138</sup> which show how much territory was gained by the Imperial period. Roman Ephesus had the largest territory of all the Ionian poleis, which extended up the Cayster Valley as far as modern Tire.<sup>139</sup> The next urban foundation along the Cayster Valley was Hypaipa founded perhaps from the mid-third century BC that lay sixty five kilometres from Ephesus towards the east.<sup>140</sup> Metropolis was twenty five kilometres to the north-west along a tributary of the Cayster. Another territorial aspect to note are the extensive sacred lands belonging to the Artemesion in the lower Cayster Valley within Ephesian territory.<sup>141</sup> Ephesus shared a common border with Priene, and also with Magnesia that was a cause of a war.<sup>142</sup> Ephesus later gained control over Marathesion, Anaia and Pygelia though it is unclear when Samos finally lost control over these areas on the mainland after the King's peace in 386,<sup>143</sup> which were then governed by Mausolus as Satrap.<sup>144</sup> Ephesus may have gained territorial control of this area during the Hellenistic period.<sup>145</sup>

The agrarian potential within the chora shows the hilly nature of the landscape with few flat zones near the urban centre, such that a large and developing Ephesus would have been dependent upon agrarian production from a wider hinterland. One aspect that should be mentioned is that the gradual extension of the delta zone through the silting of the Cayster Valley would have provided a larger cultivable area over time. However, as Ephesian economic and political status was dependent

<sup>132</sup> Plin. *HN* 5.112 claims Miletus founded 90 colonies, though only 45 are mentioned in other sources. See Cook, R. M. 1946:77; Ephesus may have been a minor participant within Milesian colonisation in the Black Sea Tsetschladze *et al.* 2004.

<sup>133</sup> Diod. XX; Plut.*Dem.*29.

<sup>134</sup> Paus. 1.9.7.

<sup>135</sup> McNicoll and Milner 1997:103.

<sup>136</sup> Meriç, R 2009: map 2 (based upon Roman period material); Roosevelt 2009: 36–37 (based upon material up to the end of the Classical period).

<sup>137</sup> Roosevelt 2009:36–37.

<sup>138</sup> Meriç, R 2009: map 2.

<sup>139</sup> Akurgal, E. 2007:142–170; Hill 2016:158; Rubinstein 2004:1071.

<sup>140</sup> Altinölk 2013:2. Numismatic evidence gives a mid-third century foundation.

<sup>141</sup> Hill 2016: 194 Figure 54; Meriç, R. 2009: map 2 has plotted their extent based upon finds of *horoi* demarcating the edges of temple lands.

<sup>142</sup> Strab. 14.1.40, 13.4.8. Callinus of Ephesus is recorded as the source. *IPriene* 3.12–14 is the source for the border with Priene.

<sup>143</sup> Rubinstein 2004:1063; 1082; Shipley 1987:267; Strab.14.1.20; *IPriene* 37.57–58.

<sup>144</sup> Shipley 1987:155–56.

<sup>145</sup> Shipley 1987 summarises the complex political situation, Weigand and Schrader's map of 1904 solves the problem by drawing the area as being Samian and then later Ephesian without specifying the date (reproduced in Rumscheid and Koenigs 1998).

on maritime access, the small potential gain in cultivable land would have been less relevant. In the Hellenistic period and later in the Byzantine period the Cayster Valley was heavily fortified and again this is a reflection of the levels of external investment that Ephesus was able to attract.

**Priene:** South Ionia (south of Mycale and around the Latmic Gulf) offers a more dynamic territorial situation than in North or Mid-Ionia due to inter-polis conflict, and the extensive silting in the Latmic Gulf that caused large-scale territorial change. The implications for Herakleia, Myus and Priene were serious as they lost direct access to the sea. The site that (New) Priene occupies would have had a lower agrarian potential in the Archaic and Early Classical periods until the expansion of cultivable land through progradation; the mountain ridge of Mycale behind Priene is steep and provides few flat and open areas, the southern slopes of Mycale are exposed to winds and are less watered than the northern slopes and there is a marked decrease in vegetation cover and diversity of flora and fauna from the southern side of Mycale.<sup>146</sup> Priene's location would therefore have been, until the silting of the Meander, economically anomalous to the scale and quality of its urbanisation; whilst this is conjecture on my part I strongly believe that the increase in cultivable area gained by progradation would have been beneficial for the polis and that this factor should be seen in connection to the laying out of a wealthy and well-structured town at the end of the Late Classical period. It is clear that the eight km buffer would have become a zone of considerable economic value through progradation and would have radically changed the economic fortunes of Priene. For Archaic period Priene territorial control of Mycale was more critical than for Samos and Miletus, and illustrates why the level of conflict over the Mycale peninsula was so high when one considers what was at stake.<sup>147</sup>

The discussion on where Archaic Priene was situated has revolved around the loss of access to the sea as being catastrophic, and not about the positive side of gaining a high quality agrarian resource. The relocation of Priene occurs at the beginning of the period when urban foundations and relocations no longer occurred organically, but are driven through external political will and patronage. Re-foundation on the scale that we see at Priene at around 350 BC would have required a powerful political patron to make it happen; Athens, Mausolus and Alexander have been mentioned as possible actors in the relocation of Priene.<sup>148</sup> The case for a new foundation involving a move from another site is based on the absence of any Archaic and Early Classical period material from the excavations carried out by Wiegand and Schrader (published in 1904), and that the present site shows no traces of Archaic or early- mid Classical period architecture or traits in its design.<sup>149</sup> Later excavations on a much smaller scale have also failed to recover material earlier than the Late Classical period ca. 350 BC.<sup>150</sup> Demand suggests that there is little case for relocation: her view is that traces should have been left in the historical texts and sources dealing with the city.<sup>151</sup> Another point is that if Priene did relocate to escape silting then it was caught out again by the same phenomenon, and this surely would have been picked up on by later writers. Strabo noted that by his time Priene lay 40 stadia inland due to silting, but did not mention that it had already moved once. Pausanias talks about the abandonment of Myus due to silting and mosquitoes, and mentions Atarneus in Aeolis as suffering the same fate, though he does not mention Priene, despite discussing the city at some length. Demand suggests that Priene was either unconcerned by the silting (or resigned to it), or that there was no flight from an Archaic site and that it is just coincidental that pre-Hellenistic evidence has so far not been found.

<sup>146</sup> Metcalfe 2005:130.

<sup>147</sup> Metcalfe 2005:132.

