THE TRANSITION FROM THE LATE BRONZE AGE TO THE EARLY IRON AGE IN THE UPPER EUPHRATES AND THE AMUQ: A STUDY OF SETTLEMENT PATTERNS

A Master's Thesis

by
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July 2010

To my parents, my sister and my husband

For demonstrating that knowledge is the upmost aim in life

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The Institute of Economics and Social Sciences
of
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I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Archaeology and History of Art.

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ABSTRACT

THE TRANSITION FROM THE LATE BRONZE AGE TO THE EARLY IRON AGE IN THE UPPER EUPHRATES AND THE AMUQ: A STUDY OF SETTLEMENT PATTERNS

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This thesis aims to assess the settlement data from the LBA-EIA transition from the Upper Euphrates and the Amuq. It uses settlement pattern analyses as ways to trace continuity and change, and incorporates architectural data to test their results. Three plains in particular are selected for this tasks; Altınova and Karababa Dam area of the Upper Euphrates and the Amuq at the confluence of North Syria and Southeast Anatolia. The results demonstrate, once again, that the nature of the LBA-EIA transition in these parts of Turkey is still vague, yet partially promising.

Keywords: Settlement patterns, LBA-EIA Transition, Upper Euphrates Region, Amuq Plain

ÖZET

YUKARI FIRAT BÖLGESİ VE AMİK OVASI'NDA GEÇ TUNÇ ÇAĞI'NDAN ERKEN DEMİR ÇAĞI'NA GEÇİŞ:
YERLEŞİM DOKULARI ÜZERİNE BİR ÇALIŞMA

Durusu Tanrıöver, Müge
Yüksek Lisans, Arkeoloji ve Sanat Tarihi Bölümü

Tez Yöneticisi: Dr. İlknur Özgen

Temmuz 2010

Bu çalışma, Yukarı Fırat ve Amik bölgelerinde Geç Tunç Çağı'ndan Erken Demir Çağı'na geçiş sırasında ortaya çıkmış yerleşim dokularını değerlendirmeyi amaçlamaktadır. Yerleşim dokusu analizleri süreklilik ve değişimi göstermek amacıyla kullanılmış, bu analizlerin sonuçları mimari bulgular yoluyla test edilmiştir. Bu amaçlar doğrultusunda üç ova özellikle çalışılmıştır. Bir yandan, Yukarı Fırat Bölgesi'nde Altınova ve Karababa Baraj Alanı'ndan gelen bilgiler analiz edilmiş; öbür yandan Kuzey Suriye ile Güneydoğu Anadolu'nun kesişiminde bulunan Amik Ovası'na yoğunlaşılmıştır. Sonuçlar, bir kez daha, Türkiye'nin bu bölgelerindeki Geç Tunç Çağı – Erken Demir Çağı geçişinin belirsiz doğasını ortaya koymaktadır, ancak ümit vericidir.

Anahtar Kelimeler: Yerleşim dokusu, Geç Tunç Devri – Erken Demir Çağı Geçişi, Yukarı Fırat Bölgesi, Amik Ovası

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Lastly, this work and my life in general, owe much to Mete and Ece, my two little sanctuaries of love and happiness.

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ABBREVIATIONS

LBA : Late Bronze Age

EIA: Early Iron Age

MBA: Middle Bronze Age

MIA: Middle Iron Age

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CHAPTER 1

INTRODUCTION

The transition from the Bronze Age to the Iron Age has been an important subject of scholarly research for the field of archaeology. Traditionally, this transition period is believed to be marked by centuries of cultural, linguistic and political discontinuity, and for this reason is known as the "Dark Ages". Recently, however, archaeological research began to produce more critical and inter-regional studies[1] to counter this impression. The former "catastrophe theories" relating the fall of the Late Bronze Age civilizations to just climatic changes[2], famine/drought[3], volcanoes[4] or the Sea Peoples[5] are being replaced with more systematic approaches. Hence, I believe this is an important time to reconsider the evidence from the Upper Euphrates Basin[6] and the Amuq plain in order to

[1] The bibliography on this subject is increasing. For selected contributions, see Deger-Jalkotzky (ed.), 1983; James et al. 1991; Ward and Joukowsky (eds.) 1992; Drews, 1993; Noort, 1994; Gitin et al. 1998; Fischer et al. (eds.) 2002.
[2] e.g. Williams, 2000
[3] e.g. Weiss, 1982
[4] e.g. Yurco, 1999
[5] e.g. Grant, 1969; Finley, 1981
[6] In this thesis, the term "Upper Euphrates Basin" is used to refer to the course of the Euphrates within the borders of Turkey. Although the METU publications of the 1970s tended to categorize the Malatya-Elazığ region as "Upper Euphrates" and the Urfa-Adıyaman region as the "Lower

construct a picture of the Late Bronze Age and Early Iron Age in Anatolia, with a particular emphasis on settlement patterns.

1.1 Temporal and Geographical Scope of the Thesis

The temporal scope of the thesis can broadly be defined to be 1200-800 BC, since these dates are valid as being the traditional dates previously foreseen for the "Dark Ages". However, as will be seen in the following chapters, the chronology of this period is very complicated and lacks clear-cut boundaries[7]. For that reason, this study had to rely on the evidence that is classified as "Late Bronze Age" and "Early Iron Age" by their researchers, which does not necessarily fit into the four century framework stated above.

The geographical setting is not less complicated. The confluence of Central, Eastern and Southeastern Anatolia presents an important laboratory for the end of the Bronze Age and the beginnings of the Iron Age. With this area, Norşun Tepe, Lidar Höyük and Tille Höyük have been canonized in the scholarship as being sites with uninterrupted sequences throughout the Dark Age (Müller, 2005: 107). To be able to incorporate those sites within a comparative framework, I began to examine this area of confluence in detail. This area is characterized by a series of high mountain ranges, among which the Taurus Mountains, the Amanus Mountains, and Anti-Taurus Mountains are most dominant. Major rivers,

Euphrates", this terminology contradicts with the international scholarship, which uses "Upper Euphrates" for the course of the Euphrates within the Anatolian proper, and "Lower Euphrates" for its course in Iraq.

[7] Issues of chronology will be discussed in the following chapter in more detail.

including Euphrates, Tigris, Murat, Karasu, Afrin and the Orontes are the other significant elements of the landscape, providing both valleys over high mountain ranges as well as alluvial plains and deltas. Even more significant are the patches of green, plains which acted as habitation niches throughout antiquity (Map 1).

1.2 Research Questions

The thesis is structured around two categories of research questions. The first category deals with the comparison between Late Bronze and Early Iron Age settlement patterns and its implications for continuity or change:

1. What can be inferred from a comparison of the Late Bronze and Early Iron age settlement systems?
2. The general view is that the Late Bronze Age had a more clustered urban pattern, while the Early Iron Age hints a return back to the loose farmsteads, before the re-emergence of dense and planned urbanism in the rest of the Iron Age. Can this view be validated with a study of the settlement patterns from the Upper Euphrates and the Amuq?
3. Why is the nature of transition different in almost every centre? Can reasons of continuity and discontinuity be found?

The second category of questions deals with how the data can be analyzed, to find answers to the relevant questions:

1. Which methods devised by settlement archaeology can be used for examining the settlement patterns of the LBA and EIA distributions in the Upper Euphrates and the Amuq plains?
2. What are the pitfalls and the potentials of the conventional methods for the specific temporal and spatial aims of this thesis?
3. How can the presented spatial data be interpreted?

Hence, the main research question of the thesis can be summed up as follows; "*What can the analysis of the LBA and EIA settlement patterns of the Upper Euphrates and the Amuq plains tell about continuity and change in the corresponding periods? How can this be deduced*?"

For these purposes of the thesis, Altınova and Karababa Dam area were chosen "by default" since they include 3 well-excavated sites Norşun, Lidar and Tille; and since they have published final survey reports (Whallon and Kantmann, 1969; 1970; Whallon, 1979; Özdoğan, 1977). This choice also set the criteria for the selection of comparanda material:

1. Having well-defined geographical borders that could enable the development of a self-sufficient system, as well as giving the opportunity to define clear boundaries for spatial analysis
2. Having published survey and excavation work.

In this sense, Cilicia was eliminated because of its close interaction with the Mediterranean Sea, which turned Cilicia into a completely different and much more interactive system than Keban and Karababa dam area. For similar reasons, the plains of Ceylanpınar, Suruç and Altınbaşak were set aside, although they include the site of Kargamış. These plains are geographical and cultural extensions of Mesopotamia. On the one hand, it is impossible to conduct analysis on all the extensions of these plains, while on the other hand it is also impossible to select the "sample geography" from this vast area and define borders around it. The Elbistan and Malatya plains seemed to be exact matches for comparison with Altınova in terms of geography and self-sufficiency, and furthermore the Malatya Plain contained the state of Melid, as well as its capital providing dynastic

continuity. However, the Elbistan and Malatya plains lacked detailed survey reports. Lastly, the Amuq gave the opportunity of examining a self-sufficient system that was culturally interactive, but geographically confinable, from detailed publications of research that is still continuing in the present.

The questions and the areas chosen to be examined in this thesis continue to be essentially important, since Altınova and Karababa dam area are now submerged under the waters of the Euphrates, rendering any more research impossible. Hence, analyzing the gathered data with different perspectives is vitally necessary.

1.3 Methodology

As mentioned before, the major medium of this study is settlement patterns. This includes the study of: (1) The location of the site within its general geographical context; and (2) Distances between sites (3) The relations of sites with each other (singular sites or clusters)[8].

As this list infers, the regional scale is used in this study. The means to work in this scale is found in "settlement archaeology", which needs to be elaborated

[8] Ideally, such a list should also contain the following features, (1) Continuity and discontinuity in the choice of settlement location within the mound/site (2) Shifts of different functions within the site. How has the administrative, the residential, the military, the industrial, and so forth moved across the site? (3) The spatial grammar of structural clusters. What does the coming together of different modules indicate? (4) Evaluation of single structures. What are the unique and common architectural elements incorporated in each building plan?
This list of questions would enable the writer to incorporate a three-tiered system and to begin from the region, then to concentrate on the site, and lastly to deconstruct the site to its sub-features. However, the data presented by the LBA-EIA transition do not enable such a study.

here, since it has become a general "umbrella term" under which different methodologies and approaches are used.

When settlement archaeology was defined in the late 1950s, it was formulated as a way to study social interrelations using archaeological data (Trigger, 1967: 151). Although this was the intention, the tools that were devised to cope with these problems were borrowed mainly from geography and statistics. This created a widening gap between the analysis and the interpretation of settlement data, which affected the field as a whole. The methods of settlement archaeology were criticized extensively for their inefficiency to successfully reflect upon the settlement patterns and hierarchy (Grossmann, 1981: 491). For Grossmann, a scholar who critically revised the development of settlement archaeology, this is a problem related with the tools used to analyze and reflect the patterns, and it should not be perceived as a problem of the whole corpus of spatial archaeology. The problems do not refer to interpretations, but to the tools of analysis, and the first step towards developing better analytical tools is recognizing the limitations of the analytical methods and the terrain that one works with (Grossmann, 1981: 491-92).

Since the 1950s, settlement archaeology has borrowed many tools and models from other disciplines[9]. However canonized these methods may be, there are serious problems in their adaptation to archaeological data.

[9] A survey of the preferred methods of settlement analysis and their fundamental principles is included in Appendix A. The aim of this survey is not to incorporate detailed and heavy statistical

The following chapters are an attempt to test some methods of settlement archaeology on the data provided by the Upper Euphrates and the Amuq regions in the LBA and the EIA. The second chapter introduces the general framework for the transition, by discussing its chronology; and the changing ethno-political context of Anatolia after this transition. The third chapter discusses the Upper Euphrates area, by referring to the specific plains of Altınova and the Karababa dam area, while the fourth chapter introduces the Amuq Plain. Both of these chapters are aimed to be descriptive, since they present the analyses conducted and explain their results. The interpretation and the discussion of the results are done in the following chapter, while a concluding chapter covers the need for future work.

Although the Appendix surveys six models of settlement pattern analysis, catchment analysis and regression analysis could not be conducted with the available data. Catchment analysis requires a good knowledge of the natural resources exploited in the periods in question[10]. For the Upper Euphrates, research has been done regarding the gold, silver, lead and zinc sources in the Keban area (Kalender and Hanelçi 2001), however this research has not been convincing in terms of its relevance with archaeological data, since the only validation presented are the silver artifacts from Chalcolithic Korucutepe (Kalender and Hanelçi, 2001: 92). Research has been conducted on the Taurus

discussions, but to question the relevance of these methods in archaeology, and seeing their limitations and potentials.

[10] Although the General Directorate of Mineral Research and Exploration (MTA) has traversed Turkey and produced maps locating mines, their specific focus on modern mineralogy makes it impossible to distinguish between modern mines and ancient ones.

Mountains by Aslıhan Yener and Hadi Özbal (Yener, 2005b; Yener, Özbal et al., 1989a, 1989b, 1991). However, these studies aim for the rise of the Bronze Age societies and hence do not address the period in question in this thesis.

Regression analysis, similarly, demands the knowledge of the range, exploitation and the production centers of a particular item. No such item could be differentiated that had prevailed throughout the LBA and the EIA periods.