<sup>148</sup> Cohen 1995:187; Demand 1990:140; Hornblower 1982:323.

<sup>149</sup> Demand 1990:140; Lohmann 2012:34 suggests Archaic Priene lies buried in the alluvial deposits below the present site; Rumsheid and Koenigs 1998.

<sup>150</sup> Heinze 2014: 313–18.

<sup>151</sup> Demand 1990:14–41. Demand argues that both Strabo and Pausanias describe Priene in some detail, yet make no reference to an older settlement or a move.

Another important aspect of Priene is that the Panionion lay within her territory as did Karion/Melie which Priene received after the Meliac war.<sup>152</sup> Melie was an ethnic Carian settlement that was destroyed and its territory divided between Miletus, Priene, and Samos, and the Panionion sanctuary erected in its place.<sup>153</sup> A further element of territorial ambiguity is the relationship of Priene to Naulochon that lay within the chora; how far the two sites were linked, and what their relation was during re-foundation at the end of the fourth century is unclear.<sup>154</sup> Naulochon was politically dependant on Priene though both communities minted independently of each other in the fourth century.<sup>155</sup> To summarise we can say that Priene's territorial situation was politically complex and led to regular disputes with Samos. The polis had a hierarchy of affiliated sites and comprised a number of settlement components, which in Priene's situation did not translate into instability (as at Colophon and to a lesser extent as between Chyton and Clazomenae). The eight km buffer includes much of Priene's territory, such that it corresponds to Hansen's norm of a *Großpolis*.

**Myus** was a member of the Ionian *dodecapolis* and Herodotus states that it was urban.<sup>156</sup> Myus provided 3 ships to the Battle of Lade and was minting silver and bronze issues in the fourth century on the Attic standard.<sup>157</sup> Myus was not a member of the Delian League, and was under Persian control as witnessed by Themistocles being granted tax collecting rights whilst in exile at Magnesia on the Meander by the King.<sup>158</sup> Little is known about the territory and from the Hellenistic period Myus was annexed by Miletus and the site abandoned, possibly due to the development of a (malarial) swamp.<sup>159</sup> A temple to Apollo<sup>160</sup> whose foundations have been located was probably dismantled and the stone transported to Miletus for reuse.<sup>161</sup> The eight km buffer encloses an area of varied land-use and notwithstanding the abandonment of the site by the population, Myus' territory would have been able to sustain the urban community, had conditions in the Latmic Gulf not deteriorated to the extent that the population chose to abandon the site.

**Miletus** was almost an island and access to the city from the land was difficult unless one came from the south west. The city had four harbours and almost all transport and communication would probably have been seaborne. Archaic period Miletus was estimated to have held 1,800,<sup>162</sup> or 4,000 houses.<sup>163</sup> Miletus provided 80 ships to the Battle of Lade and 2000 hoplites.<sup>164</sup> The city was sacked and raised to the ground by the Persians in 494 BC at the end of the Ionian Revolt, which led to it being rebuilt, it has since become a tradition to state that a logical grid system is a *Hippodamean plan* when discussing urban planning, despite grid plans having been in use before this both at Miletus and elsewhere.<sup>165</sup>

Miletus expanded both its territory and population in the fourth century BC, when it merged in synoicism with Myus. Teichoussa was also annexed perhaps by the fifth century,<sup>166</sup> and Pidassa was annexed the Hellenistic period; with both settlements Miletus received a large number of new inhabitants, perhaps as many as 5000.<sup>167</sup> Pimouget has suggested that the territorial consolidation that we see in Ionia from the fourth century (Teichoussa and Pidassa to Miletus, and also Kyrbissos

<sup>152</sup> Mac Sweeney 2013:178–187; Metcalfe 2005:129; *LPriene* 37; Vitruv. 4,1,4 (where the account of the fate of Melie is preserved).

<sup>153</sup> Lohmann 2007; Mac Sweeney 2013:177–78.

<sup>154</sup> Hornblower 1982:323; Rubinstein 2004:1089.

<sup>155</sup> Rubinstein 2004:1089.

<sup>156</sup> Hdt. 1.142.3.

<sup>157</sup> Head *HN* 587; *SNG von Aulock* 2114–15.

<sup>158</sup> Thuc.1.138.5; Rubinstein 2004:1088.

<sup>159</sup> Bean 1966:246; Weber, H 1964.

<sup>160</sup> SEG 451619.18.

<sup>161</sup> Bean 1966:246.

<sup>162</sup> Hoepfner and Schwander 1986:12.

<sup>163</sup> Gates 1995:238, though Rubinstein 2004:1085 suggests this is exaggerated.

<sup>164</sup> Hdt.6.8.

<sup>165</sup> Weber, B 2007 (for an overview of the plan of Miletus over time and previous versions by Humann 1891; Wiegand 1901: 1906: 1908: 1911; Von Gerkan 1924: 1935; Weber, B 2000).

<sup>166</sup> *LDydmya* 6.1 (SEG 441735).

<sup>167</sup> Greaves 2002:137 (referring to Radt 1973) says that Pidassa provided 2000 settlers alone.



to Teos) where coastal polis include inland and perhaps largely Anatolian settlements was undertaken for reasons of geo-political and strategic consolidation, but that these inland sites were probably never fully integrated within the Ionian poleis.<sup>168</sup>

The Milesian hinterland was spread across a peninsula and would have been as large as 300 km<sup>2</sup>; however, Lohmann suggests that the soils on the immediate peninsula were poor and not suitable for cultivation, such that the alluvial soils of the delta were important for agrarian production in the face of demographic expansion.<sup>169</sup> Together with its considerable maritime interests Miletus would have been well supplied from both its wider hinterland and maritime trade. Lohmann concludes that the potential productivity of the territory was large enough for the polis and that land-hunger offers no explanation for strong Milesian colonialisation in the Early Archaic period.<sup>170</sup> With the islands of Patmos, Leros, Lepsos and Traghia Milesian territory was also spread across a seascape; in addition there is a reference to Thebai on the southern side of Mycale being a Milesian deme.<sup>171</sup> There are some references in the sources that Miletus controlled large parts of the Latmic Gulf and the lower reaches of the Meander River and that even Magnesia may have been under Milesian control at some point.<sup>172</sup> As with Ephesus, Miletus has a large and complex hinterland, the settlement pattern and urban development reflects this. The location of the oracular sanctuary to Apollo Didyma is also a central element to Milesian identity and territory.

**Samos** had a large chora that included territory on Mycale, and around Anaia that made the polis economically and demographically important.<sup>173</sup> Shipley suggests that Samos had a population of around 50,000 in the fifth century BC, based upon participation at the battle of Lade and comparative data with other poleis.<sup>174</sup> The Heraion had the largest floor plan of any Greek temple when it was constructed.<sup>175</sup> Samos became powerful under the expansive tyrant Polycrates (538 – 522 BC), however Athenian domination in the fifth century limited her autonomy, after which wider Samian political activity in the Aegean never recovered. Samian territory was spread over several islands (Ikaria and Fourni) as well as between Samos itself and the mainland territories. Settlement on Samos favoured the east of the Island and the coastal plain of Kambos; this can be explained by topography as the west of Samos is mountainous and with fewer harbours. However, on the north-western coast of Samos areas that were suitable for settlement show very little sign of habitation before the Byzantine period. The politically polarised and centralised nature of Samian politics might offer an explanation for why the eastern half of Samos and the areas that faced Mycale were favoured.<sup>176</sup> In this respect Samos differs from the more fragmented Chios.<sup>177</sup> Shipley suggests that the inhabitants of the Samian peraia on Mycale and in the Batinetis were also not fully integrated within the polis, and that an ethnic dimension may be the cause.<sup>178</sup> I have drawn the tip of the Mycale peninsula as being Samian in the Archaic period and Milesian in the Hellenistic period; sources indicate that it was Milesian before 650, but was ceded to Samos after the Meliac War, though Thebai remained a Milesian deme, and after the King's peace it once again reverted to Milesian control.<sup>179</sup>

**Magnesia** was not an Ionian polis, but it bordered Ephesus, Priene and Myus (Miletus) and would have been integrated economically and culturally with the Ionian poleis. Magnesia was considered

<sup>168</sup> Pimouguet 1995:89–93; Koparal 2013.

<sup>169</sup> Lohmann 2007:310.

<sup>170</sup> Lohmann 2007:389.

<sup>171</sup> Rubinstein 2004:1082.

<sup>172</sup> Greaves 2000 and 2007c:15; Hdt.1.18.

<sup>173</sup> Rubinstein 2004:1094.

<sup>174</sup> Shipley 1987:15.

<sup>175</sup> Shipley 1987:28.

<sup>176</sup> Shipley 1987:234–237 figures 10–15.

<sup>177</sup> It has been argued that early political centralisation on Samos was positive for cultural and economic development. Shipley 1987:242.

<sup>178</sup> The inhabitants of Mycale may have been Carian. Shipley 1987:35.

<sup>179</sup> Rubinstein 2004:1102 (Thebai); *LPriene* 363.22–23; Hiller Von Gaertringen 1906:185.

apart from other regions (Ionia Aeolis and Caria), and treated as such by contemporary sources.<sup>180</sup> Magnesia has been included for geographical reasons within the Ionia section of the CPC inventory. Magnesia remained under the control of Persia during the period of the Delian League, and Themistocles who spent his exile at Magnesia was granted tax collecting rights at Magnesia and Myus by the Persian king.<sup>181</sup> Tisserphanes used Magnesia as a base for campaigns around 400.<sup>182</sup> Magnesia had a large territory, and a border with Ephesus attested through a known dispute.<sup>183</sup> Magnesia also had a border with Heraklia ad Latmus, as referenced by an arbitration by a group of states after a war around 196 between Magnesia, Priene, Miletus and Heraklia.<sup>184</sup> Magnesians territory was high in agrarian potential and must have represented an important resource, also its strategic position at the mouth of the Meander without direct access to the sea is reflected by its relationship eastwards with Persia.

The above presentation of the territorial development of the Ionian poleis and their sources represents a broad summary of the material that was used to create the maps. In some cases, the material is scant, in others it is more meaningful. The sum total however allows to draw conclusions on which areas belonged to which polis and therefore draw borders and boundaries. We can also infer from the sources the extent to which territorial change occurred between the initial foundation period from the Archaic period to the Hellenistic period. The visualisation of the material in maps creates a point of departure for discussion and further spatial study.

## Discussion and concluding remarks

There are three key observations gained by the study that need to be highlighted and discussed:

1. The scale and size of the Ionian states were significantly greater than the Aeolian and Carian poleis. There are no exceptions to this such that this observation is important. Not only were Ionian states larger and territorially more complex than those in the neighbouring regions, but the density and dispersal of poleis in Ionia is clearly different from neighbouring Aeolis and Caria (Figure 12). The *Normalpolis* model with an average five km buffer can be applied to Aeolis and Caria, illustrating that those two regions conform in size to the observed norm for Greek poleis (80%). Ionia, however conforms to the *Großpolis* model where larger states are formed with territories of eight km radius or greater, and which hold a number of central places. This observation should I believe form part of any future discussion on the nature of political Ionia and her identity.
2. In relation to topographical preferences in site location it is clear that access to the sea was of primary importance to the Ionian poleis, as 86% of all poleis were coastal sites. The corresponding figures for neighbouring Aeolis are 48% and for Caria 47%.<sup>185</sup> Maritime poleis would have enjoyed greater connectivity and more diverse and dynamic economies, which should logically equate into larger political states.
3. After the formation of the Ionian League in the mid-seventh century the Ionian political landscape and its borders were fixed. No large-scale changes were made to the territories or borders until the Hellenistic period when autocratic rule was able to adjust, amend and redesign the political landscape. The few exceptions to this come from the mutual synoicism between Myus and Miletus brought about by progradation of the coastline in the Latmic Gulf, and the need to reassign Samian territory on the

<sup>180</sup> Hdt.3.90.1. Tradition states that it was founded by settlers from Thessaly in the 7th century; SEG 14 459.7–9.