Among the analyses that were used, Voronoi diagrams and Rank-size analyses were altered slightly in order to serve the purpose better. Although the Voronoi diagrams are supposed to be conducted on homogeneous and featureless surfaces, I chose to include at least the river systems. River systems were vital elements in all the areas incorporated into this thesis, and they must have acted as borders as well as connectors. Hence, I ran Voronoi diagrams twice, first in the classical style, and second in the altered way, in which the rivers act as the borders. In the case of Rank-size analyses, I shifted population data with occupation areas. Population projections are always problematic in archaeology, whereas occupation areas are more reliable with the existence of certain kinds of pottery that one can associate with particular periods. Surely, doubt also exists about the reliance of the occupation areas and if these can be judged from pottery scatters alone. In an ideal setting, it is best to determine occupation areas in the confluence of pottery scatters, extent of architectural strata and social organization as deduced from textual evidence. However, the LBA-EIA transition only presents pottery as a more reliable source in the absence of textual evidence

and substantial architecture. Furthermore, all of the sites discussed in this thesis are tell sites, which means to "deal with deeply buried occupational strata, rendering it nearly impossible to determine settlement size accurately" (Casana, 2009: 12). These circumstances force one to translate pottery scatters into occupation areas as the most representative data type.

All of these analyses, and more, could be conducted with the help of a GIS system. However, founding GIS databases for three plains requires means and abilities not available to me during the course of this study. Furthermore, by thinking about each data set and each analysis method individually, I had the chance to realize their pitfalls and potentials better for future research.

CHAPTER 2

CONTEXTS OF THE TRANSITION FROM THE LATE BRONZE AGE TO THE IRON AGE

In order to assess the settlement and landscape data for the transition from the LBA to the EIA, a general framework of the region has to be drawn. Such a framework must begin with the chronology for this period[11]; and include an evaluation of the socio-political context of Anatolia after the fall of the Hittite Empire, as well as the available historical documents.

[11] The chronology of the destruction of the Bronze Age sites is a subject of ongoing scholarly debate. As vividly discussed is the duration of the following "Dark Age" (see, for example, contributions by Singer, 1987; James et al., 1991; Drews, 1991; and Yakar, 2006). The aim of this chapter is not to provide a novel contribution to this ongoing debate, but rather to make a survey of the major contributions in the corpus, with the purpose of providing a chronological framework for the regions/sites discussed in the following chapters.

2.1 1200 BC: A Chronological Framework for the End of the Bronze Age in the Near East

Although absolute chronologies are almost always problematic in archaeology; the case is especially unsolved for the end of the Bronze Age in the Near East generally, and for Anatolia partly.

Till now, convincing or complete chronologies did not exist for all of the Near East for the transition from the 2nd millennium BC to the 1st millennium (Cryer, 1995: 658). The situation remains fundamentally the same, although recent discoveries are providing an accumulation of archaeological knowledge. The excavations ongoing at the sites of Tell Atchana[12] and Tell Ta'yinat[13] are yielding new materials in the form of inscriptions, architecture and material culture. Likewise, the re-evaluation of the data from the formerly excavated sites like Lidar Höyük[14], Tille Höyük[15], Norşun Tepe[16] and Korucutepe[17] has the potential to

[12] After initial excavations by Leonard Woolley between 1936-39 and 1946-49 (Woolley, 1936; 1938b; 1939; 1947b; 1947c; 1948b; 1950b; 1953a; 1955), Tell Atchana (ancient Alalakh) is now being excavated by Aslıhan Yener of Koç University. The new generation of site-specific surveys and excavations were launched in 2000 as part of the Amuq Valley Regional Projects (AVRP) (Yener, Harrison, Pamir 2002; Wilkinson 2002; Yener, 2005a, 2005b, 2008b). Information is also available on-line at http://alalakh.org/.

[13] Tell Ta'yinat was previously excavated by the Syro-Hittite Expedition team of the University of Chicago during the 1930s (Haines, 1971). A site-specific survey and following excavations were commenced in 1999 as part of the AVRP, under the directorship of Timothy Harrison of the University of Toronto (Versraete and Wilkinson, 2000; Harrison, 2001; 2005; 2009a-b; Batiuk, Harrison and Pavlish, 2005). Information can also be found on the official website at http://www.utoronto.ca/tap/present.htm.

[14] Rescue excavations in Lidar Höyük were conducted between 1979-1987 under the directorship of Harald Hauptmann of Universität Heidelberg (Hauptmann, 1987; Müller, 1999a-b; 2001). The final publication of the site has not been published.

[15] Rescue excavations at Tille Höyük were conducted between 1979-1989 under the directorship of David French of BIAA (French, 1981; 1983; 1984; 1985; 1986; 1987a-b; 1988; 1991a; French, Moore and Russell, 1982; Summers, 1990; 1991; 1993; Moore, 1993).

change the understanding of the transition. Still, however, complete or even relative chronologies are missing in most sites and regions.

The first thing to accept for the entire 2nd millennium Anatolia is that, it will never have a satisfactory absolute chronology due to the nature of the written documents and the irregularity of its topography. From the surviving 2nd millennium BC texts, the Old Assyrian merchant texts from the commercial centers provide dates for the first half of the 2nd millennium[18]. The cuneiform texts mainly from Hattuša are compatible from the 16th/15th through the 12th centuries; and lastly the Hieroglyphic Luwian inscriptions cover the period between the 13th to 8th centuries BC[19]. Among these three categories, it is only the Assyrian merchant texts that have an internal chronological system (Beckman, 2000: 19). The problems of Hittite chronology are significant. In fact, one should feel thankful to the Amarna letters, which allowed dating the Hittites to the 2nd millennium, instead of the 10th and 9th cent BC[20] (James et al. 1991: 118). Although the Hittites were in extensive contact with their neighbours, the following problems in Hittite chronology prevents these communications from

[16] Salvage excavations at Norşun Tepe were conducted under the directorship of Harald Hauptmann of Universität Heidelberg between 1968-75 (Hauptmann, 1969; 1970a-b; 1971; 1972; 1974a-b; 1976a-b; 1979a-b; 1982; Hauptmann, Boessneck, and Driesch, 1976; Korbel, 1985).
[17] Salvage excavations at Korucutepe were conducted under the directorship of M. van Loon between 1968-1972, and under the directorship of H. Ertem between 1973-1975 (van Loon et al., 1968; 1969; 1970; 1974; van Loon (ed.) 1975; 1978).
[18] Kültepe, Boğazköy and Alişar are the Anatolian sites that provide synchronisms with Mesopotamia (Mellink, 1965: 118).
[19] John D. Hawkins' three volume "Corpus of Hieroglyphic Luwian Inscriptions" (2000) offers an excellent survey of the 1st millennium BC monuments across Anatolia and North Syria inscribed in Luwian.
[20] Amarna letters are the correspondences of Pharaohs Amenhotep III, Akhenaten and Tutankhamun, and are written in cuneiform Akkadian (Cohen and Westbrook, 1999; Murnane, 1995; Moran, 1992; 2003).

providing absolute or even relative chronologies. First, the Hittite rulers chose among a limited number of names and tended to repeat these names frequently. Second, the Hittite scribes did not use any means to differentiate among the kings with the same names (Beckman, 2000: 20). This in turn necessitates a focus on context for dating, which can be misleading (Cryer, 1995: 658). Third, Hittite scribes did not note annual dates and the durations of the king's reigns are not recorded (Hauptmann, 2003: 149). Lastly, the so-called "king lists" of the Hittites are sacrificial documents, which reflect the dynastic line only with gaps (Beckmann, 2000: 20). Under these circumstances, it is not surprising that the scholars have agreed upon the end of the Hittite Empire by using external references, i.e. the Medinet Habu inscriptions dating to the 8th year of Ramesses III[21].

Mesopotamia is not a helpful source for the transition from the Bronze to the Iron Age, either. Babylonian daily records, which are highly accurate given the introduction of the intercalary month, extend from the mid-8th century BC to 261 BC, and do not shed light to the period in question. Assyrian eponym lists, which name every year after important officers and kings, cover the period between c. 900 BC and 650 BC, and thus can help for only approximately 100 years (Cryer, 1995: 657). The political instability after the death of Tukulti-Ninurta I (1243-1207) led to a period of internal chaos, and lasted for almost a century until

[21] These inscriptions are carved on the walls of the mortuary temple of Ramesses III in Medinet Habu. The inscription dates itself to the 8th year of Ramesses III and illustrates the victory he claims to have won against the "Sea Peoples" (Oriental Institute Epigraphic Survey, 1930; 1932; 1934; 1940; 1957; 1963; 1964; 2009; Edgerton, 1937; Hölscher et al., 1951).

Tiglath-Pileser I (1104-1076) campaigned successfully in northern Mesopotamia and Syria (Klengel, 2000: 22). Still, the internal dynamics of Mesopotamian civilization could not recover for another two centuries, until written documents resume satisfactorily in the 10th century. The documentation of the crisis years in Mesopotamia, hence, represents a multi-faceted problem: there is both a paucity of sources and an over-confidence in the existing ones. The Assyrian king lists have been much relied on, but their accuracy should be questioned. Assyrians seem to wish for the image of a dynastic continuity, and this may have resulted in the manipulation of the original data (Cryer, 1995: 658).

Scholars generally agreed that, these circumstances leave Egypt as the only relatively accurate and dependable chronological tradition for the whole 2nd millennium Near East (Cryer, 1995: 659). The inscriptions of Medinet Habu have been the primary sources for the interpretations of the end of the Bronze Age and the raids of the "Sea Peoples". These passages vividly describe a war at sea and land against foreign tribes, and a glorious victory against them:

> The foreign countries made a conspiracy in their islands *(sealands)*. All at once the lands were removed and scattered in the fray. No land could stand before their arms, from Hatti, Qode, Carchemish, Arzawa and Alasiya on, being cut off at one time. A camp was set up in one place in Amurru. They desolated its people, and its land was like that which has never come into being. They were coming forward toward Egypt, while the flame was prepared before them. Their confederation was the Peleset, Tjeker, Shekelesh, Denyen, and Weshesh, lands united. They laid their hands upon the land as far as the circuit of the earth, their hearts confident and trusting: 'Our plans will succeed!' (trans. Wilson in Pritchard (1969: 262), quoted in Bryce, 1998: 367; and Drews, 1993: 51)

> I equipped my frontier in Zahi (Djahi) prepared before them. The chiefs, the captains of the infantry, the nobles, I caused to equip the harbour-mouths, like a strong wall, with warships, galleys and barges [...] They were manned completely from bow to stern with valiant warriors, soldiers of all the choicest of Egypt, being like lions roaring on the mountain tops. The charioteers were warriors [...], and all good officers, ready of hand. Their horses were quivering in their every limb, ready to crush the countries under their feet... Those who reached my boundary, their seed is not; their heart and their soul are

> finished forever and ever. As for those who had assembled before them on the sea, the full flame was their front, before the harbour mouths, and a wall of metal upon the shore surrounded them. They were dragged, overturned, and laid low upon the beach; slain and made heaps from stern to bow of their galleys, while all their things were cast upon the water. (trans. Breasted (1906: iii. §579), quoted in Bryce, 1998: 371)

For the dating of the Medinet Habu inscriptions, scholars generally agree upon a date between 1180 BC and 1175 BC. Among them, Robert Drews (1993: 5-6) gives a comprehensive explanation by following the "low" chronology. He accepts the reign of Ramesses II to be from 1279 to 1212 BC, taking into account that he was followed by the elderly Merneptah, who reigned for 10 or 11 years, and Merneptah was followed by either Seti II or Amenmesse. Either way, Seti had the rule soon after Merneptah died, but he himself could rule only for six years. He was followed by his wife Tworset, who ruled for only two years. The death of Tworset marked the end of the nineteenth and the beginning of the twentieth dynasty. The first ruler of the twentieth dynasty was Setnakthe, who again ruled for only two years, and he was followed by the young Ramesses III. Relying on this sequence, Drews dates the reign of Ramesses III to 1186-1155 BC, and his 8th year inscribed in Medinet Habu to 1179 BC. However, there is also an alternative view that completely disagrees with this picture. Seeing the canonized Egyptian chronology as the backbone of the interpretation of the "Dark Ages", Peter James and his colleagues (1991: 220-259) suggest to take the actual evidence [22] as a framework without being intimidated by the conventional

[22] Peter James, I. J.Thorpe, Nikos Kokkinos, Robert Morkot and John Frankish critically revise the following evidence: 1. The over-reliance on the Star Sirius 2. The use of lunar references to set absolute chronologies, although these can only "fine-tune" existing frameworks 3. The identification of "Shishak, King of Egypt" of the Bible, who overran Solomon's temple in c. 925 BC, with Pharaoh Shoshenq I of the 22nd dynasty, whose reign is dated to 945-924 BC by Kenneth

chronology. The arguments put forward are detailed and persuasive, but the most striking of them is identifying the Biblical Shishak with Ramesses III instead of Shoshenq I. They think Shishak may be a decaded version of the name "Sessi", which is a common abbreviation for Ramesses. This places Ramesses III to the late 10th century instead of the early 12th (1991: 257). This approach radically alters the context and the dating of the Medinet Habu inscriptions.

Texts from Emar facilitated a similar dispute. The evidence from Emar rests upon a tablet (RPAE 26) in which the second year of the reign of the Kassite king Melišihu/Melišipak (1188-1174 BC) is considered to supply the date of the destruction of the city (Adamthwaite, 1996 after Bierbrier 1978: 136-137 and Boese, 1982: 18). However, Adamthwaite (1996: 106) disagrees with this dating and suggests a mid-13th century BC date based on synchronisms[23].

Kitchen (1996) 4. The length of the Third Intermediate Period 5. The continuation of artistic styles for over 300 years 6. Burials of Apis Bulls at Sakkara 7. Genealogical records 8. The Inhapi cache, in which the location of the mummies in fact contradict with the conventional chronologies 9. Royal tombs at Tanis 10. Offices at Thebes 11. Libyan dynasty finds outside Egypt.