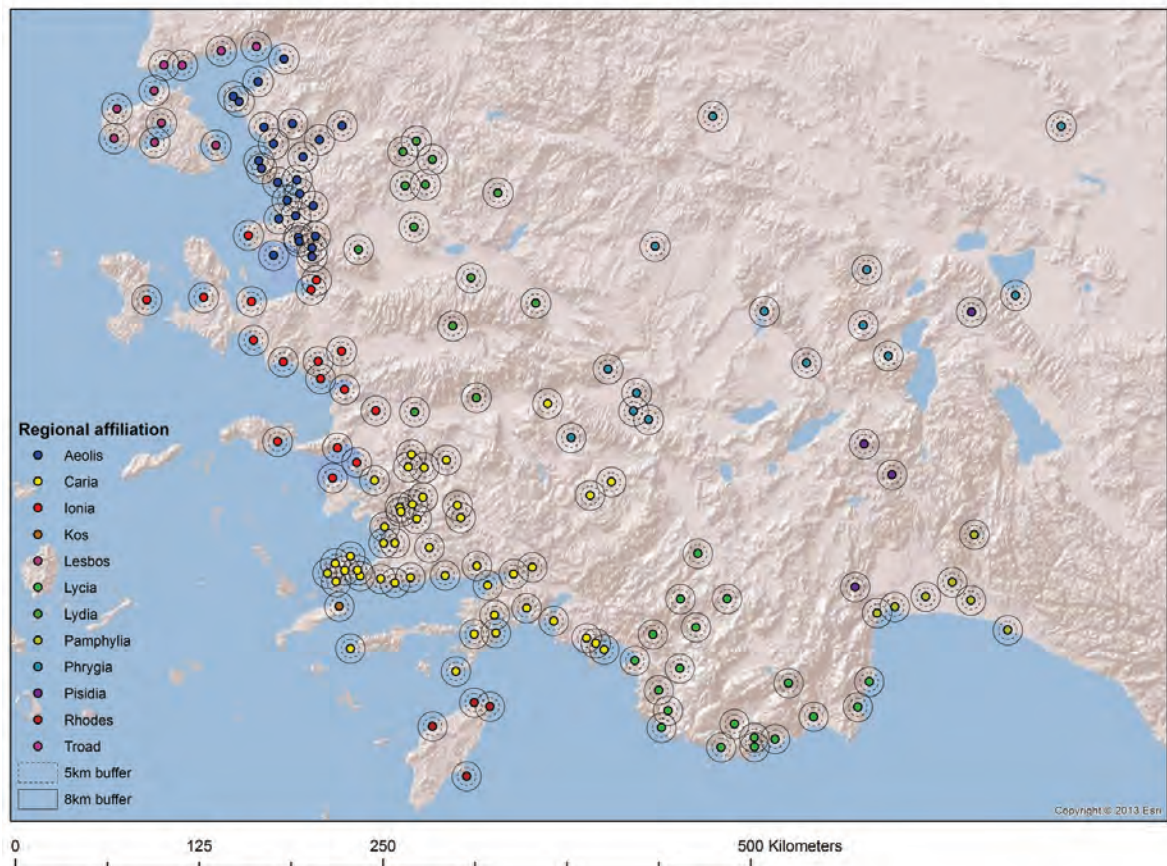
<sup>181</sup> Thuc.1.138.5.

<sup>182</sup> Thuc.8.50.3.

<sup>183</sup> Strab. 14.1.40, 13.4.8.

<sup>184</sup> Syll. 588; Dimitriev 2005:300.

<sup>185</sup> Hill 2016: 126. Hellenistic Metropolis is included in the calculation as was Notion, which being independent in the Hellenistic period, thus left Colophon without connection to sea. For the Archaic and Classical poleis, the figure therefore was 100%.



**Figure 12.** Map of Western Asia Minor showing the distribution of all urban poleis up to the Hellenistic era by regional affiliation with a 5 and 8km buffer.

mainland after the King's Peace in 386 when these areas were again taken over by Persia.

We can conclude from this that territorial conservatism reinforced by the Ionian League must have been a considerable factor in the creation of the Ionian landscape, which limited membership to 12: not only could no new polis be created within the existing political structure, but no changes to the number of participants and their voting rights is recorded in the existing sources. Only when the political influence of the league was weakened in the face of the Macedonian influence that had no diplomatic qualms in imposing its will, was it possible to bring radical change to the geopolitical landscape in Ionia. In the Archaic and Classical periods when Lydia and Persia had considerable influence in the region they were perhaps reluctant to alter the political balance and chose to allow the Greek poleis of Asia to structure themselves as they wished.

It seems logical therefore to suggest that a restriction of membership to the Ionian league of 12 may have influenced settlement patterns, in that larger states were then created, and this could be seen as a factor as to why Ionia is a region of *Großpoleis*. Interestingly the number 12 is significant as a 'sacred' number, so it may be possible that the choice of 12 was seemingly not entirely coincidental, but rather a way of conforming to a number that had gained religious or mythological value.<sup>186</sup> However, six would have also satisfied the need to conform to a sacred number (as employed by the Dorian *hexapolis*), as indeed would nine (Codrus, son of Nelius, son of Ion had nine sons). Six would also reflect the number of Ionian phylae.<sup>187</sup> Religious or sacred

<sup>186</sup> Smarczyk 2000:61. For example there are 12 Olympian gods, and 12 tribes of Israel, 12 Herculean labours, and mathematically there are 12 months in most calendars, twenty-four hours divided into two divisions of 12, etc.

<sup>187</sup> Piérart 1985:182; Rubinstein 2004:1068.



structures are often conservative and controlled from within. In the case of the Ionian *dodecapolis* we can see that there was an unwillingness to change the core number of participants and allot new members (e.g. Smyrna, which remained an affiliate of Colophon) and revise voting rights and sovereign participation. An increase in the total members would also have resulted in a dilution of the rights and influence that existing members enjoyed.

A will to create a political *dodecapolis* does of course not dictate which poleis were founded and where, but represents instead a political structure that leads to larger states made up by several settlement components, that in many cases gives us poleis with several urban and proto-urban central places within the same territory. I suggest that there was an inherent interest in early Ionia to construct larger states and link them within a common identity based structure. This identity driven element to Ionia quickly became a defining element that was formalised and legitimised through the creation of foundation myths and biographies of state that were in turn used to promote and strengthen that identity. When the Ionian states were formed in the 8th century (or maybe even earlier) there was more freedom for the poleis to define political space and territory in the landscape than there would have been later, when Lydia and Persia exercised influence. We can argue that the later development of urban poleis in Caria in the 6th and 5th centuries, would not have given the same opportunities for the creation of territorially and politically large states to develop, as super-regional political structures such as Lydia and Persian rule now dominated. The timing of poleis formation therefore may have been crucial in allowing Ionia to develop politically as it did. For the case of Aeolis where polis formation occurred at roughly the same time as Ionia, but which did not lead to a similar landscape of larger states, the only observation that can be offered is that the Aeolian poleis were seemingly less focused on the maritime zone than Ionia, and perhaps less concerned about wider territoriality. Ultimately though we do not have a satisfactory explanation as to why Ionian political settlement in the Archaic period favoured larger and more centralised poleis than other Greek regions. These points are important, and I hope will be further developed by discussion on how regional settlement evolved during the Early Iron Ages and into Antiquity, and that these maps will create debate.

## References

### Abbreviations

- |            |  |           |   |
|------------|--|-----------|---|
| Arist. Pol | Aristotle. <i>The Politics of Aristotle</i> . Translated by Sir Ernest Barker, 1995, Oxford.   | Plin. Nat | Pliny the Elder. <i>The Natural History</i> . Translated by John Healy, 1991, London.   |
| Hdt.       | Herodotus. <i>The Histories</i> . Translation by G. Rawlinson, 1999, London.   | Plut. Dem | Plutarch <i>Lives</i> , IX. Translated by Bernadotte Perrin. Loeb Classical Library. Boston, 1920.                                      |
| Hom. Il    | Homer. <i>The Iliad</i> , Translated by Robert Fagles 1998, London.  | Strab.    | Strabo. <i>The Geography of Strabo</i> . Translated by D. Roller. 2014, Cambridge.  |
| I.Claros   | Claros I. <i>Décrets hellnistiques fasc 1</i> , J. Robert and L. Robert, 1989, Paris.  | SEG       | <i>Supplementum Epigraphicum Graecum</i> (referred to by volume number and entry number)  |
| I.Priene   | <i>Die Inschriften von Priene</i> , Hiller von Gaertingen, 1906, Berlin.   | Syll.     | <i>Sylloge Inscriptionum Graecarum</i> 4 vols, 3rd edition, W. Dittenberger, 1915–24, Leipzig.  |
| ML         | Meiggs, R and Lewis, D (eds) <i>A selection of Greek Historical Inscriptions to the End of the Fifth Century</i> , rev.edn. (Oxford 1988).       | Thuc.     | Thucydides. <i>The History of the Peloponnesian War</i> . Translated by Richard Crawley and revised by Donald Lateiner. 2006, New York. |
| Paus       | Pausanias. <i>Description of Greece</i> with an English Translation by W.H.S. Jones, and H.A. Ormerod. 1918, London.                             | Vitr.     | Vitruvius. <i>On Architecture</i> . Translated by Richard Schofield, Robert Tavernor. 2009, London.                                     |
| IG         | <i>Inscriptiones Graecae</i> 1903 – PEP Princeton Epigraphical Project, ed D.F. McCabe et al. (Princeton Institute for Advanced Studies 1984–89) | Xen. An   | Xenophon. <i>Anabasis</i> . Translated by Rex Warner, 1949, London.   |
|            |  | Xen. Hell | Xenophon. <i>A History of my times</i> . Translated by Rex Warner, 1979, London.  |

**Bibliography**

- Ager, S. 1996. *Interstate arbitrations in the Greek world, 337–90 BC*. Berkeley.
- Akalın, A. 2008. 2006 yılı Erythrae kazısı (ilk sezon). *Kazi Sonuçları Toplantısı*: 299–312.
- Akurgal, E. 1975. Erythrae kazısı 1974 çalışmaları. *Belleten* 155: 367–368.
- Akurgal, E. 1983. *Alt Smyrna I, Wohnschichten und Athenatempel*. Ankara.
- Akurgal, E. 2007. *Ancient civilizations and ruins of Turkey* (10th ed.). Istanbul.
- Aksu, A. and Piper, D. 1983. Late Quaternary tectonic and sedimentary history of outer Izmir and Candarli bays, western Turkey. *Marine Geology* 76: 89–104.
- Aksu, A. and Piper, D. and Konuk, T. 1987. Quaternary growth patterns of Büyük Menderes and Küçük Menderes deltas, western Turkey. *Sedimentary Geology* 52: 227–250.
- Allen, P. 1997. Finding meaning in modifications of the environment: The fields and orchards of the Mani. In: P. Kardulias and M. Shutter (eds.): *Aegean strategies: Studies of Culture and Environment on the European Fringe*: 259–269. Lanham.
- Altinoluk, S. 2013. *Hypaipa a Lydian city during the Roman Imperial period*. Istanbul.
- Aslaksen, O. 2007. Paths and Places: The landscape Identity of Colophon 1300–302BC. (MA), University of Oslo.
- Babelon, E. 1930 *Catalogue de la Collection de Luynes, iii: Asie Mineure et Phénice*. Paris.
- Bean, G. 1966: *Aegean Turkey*. London.
- Becks, R. 2015. Settlement Patterns and Socio-political Landscape of Western Anatolia in the Middle and Late Bronze Age: A Geoarchaeological View. In: N. Stampolidis, C. Maner and K. Kopanias (eds) *NOSTOI: Indigenous Culture, Migration and Integration in the Aegean Islands and Western Anatolia during the Late Bronze Age and Early Iron Ages*: 115–131. Istanbul.
- Beven, A. and Conolly, J. 2004. GIS, archaeological survey and landscape archaeology on the island of Kythera, Greece. *Journal of Field Archaeology* 29: 123–138.
- Billows, R. 1990. *Antigonos the One-Eyed and the creation of the Hellenistic state*. Berkeley.
- Bintliff, J. L. 1992. Erosion in the Mediterranean lands: A reconsideration of pattern, process and methodology. In J. Boardman and M. Bell (eds) *Past and Present Soil Erosion*: 125–131. Oxford.
- Bintliff, J. 1999. The origins and nature of the Greek city-state and its significance for world settlement history. *Collection de l'école française de Rome* 252: 43–56.
- Bintliff, J. 2006. City-country relationships in the 'normal polis'. In: R. Rosen and I. Sluiter (eds) *City, Countryside and the spatial organization of value in Classical Antiquity*: 13–32. Leiden.
- Bintliff, J., 2012: *The Complete Archaeology of Greece: From Hunter-Gatherers to the 20th Century A.D.* Oxford-New York.
- Bintliff, J. and Snodgrass, A. 1985. The Cambridge/Bradford Boeotian Expedition: The First Four Years. *Journal of Field Archaeology* 12(2): 123–161.
- Boardman, J. 1967. *Excavations in Chios, 1952–1955: Greek Emporio*. London.
- Brinkmann, R., 1971. The geology of western Anatolia. In: A. Campbell (ed.) *Geology and history of Turkey*: 171–190. Castelfranco Veneto.
- Brückner, H et al. 2014. On the lion harbour and other harbours in Miletus: recent historical, archaeological, sedimentological, and geophysical research. In: R. Frederiksen and S. Handberg (eds) *Proceedings of the Danish Institute at Athens, vol. VII*: 49–104.
- Butzer, K. 1996. Ecology in the long view: settlement histories, agrosystematic strategies, and ecological performance. *Journal of Field Archaeology* 23(2): 141–150.
- Carter, V. G. and Dale, T. 1955. *Topsoil and civilization*. Norman.
- Cobet, J. von Graeve, V. Niemeier, W. D. and Zimmermann, K. (eds) 2007. *Frühes Ionien. Eine Bestandsaufnahme*. Mainz am Rhein: .
- Cohen, G. 1995. *The Hellenistic settlements in Europe, the islands, and Asia Minor*. Berkeley.
- Cook, J. M. 1952. Archaeology in Greece *JHS* 73. 108–130.
- Cook, J. M. 1965. *The Greeks in Ionia and the east*. London.
- Cook, J. M. and Nichols, R. V. 1998. *Old Smyrna Excavations: The Temples of Athena*. With an appendix by D. M. Pyle (Annual of the British School at Athens, Supplementary Volume 30). London.
- Crielaard, J. P. 2009. The Ionians in the Archaic period: shifting identities in a changing world. In: A. Derks and N. Roymans (eds) *Ethnic Constructs in Antiquity: The Role of Power and Tradition*: 37–84. Amsterdam.
- De la Genière, J., and Jolivet, V. (eds) 2003: *Cahiers de Claros II: L'aire des sacrifices*. Paris.
- De Laet, V. 2007. Evolution and reconstruction of the geo-archaeological landscape in the territory of Sagalassos (SW Turkey): Integration of geomorphic, GIS and remote sensing methods. Ph.D dissertation, Katholieke Universiteit Leuven, Leuven.
- Delile, H. et al. 2015. Demise of a harbor: a geochemical chronicle from Ephesus. *Journal of Archaeological Science* 53: 202–213.
- De Polignac, F. 1995. *Cults, territory, and the origins of the Greek city-state*. Chicago.
- Demand, N. H. 1990. *Urban relocation in Archaic and Classical Greece: Flight and consolidation*. Norman.