[23] Talmi-Tešub is attested in a tablet form the "Hirayama Collection"(HCCT), in which his "Emarite wife is heard before Kunti-Tešub, the *DUMU.LUGAL*" (A title for the "crown prince". A detailed discussion on this title and qualifications, cf. Taş, İ. 2008. "M.Ö.13.Yüzyılda Kargamış Krallığında Görevli İki Hitit Memuru: mâr šarri (DUMU.LUGAL) ve Lukartappu," *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Tarih Bölümü Tarih Araştırmaları Dergisi*, 27(43): 95-117.) Adamthwaite (1996: 107) argues that Talmi-Tešub belongs to the latter part of the 13th century and this text is his only mention in the Emarite corpus, although his son Kunti-Tešub is also attested in RPAE 267, 1-2. However, the son who succeeded Kuzi-Tešub (as argued by Hawkins, 1988: 99) is not attested as the king of Carchemish in any of the Emar texts. Thus, Adamthwaite concludes that Talmi-Tešub's reign is the *terminus ad quem* of Emar, and synchronizes with the reign of Elli, the last king of Emar. This synchronizes Elli's father Pilsu-Dagan with the reign of Ini-Tešub, who had a very long reign in the mid-13th century, that can be synchronized with Belu-malik, a royal scribe of Pilsu-Dagan through RPAE 125,137, 180, 182 and with Ba'al-malik, a member of the Iadi-Ba'la dynasty through RPAE 217 (Adamthwaite, 1996: 107, n.89).

Adamthwaite also suggests an alternative look at a sub-corpus from Emar that is thought to date the destruction by the "Sea-Peoples". This sub-corpus consists of seven texts (RPAE 23-29) including the infamous RPAE 26, synchronized with the second regnal date of Melišipak. Bierbrier (1978: 136-37), Boese (1982: 18) and Arnaud (1987, 1991) used it as a destruction point

Lastly, a letter from the last Ugaritic king Ammurapi (ʻmrpi) to the king of Alashia, during the time of which the city was utterly destroyed and not rebuilt, was taken as an evidence supporting the conventional dating (Astour, 1965: 254).

> "My father, behold, the enemy's ships came (here); my cities were burned, and they did evil things in my country. Does not my father know that all my troops and chariots are in the Hittite country, and all my ships are in the land of Lycia? ... Thus, the country is abandoned to itself. May my father know it: the seven ships of the enemy that came here inflicted much damage upon us." (Astour 1965: 255)

Considering that the reign of Ammurapi is dated to c. 1195-1175 BC (Brinkman, 1970: 306-7), that text also fits well into the traditional chronological framework supplied by the Medinet Habu inscriptions.

Evaluating the evidence from Egypt, Ugarit and Emar, Drews concluded that "the Catastrophe seems to have begun with sporadic destructions in the last quarter of the thirteenth century, gathered momentum in the 1190s, and raged in full fury in the 1180s. By about 1175 the worst was apparently over, although dreadful things continued to happen throughout the twelfth century" (Drews, 1993: 7). However, James et al. (1991: 319) alter the whole dating of the end of the Bronze Age. They conclude that the Hittite Empire gradually dissolved during the 10th century BC, the Levantine alphabet that the Greeks copied in the 8th century was devised in the 9th century BC Byblos instead of the 11th century BC, and the Mycenaean civilization collapsed in the mid-10th century BC. They suggest that this interpretation is much more reasonable given the continuities between Late Bronze and the Iron Age cultures.

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for Emar. However, Adamthwaite uses date references to Babylonian calendar month names, preponderance of Babylonian and Kassite names and the physical features of the tablets (size and colour) to date this corpus to the late 13th century (Adamthwaite, 1996: 107-8).

This discussion is beyond the scope of this thesis. However, it is important to see that there may be serious problems with the much-trusted Egyptian and Emar texts, which supplied the backbone of the dating of the end of the LBA.

Although the collapse of the Bronze Age systems has often been labelled with negative terms such as "the Catastrophe", "destruction" and "Crisis" during the 20th century, the scholars of the 21st century have begun to see the bright side of the "Dark Ages". Among them, Kleiss (2000: 21) suggests, these years of crisis were also a period of reconstruction and innovation, in which the new system of the Iron Age kingdoms was shaped. The following section also considers the aftermath, and tries to emphasize the new ethno-political context of Anatolia in these years of formation.

2.2 The Changing Ethno-Political Context of Anatolia

2.2.1 Neo- Hittites

The collapse of the Hittite Empire was accompanied by the fall of major city centres in Anatolia and the Eastern Mediterranean, the disappearance of the Hittite cuneiform script and the dissolution of the Hittite imperial tradition (Hawkins, 2009: 164). Without the existence of central power, independent political states seem eventually to have filled the political vacuum. When written documents come back to the scene, Southeast Anatolia and North Syria are

occupied by "independent city states employing architecture and sculpture visibly derived from that of the Hittite Empire, and writing monumental inscriptions, also probably everyday documents, in the Hieroglpyhic script and Luwian language, another Hittite imperial tradition" (Hawkins, 2009: 164). This political formation has found its way into the scholarly tradition under different names; while "Late-Hittite", "Neo-Hittite" and "Syro-Hittite" are the most frequent ones (Günaydın, 2004: 16). There have also been scholars like Henri Frankfort (1954), who argued for the artificial nature of such a classification. Frankfort saw the Hittite art of the 10th-8th centuries BC as a continuum of the Hittite Imperial tradition. However, in this thesis, I will still cling to the term "Neo-Hittite", since this is the term that is more frequently used recently[24]. The term Syro-Hittites does no longer seem to be a fair geographical designation for these independent states, given the national boundaries that shifted in the 1920s and in 1938; and the increasing evidence coming from Cilicia and Amuq[25].

Ekrem Akurgal (1962: 127-136) dated the Neo-Hittite period to between c. 1100 BC and 700 BC. He differentiated 3 separate artistic phases on stylistic grounds; The Traditional Style (1050-850 BC), The Assyrian Style – 1st phase (850-745 BC), and 2nd phase (745-700 BC). Orthmann (1971: 20), on the other hand, saw the period between c.1000 BC and 700 BC as that of the Neo-Hittites and leaves two centuries to the "Dark Ages". Orthmann distinguishes Late Hittite

[24] See for example Vol. 72/4 of the Journal "Near Eastern Archaeology" published on December 2009 with the general title "The Neo-Hittites Uncovered".
[25] See especially Hawkins, 2009 "Cilicia, the Amuq and Aleppo: New Light in a Dark Age".

I between c. 1000 BC and 950 BC, Late Hittite II between c. 950-850 BC, Late Hittite IIIa to between c.850-750 BC and Late Hittite IIIb to c. 750-700 BC. Frankfort sees a cultural Dark Age in Southeast Anatolia and North Syria from 12th century to mid 9th century BC. Albright (1956), completely opposing all these views, saw the 11th and 10th centuries BC as the golden age of the Syro-Hittite art. The divergence between these dates is related with the problems of chronology mentioned in the previous section, as well as the dating of the Neo-Hittite material by stylistic grounds. The only way to transcend this divergence seems to be the construction of more reliable dynastic genealogies, and filling in the gaps between the fall of the empire and the Assyrian conquest[26].

The current scholarship is able to construct the continuities of Neo-Hittite dynasties for five generations at Karkamiš (Hawkins, 2000: 73) (Table 1), and for many generations from two lines at Melid (Hawkins, 1993: 41; Hawkins, 2000: 286-87) (Table 2) without interruption after the immediate fall of the Hittite Empire. The sources that enable us to construct these genealogies also contain the claims of their authors to be the "Great King of Hatti", a title used only by the king at Hattuša before the fall of the Empire. The dynastic line at Karkamiš continues until the Assyrian conquest in 717 BC, although with gaps (Hawkins, 2000: 76); while the information about the dynastic line of Melid is more patchy; and the interchanges between the Assyrian and the local kings make it hard to trace the dynastic continuity.

[26] Malatya (Melid) and Kargamıš has dynastic lines continuing after the fall of the empire. See Table 1and Table 2.

Overall, the Neo-Hittite states flourished throughout a large geographic area after the end of the Bronze Age, in the absence of a centralized political power (Map 2). It is surprising, however, how the relationship of the Neo-Hittite kingdoms with the Upper Euphrates area came to be underemphasized, although a seal impression from Lidar Höyük added another generation to the early Karkamiš dynastic line[27].

2.2.2 Luwians

Hittite texts are rich in the attestation of Luwian names, as well as texts/inscriptions in Luwian itself. The long continuation of the Luwian population in Anatolia is of special importance within the framework of this thesis, and may partly be associated with their settlement patterns.

Bryce (2003: 27) defines the Luwians as one of the three groups of the third millennium Anatolia who spoke an Indo-European language, with the other two being the Palaians in Paphlagonia and the Nešites in Central Anatolia. Later, in the second millennium, the Luwians in the West apparently became better established in Anatolia. Melchert (2003: 1) draws attention to the Hittite Law texts of the mid-second millennium BC that mention a land of Luwiya (KUR *Lú-i-ya*). Furthermore, Hittite Law documents manifest many privileges in favour

[27] Two seal impressions bearing the name "Kuzi-Tešub" were discovered in Lidar Höyük in the 1985 excavation season. This find was published by Dietrich Sürenhagen (1986: 183-90) under the title "Ein Königssiegel aus Kargamiš". Hawkins (1988: 99) certainly recognizes the names Kuzi-Tešub and Talmi-Tešub on the bullae, both rendered as "King of the Land of Kargamiš". This discovery added Kuzi-Tešub as the fifth generation to the dynasty appointed by Šuppiluliuma I, which was hitherto thought to end with Talmi-Tešub, father of Kuzi-Tešub.

of the Hittites over the Luwians in slave trade. Melchert (2003: 2) sees this as evidence that Luwiya is not merely a geographical attestation, but also a cultural one; and that the Luwians constituted a social group treated as "foreign" and "other" by the Hittites. Still, there can be an economical underpinning to the Luwian territory, since Southwest Anatolia is rich in metal ores.

In the Bronze Age, the Luwians are on the stage as people associated with Western Anatolia. During the first half of the second millennium BC, most of the Western Anatolia was called *Luwiya*. By the mid-second millennium BC, the term "Arzawa" began to connote the same region in Hittite texts, and transformed into the "Arzawa Lands", a collection of vassal kings in western and southwestern Anatolia, populated mainly by the Luwians (Bryce: 1998: 54-55). This population flourishing in Western Anatolia left important traces. Bryce (2003: 31) counts Apasa (Bronze Age Ephesos), Beycesultan and perhaps Troy VI as Luwian foundations.

"The land of Lukka" is another term appearing in the Bronze Age texts, and Bryce interprets the Lukka people as a sub-group of the Luwians[28] (Bryce, 1998: 56). This new attestation seems to coincide with the mid-second millennium, when the Luwian designation moves towards south and east, as people settled (Classical) Lycia as their westernmost frontier, through (Classical) Pamphylia, Pisidia, Isauria and Lycaonia to Cilicia as their easternmost territory (Bryce: 2003: 31). Mellink (1995) has demonstrated that, during the 14th and the 13th centuries

[28] This view contradicts with Easton's (1984: 27) interpretation of Lukka as the Hittite equivalent of the Luwian term *Luwiya*.

BC, the Xanthos Valley was a prominent feature, and maybe the heartland of the Lukka lands. According to Hawkins (2000: 39), it is in this period that Hittite Hieroglyphic inscriptions begin to be seen on rocks among Cilicia. The stele of Muwatalli at Sirkeli[29], the stele of Muwatalli and Kurunta at Meydancık[30], the inscription of Hattušili III and Puduhepa at Fraktin[31], the relief with a procession of three figures from Taşçı[32], the representation of the Storm-God at İmamkulu[33], the religious dedication to Šarruma at Hanyeri[34], and an unidentified figure at Hemite[35] exemplify this phenomenon.

It is still debated, if the Luwians moved to Southeast Anatolia in the 1st millennium BC, or they were already significant population groups there beforehand. As Bryce (2003: 101) points out, hieroglyphic Hittite inscriptions, references to the Luwians, and Luwian onomastic elements in the Hellenistic inscriptions show that the Luwians were major population groups in what was Bronze Age Lukka lands, Hittite Lower Land, Tarhuntašša and Kizzuwatna. However, by relying on the concentration of Luwian names in texts, Bryce

[29] Börker-Klähn, 1982: no.317, p.260; Kohlmeyer, 1983: no.14, pp.95-101; Rossner, 1988: 223-227.
[30] J. D. Hawkins assumes the existence of this inscription and cites the following sources: Laroche in Mellink, 1972: 171, Laroche in Mellink, 1974: 111; Laroche in Mellink, 1977: 296; Orthmann, 1974/77: 278; Laroche, 1981: 359. However, it is understood that the only person that ever saw this inscription is Laroche, and the existence of this inscription is disputed by many other scholars.
[31] Börker-Klähn, 1982: no.318, pp.260-262; Kohlmeyer, 1983: no.8, pp.67-74; Rossner, 1988: 159-167; Hawkins: 1978: 112; Güterbock, 1980: 127-136.
[32] Börker-Klähn, 1982: nos.319-320, p. 262; Kohlmeyer, 1983: nos.9-10, pp.74-80; Rossner, 1988: 168-172.
[33] Börker-Klähn, 1982: no.315, p.259; Kohlmeyer, 1983: no.11, pp.80-86; Rossner, 1988: 173-179.
[34] Börker-Klähn, 1982: no.314, p.258; Kohlmeyer, 1983: no.12, pp.86-90; Rossner, 1988: 180-185.
[35] Börker-Klähn, 1982: no.314, p.258; Kohlmeyer, 1983: no.12, pp.86-90; Rossner, 1988: 180-185.

concludes that the main centres of Luwian presence in the first millennium BC Anatolia were Cilicia Aspera (Tracheia) and Lycia.

There is no historical record that testifies a move of Luwians to the south. There is also no textual evidence for a Lukka "state". There never was a unified and centralized Luwian state or power in Anatolia, although the Luwian names attested in texts and Luwian inscriptions situate these people in a broad geography extending from West and North Anatolia to North Syria (Melchert, 2003: 2). Under these circumstances, the hypothesis of a Luwian movement towards the east and southeast through the Bronze and Early Iron Ages still remains as a valid one.

As mentioned earlier, the long continuation of the Luwian existence in Anatolia may partially owe to the settlement patterns. As Bryce (2003: 101) reasonably points out, Cilicia Aspera and Lycia, the two major centers of Luwian occupation in the first half of the 1st millennium BC, are similar in terms of their locations on mountainous terrain, less accessible by land or sea than their neighbours. He concludes by saying that the higher isolation level of the Luwians, then, may have resulted in a higher independence level for a longer period of time, something not experienced by their neighbours.

2.2.3 Aramaeans

The bronze panels on the Gates of Balawat (early 9th century BC) have the earliest datable portrait of the Aramaean people. Textual attestation, however,

goes considerably earlier. An Aramaean tribe, *Hiranu*, is attested as early as the 13th century BC (Dion, 1995: 1281). Tiglath-Pileser I (1114-1076 BC) is the first Assyrian king to mention the *ahlamu* Aramaeans[36], and how he crossed the Euphrates 28 times against them[37] (Hawkins, 1982: 381).

Hawkins dates the appearance of the Aramaeans in Mesopotamia to at least 1000 BC. He thinks that the appearance of this "new and intrusive" ethnic factor is closely tied with the hiatus experienced at the end of the Bronze Age (Hawkins, 1982: 272-73). During the Aramaean migrations into Assyria and Babylonia in the beginning of the 1st millennium BC, the Mesopotamian cultural tradition continued to dominate, but Aramaic interventions were strong and clear[38] (van de Mieroop, 2007: 204-5).

The Aramaean expansion of the Iron Age advanced differently in the north and south of Mesopotamia. Soon after their presence in Northern Mesopotamia, the Aramaeans went through a dense urbanization process, and began to be mentioned with the specific names of their settlements, like Damascus and Arpad. In the southeast, however, the Aramaean tribes remained marginal to the Babylonian society (Dion, 1995: 1286). The Aramaean states of the north flourished in the 10th century (Map 2). The major centres were, Bit-Adini, a tribal

[36] It is debated whether the *ahlamu* should be taken to mean the later Aramaeans. The general consensus is that the Aramaeans emerged as nomadic peoples with strong agro-pastoral backgrounds (Postgate, 1981: 48-50; Zadok, 1991: 104; Dion, 1997: 16-17; Sader, 2000: 64-65). H. Sader (2000: 64-5) among them, takes *ahlamu* as a term indicating tribal elements, who are always designated as "hordes", with no mention of urban features such as royal or fortified cities.

[37] See Grayson, 1987, Assyrian Rulers 3rd and 2nd millennium BC (*RIMA* 1).

[38] Van de Mieroop uses the specific case of language to demonstrate the effects of the Aramaeans on the Mesopotamian cultures.

state with its capital at Til-Barsib (Tell Ahmar) on the immediate south-east of Kargamış, and the east bank of the Euphrates. On the west of Kargamış and the Euphrates, Bit-Agusi flourished with its capital at Arpad (Tell Rifa'at). In the southwest, Hamath, with its capital at Hama, was seized from the Neo-Hittite states. Lastly, Damascus was the major site of the northern Aramaean expansion (Hawkins, 1982: 375).

However urbanized they were, the Aramaeans have always remained local tribes connected with the land of Aram[39] (Sader, 2000: 65). Still, the Aramaean culture formed a state of strong cultural interaction with the Neo-Hittite sphere. It is the culture that is shaped as a result of such interaction that David Hawkins terms as the "Syro-Hittite" (Hawkins, 1982: 375). The degree of interaction is visible in the specific example of Til-Barsib, which has been the subject of ongoing debate on whether it is a Neo-Hittite city or an Aramaic one[40] (Bunnens, 1995: 19). The variety of the opinions proposed on this matter shows the degree to which the Aramaic and Neo-Hittite culture fused into each other.

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[39] Aram is a biblical term and is defined as such in the Mercer dictionary of the Bible by S. Hooks (1990: 52): Aram/Aramaeans: A term applied in the Bible to a number of persons and places located in the territory extending from the Lebanon Mountains in the west to beyond the Euphrates in the east and from the Taurus Mountains in the north to Damascus and beyond in the south.

[40] G. Bunnens (1995: 19-20) distinguishes four opinions on this matter:

1. F. Thureau-Dangin advocated that Til-Barsib remained Hittite until the Aramaean conquest in the 1st millennium BC (Thureau-Dangin, 1936: 134)
2. Y. Ikeda and D. Hawkins argued that the Aramaean conquest should be moved forward, to the period immediately before the Assyrian conquest (Ikeda, 1984: 34; Hawkins, 1980: 156)
3. D. Ussishkin debated that Til Barsib had a dominant Aramaean character since the beginning of the 1st millennium BC. However, he thinks that a Hittite dynasty established its dominion during the 10th or early 9th century BC (Ussishkin, 1971: 437)
4. G. Bunnens proposed that Til Barsib was a Neo-Hittite kingdom, which was a vassal state of Ahuni, the sheikh of the tribe of Adini (Bunnens, 1989: 4; Bunnens, 1995: 24)

CHAPTER 3

UPPER EUPHRATES BASIN: ALTINOVA AND KARABABA DAM RESERVOIR AREA

3.1 Geographical Features of the Upper Euphrates Basin

The Upper Euphrates Basin consists of the major sub-regions of Malatya-Elazığ and Urfa-Adıyaman (Map 3). The course of the Euphrates carves valleys through these regions, and its banks are occasionally dotted with settlements.

The province of Elazığ is surrounded by mountain ranges, which create segregated plains. The largest of these is "Altınova", a plain bordered by the Dersim Massive of the Anti-Taurus in the north, Mt. Bingöl on the east and Mt. Mastar in the south (Hauptmann 1969/70: 22). The water sources this plain drains from the surrounding mountains collect in the center and join the Euphrates on the north, with the name "Ulusu" (Kökten, 1947: 460). The fertile lands of Altınova were being exploited in favour of grains, cotton and fruits, while its foothills were the setting of vineyards, before its submergence (Hauptmann, 1969/70: 22).

The Urfa-Adıyaman region is situated between the Urfa plain and the Adıyaman plateau. In this region, the Euphrates cuts a deep valley, which has a wide surface area (Özdoğan, 1977: 1). Research showed that the course of the Euphrates moved southwards throughout the history and that there is extensive alluvial sedimentation. This is the reason why ancient settlements are not found on the areas close to the Euphrates in the western bank (Özdoğan, 1977: 104).

With the initiation of the GAP Project, the geography of the region experienced a drastic change. 22 artificial dam lakes were planned along the courses of the Tigris and the Euphrates[41]. Within this process, Altınova was incorporated into the Keban dam, while the Urfa-Adıyaman course of the Euphrates was incorporated into Karababa and Bedir dams, which were later called the Atatürk Dam.

3.2 History of Investigations

The rich and fertile setting of Altınova, identified by Polybius as the "fair plain" (χαλόν πεδίον) was subject to traveller's accounts from early times on (Brant, 1836; Ritter, 1843; Taylor, 1868; Cuinet, 1891; Naumann, 1893; Lynch, 1901; Vannutelli, 1911; Banse, 1915; Chaput, 1936). The first archaeological investigation of the region was undertaken by İ. Kılıç Kökten on behalf of the Turkish Historical Society. Dr. Kökten surveyed a major part of Anatolia between

[41] For more information about the components and the aims of the GAP project, please visit http://www.gap.gov.tr.

the years 1940-45. His 1945 campaign covered the regions of Ankara, Sivas, Malatya, Elazığ and Muş (Kökten, 1947: 431). He also visited the Keban region and recorded the following tells in Altınova: Perçenek, Vertetil, Kehli, Sintil, Mollakendi, Kuğank, Sarpulu, Könk, Alişam (Norşin), Şemsi Köy, Koğu, Kürü (Map 4). Theresa Goell made several surveys in the Karababa dam area during her Samsat excavations, but nothing has been published from these investigations (Özdoğan, 1977: 5).

Another archaeological research of the area was done by C. Burney in 1956 as part of his broad survey extending to the cities of Sivas, Malatya, Elazığ, Muş, Bitlis and Van. He recorded more than 150 sites of the Chalcolithic, Bronze and Iron Ages (Map 5), and mentions Tülin Tepe, Makaraz Tepe (Tepecik) and Maşatlık (Sarpulu) from Altınova (Burney, 1958: 157, 204).

The plan for constructing dams on the waters of the Tigris and the Euphrates changed this picture drastically. The second half of the 1960s saw the immense intensification of archaeological research in the Keban area. METU's Department of Architecture was the first institution to undertake salvage work in 1966, with a survey especially focused on recording visible monuments, which were generally dated to medieval times and later (Doomed by the Dam, 1967). Next year, a joint project between Istanbul University and University of Michigan was initiated under the directorship of S. Kantman and R. Whallon (Whallon and Kantman, 1969; 1970; Whallon, 1979). This survey aimed to make systematic surface collections from as many sites as possible in most of the Keban Dam area.

The team reached a coverage of 323 km^2 in the 628 km^2 Keban surface, with 180 km^2 belonging to Altınova (Whallon, 1979: 10, 11). The METU Keban Project was launched in 1968 and conducted salvage projects in more than 20 sites[42] in the Keban area until 1975 (Keban Project Publications, 1971; 1972; 1974; 1976; 1979; 1982).

The focus of the research shifted to the Lower Euphrates Basin in the same year. Preliminary surveys were conducted by Ümit Serdaroğlu and Mehmet Özdoğan. These surveys located 60 sites and the need for further research was clear (Özdoğan, 1977: 5). A survey was conducted by the team of Serdaroğlu in the Karakaya, Karababa and the Bedir dam areas, with a focus on structural remains (Serdaroğlu, 1977). Another survey directed by M. Özdoğan was done two years later, this time with the intention to record ancient settlements and mounds (Özdoğan, 1977). Surface collections were done by Ufuk Esin on Samsat, Kamikli and İmikuşağı in 1976 (Özdoğan, 1977: 6). The 1978-1979 expeditions in the Lower Euphrates were published separately (Lower Euphrates Project Publications, 1979). As a result of these investigations, 210 sites were recorded in the dam area.

[42] Sites excavated under the auspices of the METU Keban-Karakaya Project include: Norşun Tepe (between 1968-1975, H. Hauptmann), Korucutepe (between 1968-1972, M. van Loon; between 1973-1975 H. Ertem), Tepecik/Makaraz (between 1968-1974, U. Esin), Tülin Tepe (between 1971-1974, U. Esin – G. Arsebük), Değirmentepe (1973, R. Duru), İbrahim Şan (1970-1971, H. Ertem), Pulur (1960, H. Koşay), Pulur-Sakyol (between 1968-1971, H. Koşay), Aşvan Kale (between 1968-1972, D. French), Taşkun Kale (1970-1971, 1973, D. French), Çayboyu (between 1970-1972, D. French), Fatmalı-Kalecik (1968, R. Whallon – H. T. Wright), Pağnık (between 1967-1975, R. Harper), and Körtepe (between 1972-1974, H. Hauptmann).

3.3 Settlement Patterns during the Late Bronze Age

The data for the settlement patterns of Late Bronze Altınova comes from the survey of Whallon and Kantman (Figure 1) (1969; 1970; Whallon, 1979). This survey located a heavy occupation pattern in the plain during the Late Bronze Age (Figure 2). Whallon and Kantman's survey determined the existence and the extent of the Late Bronze Age settlements on the basis of Hittite pottery[43]. Their pottery classifications are paralleled by finds from Korucutepe (Kelly-Buccellati, 1973: 436). Thus, the LBA settlement pattern analysis of Altınova will be based on the data supplied by Whallon and Kantman.

On the contrary, the LBA material from the Lower Euphrates Basin surveys is not as clear. The LBA pottery is evaluated together with the Middle Bronze Age ceramics (Figure 3), although differentiating ware types are specified according to the sites. Still, trying to distinguish MBA and LBA materials on the mere basis of drawings, and without any sight on their fabric, colour and surface treatment can be a misleading act. I also tried to distinguish the sites with LBA levels and map them. However, apart from Özdoğan's survey report, only the excavated sites have publications. This would again result in a misleading map, since I would end up with incorporating excavated sites with LBA levels, and not the sites that were surveyed and not been published. Under these circumstances, I found it more

[43] Hittite buff-orange burnished ware, Hittite chaff faced smoothed ware, Hittite red-brown burnished ware, Hittite white slipped ware, Hittite painted ware, Hittite brown gritty cooking ware (Whallon, 1979: 39-46).

secure to not include the LBA settlement pattern data from the Karababa dam area, instead of producing wrong information about the settlement patterns.

3.3.1 Altınova

LBA was the period in which Altınova saw its most dense occupation. The aggregate settlement area in the plain was 30.0 ha, higher significantly than both other periods in the plain, and the LBA results of the other areas within the Keban Dam area (Figure 4). Still, it is important to realize that 30.0 ha of aggregate settlement is not a high value in comparison with other regions. During the LBA, Tell Atchana in the Amuq plain covered an area of 20.0 ha by itself (Casana, 2009: 16). Under these circumstances, it would not be unreasonable to assume that the settlements in Altınova were merely larger than villages.