- Dmitriev, S. 2005. *City government in Hellenistic and Roman Asia Minor*. New York.
- Dreyer, B. 2008. Le dieu d'état Ares et le pantheon de Metropolis (Ionie). *Revue des études anciennes* 110: 403–416.
- Erkanal, A. 1997. 1995 Panaztepe Kazısı Sonuçları. *Kazi Sonuçları Toplantısı* 18(1): 281–290.
- Erkanal, H., and Günel, S. 1995: 1993 Liman Tepe kazısı. *Kazi Sonuçları Toplantısı* 16(1): 263–280.
- Ersöy, Y., 2003: Pottery production and mechanism of workshops in Archaic Clazomenae. In: B. Schmaltz and M. Söldner (eds) *Griechische Keramik im kulturellen Kontext*: 254–257. Münster.
- Ersöy, Y. 2004. Klazomenai, 900 – 500 BC: History and Settlement Evidence. In: A. Moustaka, E. Skarlatidou, M.-C. Tzannes, and Y. Ersoy (eds) *Klazomenai, Teos and Abdera: Metropoleis and Colony. Proceedings of the International Symposium held at the Archaeological Museum of Abdera*: 43–76. Thessaloniki.
- Ersöy, Y. 2007. Notes on History and Archaeology of Early Clazomenae. In: J. Cobet, V. Von Graeve, W.-D. Niemeier, and K. Zimmermann (eds) *Frühes Ionien. Eine Bestandaufnahme*: 149–178. Mainz am Rhein: Von Zabern.
- Fachard, S. 2012. *La défense du territoire: Étude de la chôra érétrienne et de ses fortifications* (Vol. 21). Athens: École Suisse d'Archéologie en Grèce.
- Ferray, J. 1991. Le statut des cités libres dans l'Empire romain à la lumière des inscriptions de Claros. *Comptes-rendus des séances de l'Académie des Inscriptions et Belles-Lettres* 135(3): 557–577.
- Foxhall, L. 1990. The dependent tenant: Land leasing and labour in Italy and Greece. *Journal of Roman Studies* LXXX: 97–114.
- Foxhall, L. 2007. *Olive cultivation in Ancient Greece: Seeking the ancient economy*. Oxford.
- Gauthier, P. 1990. Quorum et participation civique dans les démocraties grecques. In: C. Nicolet (ed.) *Du pouvoir dans l'Antiquité: Mots et réalités*. (Cahiers du Centre Gustave-Glotz 1): 73–99.
- Gates, C., 1995. *Ancient Cities: The Archaeology of Urban Life in the Ancient Near East and Egypt, Greece and Rome*. Routledge. London.
- Gehrke, H.-J. 1985. *Stasis: Untersuchungen zu den inneren Kriegen in den griechischen Staaten des 5. und 4. Jahrhunderts v. Chr.* München.
- Goudie, A. 2003. Colluvium. In: A. Goudie (ed.) *Encyclopedia of Geomorphology* Vol. 1: 173. New York.
- Greaves, A., 2002. *Miletos: A history*. London.
- Greaves, A. 2007. The archaeology of Miletus. In: G. Oliver (ed.) *The Epigraphy of Death: Studies in History and Society of Greece and Rome*: 111–116. Liverpool.
- Greaves, A. 2010. *The land of Ionia: Society and economy in the Archaic period*. Oxford and New York.
- Gunduz, O. and Simsek, C. 2011. Influence of climate change on shallow groundwater resources: The link between precipitation in alluvial systems. In: A. Baba et al. (eds) *Climate Change and its effect on Water Resources*: 225–235. Dordrecht.
- Halstead, P. 2002. Traditional and ancient rural economy in Mediterranean Europe: Plus ça change? In: W. Scheidel and S. v. Reden (eds) *The Ancient Economy*: 53–70. New York.
- Hansen, M. H. and Nielsen, T. H. 2004. *An inventory of Archaic and Classical poleis: An investigation conducted by the Copenhagen Polis Centre for the Danish National Research Foundation*. Oxford.
- Head. 1892. *Catalogue of the Greek coins of Ionia*. British Museum.
- Heinze, L. 2014. *Attic Imports and their Influence on the production of local fine-ware in Late Classical and Early Hellenistic Priene*. Paper presented at the Η'ΕΠΙΣΤΗΜΟΝΙΚΗ ΣΥΝΑΝΤΗΣΗ ΓΙΑ ΤΗΝ ΕΛΛΗΝΙΣΤΙΚΗ ΚΕΡΑΜΙΚΗ, ΙΩ'ΑΝΝΙΝΑ, 5–9 Μαΐου 2009.
- Herda, A. 2006. Panionion-Melia, Mycalessos-Mycalé, Perseus und Medusa. Überlegungen zur Besiedlungsgeschichte der Mycale in der frühen Eisenzeit. In: *Istanbuler Mitteilungen* 56: 43–102.
- Hill, D. 2010. Travellers in Asia Minor from 1677 – 1904: A summary of antiquarian descriptions of Metropolis and its landscape. In: S. Aybek, A. Meriç and A. Öz (eds) *Yolların Keşiştiği Yer: Recep Meriç için yazılar – The land of the Crossroads. Essays in Honour of Recep Meriç* Vol. 2): 119–126. Istanbul.
- Hill, D. 2016. *Urbanisation and Settlement in western Asia Minor: Ionia and Metropolis in the Torbali Plain, a GIS approach*. Ph.D dissertation. University of Oslo.
- Hill, D. 2017. Conceptualising inter-regional relations in Ionia and central west Anatolia from the Archaic to the Hellenistic period. Baysal and Karakatsanis (eds.) *Bordered Places Bounded Times. Cross-disciplinary perspectives on Turkey* (The British Institute at Ankara. Anatolian Studies 65): 85–97. Cambridge.
- Hoepfner, W. Schwandner, E. L. Dakarès, S., and Boessneck, J. 1994. *Haus und Stadt im klassischen Griechenland*. München.
- Holland, L. 1944. Colophon. *Hesperia* 13: 91–171.
- Hornblower, S. 1982. *Mausolus*. Oxford.
- Hornblower, S. 1991. *The Greek World 479–323*. London.
- Iren and Ünlu. 2012. Burning in Geometric Teos. In: K. Konuk (ed.) *Stephanèphoros de l'économie antique à l'Asie Mineure. Hommages à Raymond Descat*: 309–334. Bordeaux.
- Isager, S. and Skydsgaard J. E. 1992. *Ancient Greek agriculture – an introduction*. London.