The Voronoi diagram of the LBA Altınova suggests an encircled occupation pattern (Figure 5). The altered Voronoi diagram with the borders re-drawn according to the rivers also confirms this picture (Figure 6). The periphery of the plain is surrounded by settlements with larger territories. This tier contains the sites of O54/1 (Tülin Tepe), O54/2 (Makaraz Tepe – Tepecik), O55/4 (Körtepe), O55/6, O55/1 (Korucu Tepe), O54/8 (Norşun Tepe), O54/10, O54/12 (Kuruçayır Tepesi), O54/28 (Körtepe) and O54/7 (Könk). The sphere that these sites enclose form the central area of LBA Altınova, occupied by settlements with smaller territories, "sandwiched" between the peripheral line of larger sites. The only exception seems to be the site O54/24 (Şavka Tepe). However, since this site is the

last one of the median settlements, its over-extended territory may be an anomaly related with the nature of the analysis. The overall scheme becomes more meaningful when evaluated with the courses of the Euphrates and Murat. As mentioned above, the center of the plain drains the water from the mountains and is well-watered. Smaller and more clustered settlements occur in this central block, with sites on both banks. Furthermore, the Murat, which expands in Altınova before it shrinks again to leave the plain as one major course, forms a clear boundary for LBA Altınova. No settlement is situated on its northern banks, and it surely forms a more probable border for the LBA settlement in the plain rather than the border derived from the survey area.

On the contrary, the nearest neighbour analysis of LBA Altınova resulted in a random configuration (Figure 7). The distances of each site to its nearest neighbour were measured and recorded. These distances were then summed up to 30,38 km, and an average of 1,266 was reached when the sum was divided by 24, the total site number. Afterwards, the formula $R_n = 2 \times d \times \sqrt{n/a}$ was implemented. The result was 1.07, which corresponds to a "random" in the interpretation scale (Appendix A4).

Third, rank-size analysis was conducted on the LBA Altınova settlements. For this analysis, a table derived from the occupation areas measured by the Whallon and Kantman team (Whallon, 1979: 284) was turned into a graph (Figure 8). This shows a well-proportioned settlement pattern in Altınova, with Norşun Tepe being the primary settlement that is supported by a second-tier of

intermediate sites. By looking at the occupation areas alone, this is well visible. There is a dramatic difference between Norşun Tepe (8.2 ha) and its closest follower, Tepecik (3.4 ha). From this, Tepecik also seems to be a site of regional importance, since its followers are sites with occupation areas of 1.7 ha, only half of the area of Tepecik. Next are the sites of Değirmen Tepe, Kazancı, Körtepe (O55/8-9), Tülin Tepe, Korucutepe and Körtepe (O55/4), all with occupation areas ranging between 1.3 ha and 1.7 ha. The rest of the plain is populated by settlements with occupation areas less than a hectare. As mentioned above, these occupation areas should be view in comparison with the Amuq. In the LBA, the primary settlement in the Amuq, Tell Atchana/Alalakh covered 20 ha, a value that multiplies Norşun Tepe 2,5 times. However, at the same time, the area of the Amuq is 1780 km^2, while Altınova covers only 132 km^2. From this perspective, Norşun Tepe may not be as large as Alalakh, but it is definitely significant for LBA Altınova.

It is not possible to read any gravity nodes in the LBA Altınova. Although two important clusters appear, of O54/11, O54/21 and O54/22 at the very center of the plain, and of O54/8, O54/9, O54/10 to its south; these nodes are not prominent enough to define central places.

3.3.2 Settlement Patterns of Karababa Dam Area during the LBA

Settlement pattern analyses were not carried out for Karababa Dam Area because of the problems related with data, as stated above.

3.4 Settlement Patterns during the EIA

Contrary to the meticulous work done on the Late Bronze Age material, the Whallon and Kantman survey was not as successful for mapping the EIA settlements. Their survey located four settlements in Altınova with EIA levels (Figure 9), with two of them bearing only scatters of sherds (Değirmen Tepe and Mezarlık Tepe. Whallon, 1979: 275, fig. 206).

Similarly, the survey conducted by Özdoğan (1977) did not differentiate between Iron Age materials (Özdoğan, 1977: 15, Karababa: Iron Age Settlements) (Figure 10). This renders impossible any further study on EIA settlement patterns from these original sources.

However, recent studies on a distinct pottery type of the Upper Euphrates region during the EIA, i.e. the "grooved pottery", has shed more light on the settlement patterns in the area.

Norşuntepe excavations provided the most complete repertoire and stratigraphy of this type of pottery[44] (Bartl, 2001: 386). Depending on the Norşun repertoire, Bartl (2001: 386; 1994: 481-82; 1988) defines the grooved pottery as having varied surface treatments[45] and several sizes. He identifies four major shapes: 1. Round bowls and carinated bowls without decoration (Figure 11) 2. Round bowls and carinated bowls with horizontal grooves around the rim (Figure 12) 3. Hole-mouth pots with spouts and handles (Figure 13) 4. Vase-like

[44] Norşuntepe EIA pottery was studied by K. Bartl as a PhD dissertation at the Freie Universität Berlin, in 1988.

[45] 1. Coarsely made examples with no wash/slip, 2. Examples with thick slip of dark red-brown to light pinkish buff, 3. Slightly burnished examples, 4. Brick-red slipped examples, which are carefully burnished, and sometimes even polished.

pots (Figure 14). Grooved pottery may have incisions or appliqué knobs as decoration. Painted examples also exist (Figure 15). However, grooved pottery has a very wide distribution area and a complex chronological framework. Thus, it is best to take Bartl's typological assessments strictly for the Keban area.

The dating of the grooved pottery has been debated by scholars. Grooved pottery of Keban area is dated to 1150/1100-1000/950 BC (Bartl, 2001: 391; 1994; 1988). Finds from Lidar Höyük confirm this dating (Müller, 2005; 2003: 139), while Tille chronology creates a contradiction, since the same pottery is dated to 10th-9th centuries BC, and comes from Neo-Hittite contexts (Blaylock, 1999: 201). In the Upper Tigris region, evidence coming from Ziyaret Tepe and Giricano suggested a starting date of 1050 BC, i.e. after the end of the Middle Assyrian control, but it is yet uncertain for how long grooved pottery remained in use (Roaf and Schachner, 2005: 120).This type is also encountered in the Lake Van Basin, where a 9th-7th century BC interval is suggested for its use (Konyar, 2005: 7). Furthermore, examples come from Northwestern Iran centers of Geoy Tepe A (Burton Brown, 1951: fig. 36), Kordlartepe III-IV (Lippert, 1979: figs. 5-14) and Zendan-i Suleiman (Boehmer, 1989) generally supplied 8th-7th century BC datings (Bartl, 2001: 396). Examples were provided from Armenian settlements such as Horom (Badaljan et al. 1992; 1993; 1994; 1997). However, the dating and stratigraphy of EIA in Armenia is still problematic, as exemplified by the 1300-800 BC date suggested by Smith and Kafadarian (1996: 23).

As the above discussion suggests, grooved pottery has a wide distribution zone (Figure 16). Although such broad temporal and spatial borders make it impossible to associate this type of pottery with any specific ethnicity or culture, it is still reliable to treat grooved pottery as a marker of EIA. Hence, the following discussions about settlement patterns will incorporate data gathered by means of grooved pottery.

3.4.1 Altınova

Although he located fewer EIA sites in Altınova, Whallon saw a sparse but fairly clear settlement pattern in the plain during this period. He suggested that there was a uniform pattern along the plain (Whallon, 1979: 274-75).

Spatial analyses confirm this view. The Voronoi diagram of EIA Altınova reflects a very balanced and homogenous settlement pattern (Figure 17). 10 settlements are dispersed throughout the plain, while some emerge in "couples". Settlements O55/4 and O54/3 (Değirmen Tepe) are clustered on the north-east corner of the plain, while O55/1 (Korucutepe) and O55/8-9 (Körtepe) are close together on the south-east. One more such configuration is O54/8 (Norşun Tepe) and Kövenk [46] in the south. The other settlements, O54/7 (Könk), O54/21 (Maşatlık), O54/1 (Tülin Tepe) and O54/2 (Tepecik) show a more even distribution, with no sites in the vicinity of 2 km.

[46] Kövenk was not assigned a site number during Whallon and Kantman's survey, which is why it is only mentioned with its name and not with a number.

When the Voronoi diagram is re-drawn with the borders defined by rivers, another important configuration emerge (Figure 18). In this scheme, the center of the plain, as defined by the two branches of Euphrates, is left unoccupied. There may be two explanations for such a configuration: 1. The dwellers may have wished to leave the area between the two rivers unoccupied for cultivation purposes. This area must have presented the change for easy irrigation. 2. The dwellers may have preferred to settle in the more remote and isolated areas of the plain and leave the most accessible center unoccupied[47]. Whichever was the reason, it is evident that the rivers played an important role during the EIA, and acted as dividing lines throughout the plain.

Nearest neighbour analysis conducted on the EIA sites in Altınova confirm the clusters read in the Voronoi diagram (Figure 19). The distances of each site to its nearest neighbour were measured and recorded. These distances were then summed up to 15.46 km, and an average of 1.546 was reached when the sum was divided by 10, the total site number. Afterwards, the formula $R_n = 2 \times d \times \sqrt{n/a}$ was implemented. The result was 0.8485, which corresponds to "tendency for clustering" in the interpretation scale (Appendix A4).

Although 10 sites existed in the EIA Altınova, it is possible to derive occupation areas for only 6 sites for rank-size analysis – O54/2 (Tepecik), O54/3

[47] It was unfortunately not possible to gather detail topographical information about Altınova. The survey maps do not present it. The maps from the period before 1980s do not see topography as an essential asset for themselves. The maps done after this period have the data, but they show Altınova as part of the Keban dam lake. There are regional topographical maps in scales 1:50.000 and above, but since Altınova is a very small area, it is always shown as a flat land in these maps. Thus, I can not judge if these "remote and isolated" areas were in the foothills. The photographs taken during the survey do not reflect a serious topographical change in the plain proper.

(Değirmentepe), O54/7 (Könk), O54/8 (Norşun Tepe), O55/4 (Körtepe) and O55/8-9 (Körtepe) (Whallon, 1979: 285, Table 18). The other sites are not mentioned in Whallon's survey publication with their Iron Age levels, and the works on grooved pottery (Bartl 1994, 2001; Kleis et al 1976; Russell 1980) do not give any information about the distribution of this material on solitary mounds. However, a 60% sample is representative enough to conduct rank-size analysis. During this period, one can see the dramatic change in the occupation areas, with Norşun Tepe's area shrinking from 8.2 ha of the LBA to the 3.4 ha of the EIA (Figure 20). Still, Norşun Tepe remains as the largest site in the area, but its occupation area and the aggregate occupation of the plain (most probably around 10.0 ha) cast serious doubt on any urban character throughout the plain in the EIA.

Another interesting point that can be derived from the occupation areas is the survival of the sites from the LBA. 6 settlements survived into the EIA from the leading 8 settlements of the LBA. In other words, out of the 8 sites with occupation areas more than 1 ha in the LBA; 6 survived, while the first – Norşun Tepe – preserved its rank. However, as the discussion chapter will demonstrate, this continuity of settlement "places" can hardly be equated with the "nature" of the settlements. Serious changes in material culture and architecture occur, such as grooved ware replacing Hittite repertoire, or abundant number of pits becoming the dominant architecture.

3.4.2 Karababa Dam Area

For the spatial analysis of the Karababa dam area, the base map provided by Özdoğan's survey publication (1977) (Figure 10) was used and juxtaposed with Bartl's sites of grooved pottery (Figure 21). There were two sites (T52/15 – Horis Kale, and S52/14 – Komu Rej) that stayed outside the border defined by Özdoğan's survey, but since these sites remained within the enclaves defined by the Euphrates, I chose to join these enclaves with an artificial border and include these two sites.

The Voronoi diagram of EIA Karababa dam area shows a balanced and uniform settlement pattern (Figure 22). When the analysis is done with taking the rivers as the borders, the role of the Euphrates becomes more evident (Figure 23). The settlements seem to favour the western bank, since only T51/40 (Lidar Höyük) and U51/8 (Tatarhöyük) emerged on the eastern Euphrates in the EIA Karababa dam area. In the overall configuration, Samsat seems to have a large territory. Although surveys and excavations were carried out in this mound by Theresa Goell, nothing has been published except an article (Goell, 1969) and small notes in the "Archaeology of Asia Minor" series (Mellink, 1965: 143; 1968: 146). However, the little information available about Samsat enables to place the capital of the Neo-Hittite Kummukh there[48]. Kummukh, the later Commagene,

[48] Hawkins (2000: 333) is certain about Samsat being the capital of Kummukh, by relying on the steles Samsat 1-3 and the sculpture and partial inscriptions of Samsat 1-10.

occupied a long stretch of the west bank of the Euphrates (Hawkins, 1982: 375). Hawkins defines the general extent of the Iron Age kingdom by the mountain ranges that separate Kummukh from Melid on the north, Euphrates on the east, Pazarcık as the border with Gurgum on the west, and Carchemish on the south (Hawkins, 2000: 331). The Voronoi diagram thus becomes more meaningful, and the agglomeration of the sites on the west bank of the Euphrates may be explained with a territorial state.

Another pattern visible from the Voronoi diagram is the agglomeration of sites around Samsat (T51/10, T51/33, T51/40), and the rest of the settlements are evenly spaced with no apparent clusters.

Nearest neighbour analysis conducted on the EIA sites in Karababa agrees with this result and suggests a regular settlement pattern (Figure 24). The distances of each site to its nearest neighbour were measured and recorded. These distances were then summed up to 37.25 km, and an average of 4.1388 km was reached when the sum was divided by 9, the total site number. Afterwards, the formula $R_n = 2 \times d \times \sqrt{n/a}$ was implemented. The result was 1.6073, which corresponds to "strong tendency for regularity" in the interpretation scale (Appendix A4).

Rank-size analysis could not be conducted in the Karababa dam area. Although Özdoğan (1977) gives areas of the mounds, these are measurements of the mound proper, and do not differentiate between periods. Therefore, rank-size analysis conducted with this data can be misleading.

CHAPTER 4

THE AMUQ

4.1 Geographical Features of the Amuq

The Amuq Plain is situated in Hatay, the southernmost province of Turkey. It is roughly an equilateral triangle with its apex to the north (Braidwood, 1937: 8). The flat area at the valley basin measures ca. 30x30 kilometers, (Casana and Wilkinson, 2005: 28; Wilkinson, 2000: 168) while the Amuq covers an area of ca. 1781 km^2 including the foothills. On the west and north, the Amuq Plain is surrounded by the Amanus (*Nur Mountains*) and the Taurus Mountains (*Toros Mountains*) (Yener et al, 2000: 163), while limestone hills, most of which lie within the Syrian border, encloses the south and east borders (Casana and Wilkinson, 2005: 28; Yener et al, 2000: 163; Wilkinson, 2000: 168). The elevation of the plain is 80-85 meters, and it receives an average rainfall of 500-700 mm per annum (Casana and Wilkinson, 2005: 28; Wilkinson, 2000: 168-69).

The Karasu, Afrin and the Orontes (*Asi*) river systems enter the Amuq from the north, south and the east, carving it into sub-regions with their main routes

and adjoining tributaries. Although the plain was mainly dry for the most part of the Holocene, these river systems made the appearance of marshes and small lakes possible (Casana and Wilkinson, 2005: 33). The central area of the Amuq, defined by the exteriors of the curves of the Karasu and the Orontes was the setting of a lake in earlier times. Based on his observations in the 1930s that some sites were situated within the swamp of the lake, Braidwood (1937: 9-10) concluded that the lake did not exist in ancient times, but was a Medieval formation. Decades later, Braidwood's insight was justified by the geo-archaeological research conducted under the directorship of Tony J. Wilkinson, which showed that the lake was formed during the Roman – Islamic times, or slightly earlier (Wilkinson, 2000: 179). This lake, previously known as "Amik Gölü" or "Ak Deniz", used to cover ca. 1/6th of the plain area (Braidwood, 1937: 8), until it was drained in the 1950s and 1960s (Casana and Wilkinson, 2005: 28).

Apart from their environmental indications, these three river systems contributed significantly to the cultural geography of the Amuq region. Although the contribution of the Orontes is generally associated with Late Classical Antioch[49], it is important to remember that Tell Atchana (Alalakh) and Tell Ta'yinat, the shifting major urban center of the Amuq region, thrived along the bank of the Orontes. The importance of the rivers for the historical geography is also affirmed by historical sources. Assyrian sources testify that in the year c. 870 BC, Aššurnasirpal II crossed the river Apre (modern Afrin) to reach Kunulua and

[49] *Antiochia ad Orontem* (Antioch-on-the-Orontes) as labelled by Libanius, was one of the major centres of the Roman Empire during the first centuries AD.

from there he crossed the Orontes (Hawkins, 2000: 362). For these reasons, it is important to consider the Orontes, Karasu and Afrin valleys as extensions of the Amuq (Braidwood, 1937: 8). However, it is also important to remember that these river systems cause heavy erosions as well as alluvial and coalluvial depositions on the plain, and obscure the archaeological record (Casana and Wilkinson, 2005: 30).

Although the Amuq Plain seems to be geographically isolated due to the surrounding mountain ranges, it was indeed physically integrated to its wider context. Two main passes were used to cross the Amanus Mountains in antiquity. The Beylân Pass (modern Belen) on the southwest, known as the "Syrian Gates" in antiquity, and the Arslanlı Bel Pass on the northwest both offered routes over the Amanus towards Cilicia. While Beylân connected to İskenderun, Arslanlı Bel connected to modern Bahçe in the province of Osmaniye through Zincirli (Alkım, 1969: 280). The extension of the African Dead-Sea Rift Valley creates a depression on the north-south axis that links up to Sakçagözü (Yener, 2005: 163), through which the riverbed of Kara Su finds its way. The valley of the Orontes, furthermore, carves through the mountain ranges. The Orontes Delta, ca. 40 km west of the Amuq, created the easiest route to the Mediterranean (Pamir, 2005: 67). The Afrin, on the other hand, leads into West Syria and constitutes part of the road to modern Aleppo. During the LBA, the Amuq was most probably the setting of the kingdom of Mukish, which extended control over the Afrin Valley in the east and the Karasu valley in the north, as far as Islahiye and from the

Orontes Valley in Antakya to the Mediterranean (Casana, 2009: 18), another reflection of the integrated nature of the plain.

As a result of these geographical features in addition to abundant timber, minerals, and pasture (Yener, 2005: 2), the Amuq seems to be a favoured habitation niche during antiquity. This resulted in the exploitation of the landscape. By the 2nd and 1st millennia BC, i.e. during the time when Tell Atchana and Tell Ta'yinat were occupied, the landscape had already been greatly altered, and replaced by a Mediterranean type of vegetation instead of the former woodland (Casana and Wilkinson, 2005: 34, 45). The same reasons also apply today for intense habitation through the Amuq. Braidwood (1937: 9) describes the Amuq Plain of the 1930s as a completely agricultural landscape, mainly engaged in the cultivation of grains, orange, olive and mulberry. The agricultural pattern has changed since the 1950s, especially with the drainage of the lake. The plain is now a setting of intense cotton cultivation, which increased the need for flat land, and the bulldozing of the sites, in turn (Casana and Wilkinson, 2005: 31; Verstraete and Wilkinson, 2000: 180). Today between 90% to 95% of the plain is covered with cotton, which makes the identification of archaeological sites extremely difficult (Casana and Wilkinson, 2005: 27). A further complication for the archaeological record is the pattern of sedimentation throughout the Amuq Plain. Wilkinson (2000: 173), investigating these patterns, concludes that sedimentation buried mainly the earlier sites, as one might expect.

Geographically located at the intersection between the eastern Mediterranean and the Anatolian highlands (Harrison, 2000: 192), the Amuq Plain is culturally a juxtaposition of four significant cultural zones: "Anatolian (Hittite and Hurrian), eastern Mediterranean (Aegean and Cypriot), Levantine and Palestinian (Egyptian and Canaanite), and northern Syro-Mesopotamian (Hurrian/Mittani and Assyrian-Babylonian) (Yener, 2000: 163). It is important to consider these cultural attestations when assessing the settlement data of the Amuq Plain.

4.2 History of Investigations

The first investigations to be undertaken in the Amuq proper were by P. Perdrizet and Ch. Forsey in the form of a reconnaissance project from Damascus to Antioch, Aleppo and Alexandretta in 1896. Their work was published in 1897 (Braidwood, 1937: 2). Six years after them, in the year 1902, M. Victor Chapot journeyed through the Plain of Antioch (Braidwood, 1937: 2). The Princeton expedition of 1905 focused on the mountains to the south and east, and did not mention the plain proper. The main research interest of this campaign was the Classical and Early Christian remains in the vicinity (Braidwood, 1937: 2). Princeton University returned to the plain in the 1920s, to excavate the remains of Roman Antioch (Yener, 2005: 6; Kondoleon, 2000; Waagé, 1952; Waagé, 1948; Stillwell, 1938; Elderkin, 1934). Simultaneously, Perdizet returned to the Amuq

with H. Seyrig in 1924, to conduct a survey around Antioch and al-Suqaidiyyah (Braidwood, 1937: 2).

Comprehensive research, however, was not launched until the 1930s. The "Syro-Hittite Expedition" of the Oriental Institute of the University of Chicago was activated by James Henry Breasted in 1931. The major aim of the project was to survey the plain proper and the tributary river valleys in search of evidence of the 1st millennium Late Hittite kingdoms (Braidwood, 1937: 1). The Oriental Institute also initiated excavations at six mounds with the purpose of finding the remains of Kunulua, the capital of the land of Pattina/Unqi as mentioned by the Assyrian sources. The excavated mounds were; Çatalhöyük, Tell al-Judaidah, Tell Ta'yinat, Tulail al-Sharqi, Tell Ta'yinat al-Saghir and Tell Kurcoğlu (Tell Kırcaoğlu) (Braidwood and Braidwood, 1960: 1; Hawkins, 2000: 361; Yener, 2005: 5). The Neolithic-Early Bronze Age strata were published by Robert and Linda Braidwood (Braidwood and Braidwood, 1960), while the structural remains from 1600 BC up to the modern sites (Amuq phases M-V) from Çatal Höyük, Tell Ta'yinat and Tell al-Judaidah were published by Haines (Haines, 1971). Also in the 1930s, an important figure entered the scene of the Amuq. Sir Leonard Woolley's excavation history in the Amuq and the adjoining valleys began with al-Mina (OS 11[50]) and Sabuniye (OS 12) (Woolley, 1937a; Woolley 1937b; Woolley 1937c; Woolley 1938a; Woolley 1948a). Woolley then conducted

[50] On the contrary to the AS abbreviation used first by Braidwood to refer to the "Amuq Survey", the label OS is produced by a branch of the currently ongoing Amuq Valley Projects, and refers to the "Orontes Survey".

excavations at Tell Atchana (ancient Alalakh, AS 136), Tabarat al-Akrad (AS 182), Tell es-Sheikh (AS 135) and soundings in a number of smaller sites between 1936 and 1949 (Woolley, 1953a; Woolley, 1955; French, 1985; French, 1990; Hood, 1951; Yener, 2005: 5). Remzi Oğuz Arık, traversed the area in the year 1942 (Yener, 2005: 7). Almost a decade later, Georges Tchalenko conducted survey work on the limestone massifs, where entire building plans of the Late Roman period (4th-6th centuries AD) were preserved (Tchalenko, 1953-1958; Tate, 1992; Yener, 2005: 25). During the 1958-1968 period, the area was thoroughly explored by Turkish teams funded by the Turkish Historical Society (TTK) (Alkım, 1959a; 1959b; 1965; 1969). During two years between 1958 and 1960, there was systematic survey work, which resulted in the recording of more than 40 sites. Aslıhan Yener, Hadi Özbal and MTA teams conducted reconnaissance in Kisecik mines and other mines in the Amanus region in 1987 (Yener, 2005: 10).

The currently ongoing Amuq Valley Regional Project (referred to as AVRP hereafter) constitutes the most extensive and systematic research undertaken in the Amuq Plain. The first eight seasons of this expedition have been published (Yener ed., 2005). The geo-archaeological survey of the region has been done under the directorship of Tony J. Wilkinson, and the results have been published in various contexts (Wilkinson, 1997; Wilkinson, 2000; Wilkinson, 2002; Casana and Wilkinson, 2005). Intensive site-specific surveys were launched in three major sites: Tell Kurdu (AS 94), Tell Atchana (AS 136) and Tell Ta'yinat (AS 126) (Yener, 2005: 1), which afterwards began to be excavated. The Tell Kurdu

excavations began in 1996, Tell Atchana excavations started in 2003, and Tell Ta'yinat excavations were launched in 2004. Tell al-Judaidah (AS 176), Chatal Höyük (AS 167) and Tell 'Imar al-Jadid al-Sharqi (AS 101) were chosen as sites where further excavations would be launched in the near future (Yener, 2005: 9). The Orontes Delta Survey of Mustafa Kemal University was started under the directorship of Hatice Pamir in 1999 within the framework of the AVRP, and the preliminary results have been published (Pamir, 2005). The hieroglyphic Luwian inscriptions of the Amuq Plain were studied in detail by J. David Hawkins, who published his studies in 2000 (Hawkins, 2000).

4.3 Settlement Patterns during the LBA

Surveys of both Braidwood (1937) and the AVRP team (2005) produced reliable data regarding the periods. For settlement analyses, "the Gazetteer of Sites" in the AVRP survey report (Casana and Wilkinson, 2005: 203-280) was gone through site by site, and settlements with LBA and EIA levels were distinguished (Figure 25). The information from the AVRP was juxtaposed with Jesse Casana's work (2009) that studies the MBA and LBA settlement patterns in the Amuq plain. Basing on his dissertation, Casana uses textual and architectural information to critically review the MBA and LBA settlements in the Amuq, and concludes that some sites like AS 99 (Kokarkuyu) were occupied during the MBA and not the LBA, or vice versa. Depending on these different sources of

information, a basemap was developed for the LBA Amuq, which acted as the backbone of the analyses (Figure 26).

The Voronoi diagram of the LBA Amuq (Figure 27) demonstrates a configuration that parallels LBA Altınova. A tier of settlements with larger territories runs on the exterior – i.e. the foothills – while the central area is populated by settlements clustered with smaller peripheries. Since we are not sure about the extent of the central lake in the ancient times, its borders were not marked on the Voronoi diagram. The rivers, however, seem to have played a prominent role in the shaping of the settlement patterns, as visible in the second Voronoi diagram (Figure 28). The bend of the Orontes emerges as a significant node, with Tell Atchana on its northern bank and a dense pattern in its south. These settlements may have benefited from the navigable nature of the Orontes[51]. Furthermore, geological work conducted in the Amuq revealed that, at some time in the pre-Roman period, the Orontes flowed to the north and east of Tell Atchana (Casana and Gansell, 2005; Casana, 2009: 10). If this was true for the LBA, then it would mean a dense cluster of sites bordered by the bank of Orontes and most probably acting as satellite cities to Tell Atchana.