- Kallet-Marx, R. 1995. *Hegemony to empire: the development of the Roman Imperium in the East from 148 to 62 BC*. Berkeley.
- Kerschner, M. 2010. The Lydians and their Ionian and Aiolian neighbours. In: N. D. Cahill (ed.) *The Lydians and Their World. Lidyalılar ve Dünyaları. Ausstellungskatalog Yapı Kredi Vadet Nedim Tör Museum Istanbul February 19 – May 15, 2010*: 247–265. Istanbul.
- Kirsten, E. 1956. *Die griechische Polis als historisch-geographisches Problem des Mittelmeerraumes*. Bonn.
- Koparal, E. and Tuna, N. 2017. Results of the field surveys at Teos and environs (2007–2009): revealing the Archaic landscape. *Journal of Greek Archaeology* 2, 2017: 199–220.
- Koparal, E. and İplikçi, E. 2008. Archaic olive oil extraction plant in Klazomenai. In: A. Moustaka, E. Skarlatidou, M. C. Tzanes, and Y. Ersoy (eds) *Klazomenai, Teos and Abdera: Metropoleis and Colony, Proceedings of the International Symposium held at the Archaeological Museum of Abdera*. Thessaloniki: 221–234.
- Koparal, E. 2009. Border Forts of Klazomenai: Cinderesi Fortification. In R. Einicke et al. (eds) *Zurück zum Gegenstand: Festschrift für Andreas E. Furtwängler*: 501–508. Langenweißbach.
- Koparal, E. 2011. *Land-use and agricultural potential in Klazomenian khora*. In: B. Erciyas and E. Sökmen (eds): *Regional studies in archaeology symposium proceedings*: 25–146. Ankara.
- Koparal, E. 2013. Teos and Kyrbissos. *Olba* 21: 45.
- Koparal, E. 2014. Grek Polisi İmgesi ve Değişen Gerçekler: Klazomenai Örneği. In: Ö. Çevik and B. Erdoğu (eds) *Yerleşim Sistemleri ve Mekân Analizi*: 57–79. Istanbul.
- Kraft, J. Brückner, H. Kayan, I. and Engelmann, H. 2007. The geographies of ancient Ephesus and the Artemision in Anatolia. *Geoarchaeology* 22(1): 121–149.
- Lohmann, H. 2007. Die Chora Milets in archaischer Zeit. In: J. Cobet, V. von Graeve, W.-D. Niemeier and K. Zimmermann (eds) *Frühes Ionien. Eine Bestandsaufnahme*: 363–393. Mainz am Rhein.
- Lohmann, H. 2012. Ionians and Carians in the Mycale: the discovery of Carian Melia and the Archaic Panionion. In Cifani and Stoddart (eds) *Landscape, Ethnicity and Identity in the Archaic Mediterranean Area*: 32–51.
- Mac Sweeney, N. 2013. *Foundation myths and politics in ancient Ionia*. Cambridge.
- Mac Sweeney, N. 2015. Violence and the Ionian Migration: Representation and Reality. In: N. Stampolidis, C. Maner and K. Kopanias (eds) *NOSTOI: Indigenous Culture, Migration and Integration in the Aegean Islands and Western Anatolia during the Late Bronze Age and Early Iron Ages*: 239–263. Istanbul.
- Mariaud, O. 2011. The Geometric graves of Colophon after the excavations of H. Goldman, 1922. Reflexions on the burial customs of early Iron Age Ionia. In: A. M. Ainian (ed.) *The Dark Ages Revisited. From the Dark Ages to the Rise of the Polis. Proceedings of the International Symposium in Memory of William D.E. Coulson, Volos, June 2007*. Volos: 687–703.
- McNicoll, A. W. and Milner, N. P. 1997. *Hellenistic fortifications from the Aegean to the Euphrates*. Oxford.
- Meriç, R. 1982. *Metropolis in Ionien: Ergebnisse einer Survey-Unternehmung in den Jahren 1972–1975*. Königstein.
- Meriç, R. 2009. *Das Hinterland von Ephesos: archäologisch-topographische Forschungen im Kaystros-Tal*. Wien.
- Meriç, R. and Nollé, J. 1988. Eine Achaïsche Inschrift aus den Gebiet von Smyrna. *Chiron* 18: 225–232.
- Metcalfe, M. 2005. Reaffirming Regional Identity: Cohesive Institutions and Local Interaction in Ionia 386–129 BC. Ph.D. dissertation, University College London.
- Milne, J. G. 1941. Colophon and its Coinage. *Numismatic Notes and Monographs* 96.
- Mitchell, S. 1985. 'Archaeology in Asia Minor 1979–84', *Archaeological Review* 3: 70–105.
- Morel, J.-P. 2006. Phocaeen colonisation. In: G. Tsetschladze (ed.) *Greek Colonisation: An account of Greek colonies and other settlements overseas*. Vol. 1. Leiden: 358–428.
- Morgan, C. 2003. *Early Greek states beyond the polis*. London.
- Muss, et al. 2014. The Colophon Survey 2014. *Zeitschrift für klassische Archäologie* 73 (XII ).
- Nielsen, T. H. Gabrielsen, V. 2004. Rhodos in Hansen and Nielsen 2004. 1196–1210.
- Ober, J. 1995. Greek Horoi: Artefactual texts and the contingency of meaning. In: D. Small (ed.) *Methods in the Mediterranean: Historical and archaeological views on texts and archaeology*. Leiden: 91–123.
- Østby, E. (ed.) 2014a. *TEGEA II: Investigations in the Sanctuary of Athena Alea 1990–94 and 2004*. Athens.
- Østby, E. (ed.) 2014b. *TEGEA I: Investigations in the Temple of Athena Alea 1991–94*. Athens.
- Østby, E. 2014c. The Sanctuary of Alea at Tegea in the Pre-Classical period. In: E. Østby (ed.) *TEGEA I: Investigations in the temple of Athena Alea 1991–94*. Athens: 11–56.
- Özyiğit, Ö. 1994. The City Walls of Phokaia. *Revue des Études Anciennes* 96: 1–34.
- Özyiğit, Ö. 2003. Recent work at Phokaia in the light of Akurgal's excavations. *Anadolu/Anatolia* 25: 109–139.
- Özyiğit, Ö. (2004). 2002 Yılı Phokaia kazı çalışmaları. *Kazi Sonuçları Toplantısı* 25: 441–452.