Another indication of the Voronoi diagram is that, the areas standing outside of the courses of Karasu and Afrin may have been left unoccupied during the LBA. This could have been the case, but the MBA settlements that Casana locates in this area makes the situation suspicious. According to Casana (2009: 14-

[51] Orontes had been a navigable river throughout antiquity, which was the principal reason of Antioch flourishing along its banks. (Kondoleon, 2000: 3)

15), there are 7 sites in the area that is shown black in the Voronoi diagram. All of these sites are MBA settlements, ranking 3rd or 4th according to his "quality scale". In this scale, he assesses the data coming from the site, and makes a four-tiered categorization. The 1st category is of those MBA and/or LBA sites that have been excavated. The 2nd category is defined by a large collection of ceramics, including MBA and/or LBA diagnostics. The 3rd category settlements definitely have second millennium BC collections, but lack MBA and/or LBA diagnostics. And lastly, the 4th category presents only a small number (<5) of second millennium BC ceramics (Casana, 2009: 209). All of the 7 sites in the discussed area (26, 27, 29, 33, 35, 36, and 52) are dated to the MBA and in category 3 or 4 (Casana, 2009: 14-15). This classification demonstrates the possibility that the lack of LBA sites within the courses of the Afrin and the Karasu may really reflect an absence of sites, since the 4th category has only a small number of second millennium pottery. It may also be a research anomaly, and may be related with the absence of diagnostics. In this case, these non-excavated sites may have, by chance, not yielded any diagnostics in their surface collections (which may also be disturbed by modern agricultural activities), but may have these sherds in their stratified, yet unexcavated strata.

Nearest neighbor analysis of the LBA Amuq resulted in a clustered configuration (Figure 29). The distances of each site to its nearest neighbour were measured and recorded. These distances were then summed up to 95,38 km, and an average of 3,5325 km was reached when the sum was divided by 27, the total

site number. Afterwards, the formula $R_n = 2 \times d \times \sqrt{n/a}$ was implemented. The result was 0.8697, which corresponds to "tendency towards clustering" in the interpretation scale (Appendix A4).

Rank-size analysis was not conducted on the LBA and EIA Amuq, since the occupation areas of sites are not differentiated according to periods, but are given according to each settlement in total (Figure 25). Hence, it would be misleading to use cumulative occupation areas instead of specific periods.

Three gravity node appears in the LBA Amuq (Figure 30). One is around Tell Atchana, and the second one is very close vicinity, in the foothills inside the bend of the Orontes. These nodes can be read as manifestations of the Central Place Theory. According to this, Tell Atchana/Alalakh most probably acted as the central place controlling the flow and manufacture of goods[52] through a tier of satellite settlements. There is another concentration of settlements clustered around Çatal Höyük. This node covers the entrance of the Afrin into the Amuq, and its division into three branches. Also contained within this node is the site of Tell al-Judaidah, another site researched by the Syro-Hittite team. Both of these sites have LBA and EIA levels, and their importance in the plain reflects on this gravity node. Casana (2009: 16) also advocates the existence of larger-than-average sites fairly evenly spaced throughout the plain and sees this as evidence that these settlements had a significant position in antiquity.

[52] One example of these goods is the pottery produced in abundant numbers. The 2004 season at Tell Atchana unearthed a series of workshops with multi-chambered kilns in the SE slope of the mound, capable of producing pottery for local consumption and trade (Yener, Schloen, Sumaka'i-Fink, 2005: 48)

4.4 Settlement Patterns during the EIA

In the absence of works on distinctive pottery like Upper Euphrates' grooved ware, or detailed incorporations of textual, archaeological and settlement data like Casana's work; the EIA data set for the Amuq relied much on Braidwood's work and the AVRP's site gazetteer, and a basemap was developed (Figure 31).

The Voronoi diagram represents a similar pattern with the LBA, with a tier of large settlements in the periphery, enclosing a more densely populated plain (Figure 32). On the contrary to Altınova, there is only a slight decrease in settlement number, since the 27 LBA settlements are now replaced by 25 EIA settlements. The second Voronoi diagram that is done according to rivers (Figure 33), however, reflects a different picture than the LBA Amuq. The course of the Orontes seems to have lost the dense settlement pattern located inside its bend, although Tell Ta'yinat thrived around it. The Afrin, on the other hand, seems to have gained a momentum, with settlements spaced regularly around it.

Nearest neighbor analysis of the EIA Amuq resulted in a random configuration (Figure 34). The distances of each site to its nearest neighbour were measured and recorded. These distances were then summed up to 107.48 km, and an average of 4,2992 km was reached when the sum was divided by 25, the total site number. Afterwards, the formula $R_n = 2 \times d \times \sqrt{n/a}$ was implemented. The result was 1.01; which corresponds to a perfect "random" in the interpretation scale (Appendix A4).

Rank-size analysis on EIA Amuq was not conducted with the same reasons stated above for the LBA.

The concentration of settlements around the Afrin results in a gravity model that has three interdependent nodes, beginning from Tell Ta'yinat and ending with Çatal Höyük and Tell al-Judaidah (Figure 35). This area of the plain is settled more densely than the other areas, and the chain-like configuration seems to indicate a tier of settlements that is regularly spaced around Tell Ta'yinat. If one assumes the yet tentative, but highly convincing identification of Tell Ta'yinat with ancient Kunulua (e.g. Hawkins 2009: 170-171, Harrison, 2009: 187), this whole configuration becomes more reasonable as second-tier, or satellite settlements organized around the centralized power of Kunulua, the capital of Pattina/Unqi.

CHAPTER 5

DISCUSSION: LIMITS, POTENTIALS AND INTERPRETATIONS

The data analyses put forward in the previous two chapters were limited in their number and quality. They also suffer from problems and restrictions, along with potentials. In this chapter, I will discuss first the limits: those of the data and the analysis methods. Afterwards, I will discuss the problems posed by the specific case of the LBA-EIA transition. After constructing an awareness of these limits, I will continue with the interpretations of the spatial data, and will do a modest attempt to contextualize the LBA-EIA settlement patterns of the Upper Euphrates and the Amuq within the framework of "crisis" and survival strategies.

5.1 Limitations of the Data

As seen through the analyses in the previous chapters, the data presented by the LBA and EIA levels of Upper Euphrates and Amuq are challenging. For the Upper Euphrates, for instance, the information is gathered from the surveys conducted in 1970s as well as rescue excavations carried out throughout 1968-1991. Although the excavations produced stratigraphic sequences against which

to check survey results, the stratigraphy is not always elaborate enough to differentiate between periods. Since these areas are now submerged under dams, the chance to obtain any more primary data is lost.

Furthermore, landscape data on the Upper Euphrates area is especially restricted. Conducted during the 1960s and 1970s as salvage projects, the major focus of these surveys was retrieving as much archaeological data as possible. However, it is important to state that the Upper Euphrates is hardly the only case with such problems. The 1980s were the time that landscape was introduced as a paradigm into archaeology, with the development of methodological approaches like "nonsite", "off-site", and "distributional" archaeology (Anschuetz, et al. 2001: 172). Before that decade, settlements have often been investigated as discrete entities, and archaeologists have focused on sites and the reconstruction of sites, rather than considering the broader picture of how they might fit into local, regional and wider networks. Inter-site relationships tended to be underemphasized, relationships between settlements and the surrounding landscape also received little attention, and site distributions were generally treated as static patterns to pinpoint extant remains on a map (Sollars, 2005: 252).

The Amuq region presents a better established case in this sense, since especially the geo-archaeological surveys conducted by Tony J. Wilkinson are filling an important gap.

5.2 Problems and Potentials of the Analysis Methods

The analysis methods briefly outlined in the Appendix have their own specific and general problems and potentials, which did not allow all of them to be employed in this thesis. In this section, the specific pitfalls of each model will be presented first, and then the limitations shared by all of them will be discussed.

First, some models regard the setting around the settlements as featureless and homogeneous planes, without taking into consideration the elements of the landscape. The Voronoi diagrams and the Rank-Size analysis do not consider the vital topographical elements that shaped the lives of the inhabitants. However, ironically enough, since this type of data was not available especially for the Upper Euphrates, these two methods turned out to be the most efficient forms of analyses in this study.

Second, some models conceptualize the settlements as single points in space, all in the same size and character. Mostly felt in the Voronoi diagrams and the Nearest-Neighbour Analysis, this approach may work well with statistics, but falls short of rendering the full characteristics of settlements. Vital to all archaeological sites is the hinterland, which these methods cannot model. Although Voronoi diagrams are thought to model the periphery around a site, the homogeneous and egalitarian boundaries that they project hardly reflect the reality. For this reason, I re-defined the peripheries of sites with rivers in Voronoi diagrams. Since the three plains in this thesis (Altınova, Karababa dam area and

the Amuq) are brought to life with the rivers that carve them into different regions, it is highly possible that these rivers were major determinants in the lives of the ancient dwellers.

Related with this problem is the third phenomenon, the handling of a whole region/area in which the sites are located. Models devised on the distance between sites, i.e. Voronoi diagrams and Nearest-Neighbour Analysis, need to be carried out in the central areas of the regions, since the samples from the edges can alter the results in a negative way (Cliff and Ord, 1975: 306). However, one cannot always do this in reality. It is possible to leave out the peripheral points if all the points have the same value in a data set. However the archaeological setting presents sites as points, and one cannot leave Korucutepe, Tell al-Judaidah or Lidar Höyük outside of the analysis, knowing how important settlements they were for their regions.

Lastly, some models work on population sizes. This is not a problem with today's settlements, where we have census data, but in the specific case of archaeological sites, the concept of population is problematical. Echoed in the Rank-Size Analysis, population data needs at least to be replaced with settlement size, which was done within the framework of this thesis.

Three shortcomings are common to all the models used for settlement patterns in archaeology. First is the fact that all of them are derived from other fields of scholarly research, and used without the necessary adaptations. Gumerman and Phillips (1978: 187) harshly criticize the way in which

archaeology borrows its models from other disciplines, without considering their original context. According to them, such rental concepts in the end turn out to work in some situations and not working in others. It becomes a subjective decision to decide which model can work in which particular circumstances. Second, the effects of destruction are never considered. Site formation and post-depositional processes, especially destruction, can have a major effect on the spread of the archaeological material, its visibility on the surface and thus its contribution as the determinant of the size of settlements. Furthermore, this material and its scatter are not the results of one contemporaneous moment in history, which can give us a secure settlement area (Fletcher, 1986: 59). Lastly, there can be pitfalls related with the nature of the data. Archaeological work tends to be biased towards more compact and easily recognizable sites, while it can ignore or simply not recognize more dispersed settlements. Thus, the more scattered and nebulous aggregates of inhabitation can be underestimated or not investigated at all (Fletcher, 1986: 60).

5.3 Problems Posed by the LBA-EIA Transition

Apart from the inherent pitfalls of the above-mentioned methods, there are also limitations related to the specific case of the LBA-EIA transition in the Upper Euphrates and the Amuq Valley.

The first is the "contemporaneity problem" (Schacht, 1984), or the "synchronistic paradigm" (Plog, 1973), which is related with the basic

assumptions of the discipline of archaeology. On the contrary of modern societies, which can be observed in real-life with regards to their existence, archaeology assumes that all components of a phase are contemporary, although this may not always be the case. The synchronistic paradigm presents settlement patterns as appearing at the beginning and lasting to the end of every phase. Although this is a fundamental assumption that archaeology works on, it is important to be explicit about its effects on periods of transition; since it marks the transition as being *the* point in which the whole settlement reorganizes (Dewar, 1991: 605). This might be one of the chief reasons of our sharp conception of a transition, which has clear-cut limits, i.e. the negatives of well-defined phases.

Second, none of these models are able to address a process of abandonment, which may be tied in with periods of crisis. 'Abandonment processes' include behaviour such as deliberate concealment or caching of tools, dismantling of structures, and the interruption of normal disposal patterns (Schiffer, 1987: 89-98; Cameron, 1993: 3). However, "settlement" patterns, in essence, are designed to provide insights for the processes through which people settle, by determining a catchment area to extract raw materials and sources, or by staying close to earlier settlements but leaving a "social distance" between them. However, in times of crisis, these processes may be operating in the reverse direction. People may be abandoning settlements in the reverse order by which they settled; i.e. leaving the newest or the farthest locations first. The opposite may also be true – most

"attractive" settlements may have been left first, while inhabitation can shift to marginal areas. Such complex procedures are impossible to explain by methods that treat sites as points in space. However, "the circumstances surrounding abandonment, such as speed, degree of pre-abandonment planning, or anticipation of return" (Cameron, 1993: 3) can be modelled, but again, not with the models devised until now.

5.4 Potentials and Interpretations

Being aware of the above mentioned limits, but by looking for the potentials, one can deduce the following interpretations revolving around various concept twins.

5.4.1 Density vs. Scarcity

LBA in the Altınova region was a period of dense occupation. A total of 28 settlements are encountered in the plain proper of 132 km^2, with the mean ratio of one settlement per 4.7 km^2. This exceeds the density of any other period.

This dense occupation pattern corresponds with Altınova's incorporation into the Hittite Empire, as the state of Išuwa. Hittite texts mention Išuwa as the region corresponding roughly to today's Elazığ region, bounded by the river Murat in the north, and the Euphrates in the east (Klengel, 1968: 63). The clear location of Išuwa is provided by the account of campaigns by Shalmaneser III,

describing it as the land immediately south of the river Arsanias (modern Murat Su), lying between the Euphrates and the beginning of Tigris (Garstang and Gurney, 1959: 40). The first mention of Išuwa in Hittite texts is in the text KUB XXIII 11 (CTH 142), which dates to the period of Tudhaliya II (Gurney, 1973: 678). Išuwa gained more importance during the reigns of Hattušili III and Tudhaliya IV, since the extending power of Assyria turned the Elazığ region into an important buffer zone (Yiğit, 1995: 245).