- Özyiğit, Ö. 2006. Phokaia. In: W. Radt (ed.) *Stadtgrabungen und Stadtforschung im westlichen Kleinasien*. BYZAS 3: 303–314.
- Piérart, M. 1985. Modèles de répartition des citoyens dans les cités ioniennes, *Revue des études anciennes* 87: 169–190.
- Pimouguet, I. 1995. Défense et territoire. L'exemple milésien. *Dialogues d'histoire ancienne* 21(1): 89–109.
- Philipson, A. 1950–59. Die griechischen Landschaften: eine Landeskunde. Frankfurt am Main.
- Rubenstein, L. 2004. Ionia. In: M. H. Hansen, and T. H. Nielsen (eds) *An Inventory of Archaic and Classical poleis*: 1053–1107. Oxford.
- Roosevelt, C. 2009. *The archaeology of Lydia: from Gyges to Alexander*. New York.
- Rousset, D. 1994. Les frontières des cités grecques. Premières réflexions à partir du recueil des documents épigraphiques. *Cahiers du Centre Gustave Glotz* 5: 97–126.
- Rumscheid, F. and Koenigs, W. 1998. *Priene, A guide to the Pompeii of Asia Minor*. Istanbul.
- Ruschenbusch, E. 1985. Die Zahl der griechischen Staaten und Arealgrösse und Bürgerzahl der ‚Normalpolis‘. *Zeitschrift für Papyrologie und Epigraphik* 59: 253–263.
- Scheidel, W. 2003. The Greek Demographic Expansion: Models and Comparisons. *The Journal of Hellenic Studies* 123: 120–140.
- Scheidel, W. 2007. Demography. In: W. Scheidel, I. Morris and R. P. Saller (eds) *The Cambridge Economic History of the Greco-Roman World*: 38–86. Cambridge.
- Shipley, G. 1987. *A history of Samos 800–188 BC*. Oxford.
- Simon, C. G. 1986. *The archaic votive offerings and cults of Ionia*. Ph.D, University of California, Berkeley.
- Simon, C. G. (ed.) 1997. *The Archaeology of Cult in Geometric Greece: Ionian Temples, Altars and Dedications*. Columbia.
- Smarczyk, B. 2000. Die Ionier Kleinasien. Ein Beitrag kultisch-religiöser und mythischer Traditionen zur Entwicklung ihres Identitätsgefühls. In: Hans-Peter Müller und F. Siegert (eds) *Antike Randgesellschaften und Randgruppen im östlichen Mittelmeerraum*. Ringvorlesung an der Westfälischen Wilhelms-Universität Münster. (Münsteraner Judaistische Studien 5): 46–74. Münster.
- Snodgrass, A. 1991a. Survey Archaeology and the Rural Landscape of the Greek City. In: O. Murray and S. Price (eds) *The Greek City from Homer to Alexander*: 113–136. Oxford.
- Thonemann, P. 2011. *The Meander Valley: A Historical Geography from Antiquity to Byzantium*. Cambridge.
- Vaessen, R., 2014. Cultural Dynamics in Ionia at the End of the Second Millennium BCE: New Archaeological Perspectives and Prospects. Ph.D dissertation, The University of Sheffield.
- Vaessen, R. 2015. Ceramic developments in coastal Western Anatolia at the dawn of the Early Iron Age. In: J. Bennet, Y. Galanakis and T. Wilkinson (eds) *AΘYPMATA: Critical Essays on the Archaeology of the Eastern Mediterranean in Honour of E. Susan Sherratt*: 223–232. Oxford: Archaeopress.
- Weber, B., 2007. Der Stadtplan von Milet. In: J. Cobet, V. von Graeve, W.-D. Niemeier and A. Zimmermann (eds) *Frühes Ionien. Eine Bestandsaufnahme*: 327–362. Mainz am Rhein.
- Weber, G. 1904. Zur Topographie der Ionischen Küste. *AM* 19: 232–236.
- Weber, H. 1965. Myus Grabung 1964. *IstMitt* 15: 43–64.
- Weber, M. 1976. *The Agrarian sociology of ancient civilizations*. London.
- Wiegand, T. and Schrader, H., 1904: *Priene: Ergebnisse der Ausgrabungen und Untersuchungen in der Jahren 1895–1898*. Berlin.