It is during this important period of Altınova's history that we read such a dense settlement pattern. However, it should also be noted that this density is comparative, and it is in the context of Altınova. In fact, one settlement located every 4.7 km^2 also has another implication; these sites may hardly be larger than villages. Furthermore, the "random" result of the nearest neighbour analysis makes it hard to define a "capital" for the plain during this period. Although Norşun Tepe has a significant occupation area with 8.2 ha, it does not have a settlement agglomeration around itself to ensure the quality of a central place. There are reasons to think that Norşun Tepe acted as the primary city of Altınova during some of the earlier periods. It is safe to assume that Norşun Tepe acted as a regional center at least during the EBA period. A monumental structure, called the "Pithos building", which had administration, storage, production and residential quarters, led the excavators to pronounce Norşun as the primate city of the region during this period (Hauptmann, 1974: 74). However, the beginning of the second millennium is represented with only a few pits and floors in Norşun

Tepe. Hauptmann suggests, during this time the major settlement of the plain shifted to Korucutepe (Hauptmann, 1970: 112).It is possible that Korucutepe continued to be an important center during the LBA. Large amounts of animal remains from the site confirm this view, since Hittite Empire period is the best represented level, with over 50% of the faunal finds (Boessneck and Driesch, 1974: 109). Furthermore, 12 clay bullae yielded from a shallow pit in O21 belong to a type best known from Boğazköy, and have been dated to the 13th century BC by Hans Güterbock. These bullae belong to "kings", but not Hittite "Great Kings", and have evoked the view that these rulers were residing either in Korucu Tepe or another city in close vicinity (Güterbock, 1973: 135-136). Hence, one might propose that LBA was a time during which Norşun Tepe gathered some of its elder might, while Korucu Tepe remained to be an important center from the MBA.

LBA in the Amuq was also a period of dense occupation. A total of 27 settlements populate the plain, which covers an area of 1781 km^2, and has the density of one settlement per 65.96 km^2. Tell Atchana/Alalakh is seen as the primary settlement of this period. The city emerged as a regional power already in the 19th century BC, as a vassal to the Amorite kingdom of Yamhad (Yener, 2005: 101). Tell Atchana is distinguished by the tier of settlements formed by AS 134, AS 135, AS 120, AS 84, AS 286, AS 283, AS 252 and AS 253, most probably staying inside the course of the Orontes along with Tell Atchana. This configuration signals the existence of a central place, a quality that Norşun Tepe

did not have in Altınova. All of these strengthen the view to see Altınova as a region organized in rural terms, with regularly spaced small settlements that are tied to a larger settlement that does not have a valid urban character.

When the EIA begins, there is a drastic drop in settlement density in Altınova. The number of settlements is 10, and the density drops to a settlement per 13.2 km^2. There is again no indication of Norşun Tepe as a central place from the settlement distribution, although it continues to be the site with the largest occupation area. The EIA in Altınova does not coincide with any integration of central power (contrary to the LBA Išuwa), nor it is a time of self-sufficient and coherent state.

The EIA in Karababa dam also hosts a scarce settlement pattern. Represented by only 9 settlements in an area of 299 km^2, it has a density of a settlement per 33.3 km^2. The denser pattern around Samsat may be drawing attention to the importance of the site.

In the Amuq, the density does not show a drastic change between the LBA and the EIA. 25 sites now populate the plain, for a density of a settlement per 71.24 km^2. For this period, Tell Ta'yinat has been viewed as the chief settlement in the plain, and has tentatively been identified with Kunulua, the capital of the Iron Age kingdom Patina/Unqi (for a recent discussion, see Hawkins, 2009: 170-171). This is a powerful regional kingdom, associated with the Land of Palistin[53]. This kingdom was ruled by a series of kings with Hittite names and it is possible

[53] For the reading of Palistin, and the former *Wadasatini*, please cf. Hawkins, 2009: 171-172.

that they had direct ancestral links with the royal dynasty (Harrison, 2009: 187). Although, Tell Ta'yinat lacks a dense settlement pattern in its immediate vicinity like Tell Atchana, it stands on the edge of a series of dense settlements situated along the Afrin, that terminates in a node with Çatal Höyük and Tell al-Judaidah. This reflects a possibility to see this area as the most centralized and most respondent to the authority exerted from Tell Ta'yinat.

Although the central place in the plain changes, the dense pattern in the eastern opening of the plain towards the Afrin valley continues. This hints that the two sites of Tell al-Judaidah and Çatal Höyük were important sites during the LBA and the EIA.

5.4.2 "High" vs. "Low"

LBA settlements in both Altınova and the Amuq have the quality to have the larger sites on the periphery and smaller territories enclosed in the center. This seems to be related with the landscape, since the foothills were more scarcely occupied on the contrary to the smooth land of the plain. However, in the EIA, the agglomeration in the center disappears in Altınova, while a dense occupation pattern continues in the Amuq. For Altınova, this might be taken as either a sign that areas on the foothills were preferred more during the EIA, or that the fertile land between the two courses of the Euphrates was left unoccupied deliberately, on the contrary to the LBA. This may even hint a pattern of abandonment, with the occupants leaving the sites in the plain first.

In Karababa, a similar picture emerges. The Euphrates cuts a deep valley in this area, and there seems to be uniformity regarding the elevations of settlements. The elevations change between 410-470 m (T51/33-Karadut Mevkii: 410 m, T52/7-İsmail Harabesi: 420 m, T51/40-Lidar Höyük: 430 m, T51/14-Samsat: 430 m, T51/10-Alikan: 440 m, T52/15-Horis Kale: 460 m, S52/11-Tille Höyük: 470 m), while S52/14-Komu Rej (520 m) and U51/8 Tatarhöyük (530 m) emerge as the two extremes (Özdoğan, 1977: 80, 82, 85, 100, 109, 112, 119, 162, 178).

In both of these areas, this pattern also follows the location of the springs. In Altınova, the edges of the plain are endowed with springs (Whallon, 1979: 274). This closely echoes the EIA pattern in the plain. The abandonment of the central areas with no springs may hint that the organization or the connection between the settlements that enabled the handling of water throughout the plain was lost.

On the other hand, the Amuq does not seem to be affected from the end of the Bronze Age as harshly as Altınova did. The settlements are dispersed on the foothills as they are on the lowland. The emergence of a centralized power in the form of the kingdom of Patina may have changed the situation for the Amuq.

5.4.3 Continuity vs. Discontinuity

The EIA in Altınova is represented by 10 sites. Out of the 8 settlements of the LBA Altınova with occupation areas more than 1 ha, 7 survived into the EIA

(Norşun Tepe, Tepecik, Değirmen Tepe, Körtepe [O55/8-9], Tülin Tepe, Korucu Tepe, Körtepe [O55/4]), with the only exception being Kazancı. Two other EIA settlements from Altınova (Könk and Kamaksı Mevkii) also have LBA levels. The only other settlement in the area in the EIA is Kövenk, not mentioned and numbered by Robert Whallon (1979) during the Keban survey, but incorporated by Karin Bartl (2001) as a site with grooved pottery. Since Kövenk is incorporated from another source just dealing with the EIA settlements in the area, it might also be possible that this site also has LBA levels.

In the Amuq, continuity and discontinuity are harder to track. When the LBA and EIA settlements in the Amuq are mapped, the following distributions emerge:

17 sites have LBA levels without following EIA material: Dana Höyük (AS 9), Güzel Höyük (AS 18), Yanık Tepe (AS 37), Kemalağa Çiftliği (AS 186), Tell Musharrafah (AS 163), Ermeneia (AS 173), Tell Bahlilah (AS 133), Halak Tepe (AS134), Tulail al-Sharqi (AS135), Tell Atchana (AS 136), Eskideğirmen Tepe (AS214), Tell Hijar (AS 180), Tomsa Höyük (AS 283), Zengin Tepe (AS 286), Tarla Höyük (AS 252) and AS 253.

15 sites have EIA levels without preceding LBA material: Kirmitli Höyük (AS3), Koyuncu Höyük (AS15), Soğuksu Höyük (AS17), Tell Maltah (AS 28), Tell Kızılkaya (AS36), Akpınar Höyük (AS52), Tell Uzunarab (AS84), Karahöyük (AS95), Tell al-Terzi (AS104), Tell Ta'yinat (AS126), Tell Salihhiyah (AS129), Karataş (AS 151), Kokarkuyu (AS 99), Tabarat Maştepe (AS 103) and AS 168.

10 sites have material from both levels: Paşaköy (AS11), Çataltepe (AS16A), Tell Baytarlı (AS40), Tell Keçebey (AS75), Boztepe (AS89), Tell Mirmiran (AS120), Ayrancı Doğu (AS152), Çatal Höyük (AS167), and Tell al-Judaidah (AS176) and Karatepe (AS86),

As these lists infer, the Amuq presents a balanced account of continuity and discontinuity. It might be clearly seen that the area that the Afrin enters the Amuq is a nest of sites in both LBA and EIA, which was also defined as a "gravity node" during both periods. Two sites in this region, Tell al-Judaidah and Çatal Höyük have received extensive research during the Syro-Hittite Expedition of the Oriental Institute (Braidwood and Braidwood, 1960; Haines, 1971).

The major center of the LBA in the Amuq, Tell Atchana, did not continue into the EIA, while the EIA capital Kunulua (tentatively Tell Ta'yinat) lacks LBA material. The explanation for this interchange can be searched in the following phemonon of solitarity.

5.4.4 Solitary vs. Dual Settlements

Shifting locale of settlement activity is a common phenomenon during the LBA and the EIA. S. Mazzoni (1994: 324-325) summarizes four models of settlement articulation in her account of Luwian and Aramaean new foundations. She sees these models as generated by a collective Syro-Aramaean culture, which is the hallmark of the EIA cultures of Southeast Anatolia and Northern Syria.

Her first model, the short-distance transfer, occurs where the administrative and centralized functions shift to the new foundation, because of abandonment or the decline of the main center. Examples of this model are: Domuztepe- Karatepe, Tell Atchana-Tell Ta'yinat, Tell Fekheriyah-Tell Halaf, Tilmen Höyük-Zincirli (Mazzoni, 1994: 335).

This phenomenon surely occurred in the LBA-EIA transition in the Amuq. For whatever reasons, the capital was abandoned, and its functions were transferred to the nearby site. The same situation occurred in Altınova in the beginning of the second millennium BC, but we do not have enough data to discuss if it happened again during the turn of the next millennium.

5.4.5 Crisis vs. Survival Strategies

The interpretation of the settlement data draws attention to the importance of the sites viewed in the secondary rank in their regions. Norşun Tepe has always been considered the primary settlement in Altınova, and the scholarship canonized Norşun Tepe as the only site presenting uninterrupted LBA-EIA sequences in this plain. The leading settlement of the Karababa Dam area has been viewed as Samsat, the later capital of Kummukh. In the Amuq, Tell Atchana and Tell Ta'yinat have been receiving much attention, as the LBA and EIA capitals of the region. However, the interpretations above show that there were also other sites settled during the transition and they should be viewed in

conjunction with the primary settlements to understand the nature of the transition.

The second tier of settlements in these plains was discussed by Claudia Glatz in a different context. After discussing pottery, settlement developments, glyptics, and landscape monuments, Glatz (2008: 127-139) concludes that Korucutepe and Tille Höyük are special cases in their sites. Korucutepe had the influence of the Central Anatolian Plateau already visible in the first half of the LBA, before the region's incorporation in the Hittite realm. Glatz shows the wide-spread use of Hittite repertoire in Korucutepe as evidence for this phenomenon. She also suggests that Tille Höyük, on the other hand, experienced a cultural shift in the LBA, and some of the most characteristic Hittite repertoire is lacking from the site. This might have been a suspicious conclusion in 2008, but in 2010 we know now that this indeed is the case. G. Summers, in his reassessment of the Tille material[54] suggested that Hittite Imperial wares were absent from the site, and from the Adıyaman region in general. He concluded that the "footprint of the Hittite Empire will turn out to be lighter in this area".

All of these claims, then, can be summed up in the concept of survival strategies. Altınova, Karababa dam area and the Amuq seems to have developed different survival strategies against the regional crisis at the end of the Bronze Age. Being part of an established regional power throughout this period, the EIA

[54] G. Summers "Some Implications of Revised Dates for the Late Bronze and Early Iron Ages at Tille Höyük". Paper presented in the Symposium *Across the Border: Late Bronze-Iron Age Relations between Anatolia and Syria,* 31 May-1 June 2010, İstanbul

did not exercise the same amount of power on Altınova. In Altınova, a balanced power scheme between Korucutepe, with more Central Anatolian influence, and Norşun Tepe, with more local characteristics, was the result. In the Karababa dam, we are now less secure about the nature of the LBA with the new suggestions non-Hittite character, and consequently about the transition. In the Amuq, the power play between Tell Atchana and Tell Ta'yinat was buffered by another dual, yet continuous settlement in Tell al-Judaidah and Çatal Höyük. Thus, the implications of the settlement data are limited, but nevertheless signal one important conclusion: with the breakdown of central authorities, each region was left to its own assets for a period of crisis. During this era, each region seems to have developed survival strategies. The character of these strategies, however, can only be understood after reviewing the archaeological data from the selected plains.

5.5 The Archaeological Perspective

5.5.1 Altınova

The settlement data presented above poses a picture of continuity during the transition from the LBA to the EIA. However, when one looks at the archaeological record, a different picture emerges.

The almost total absence of written documents is the most dramatic evidence for this other facet of the transition. Apart from the bullae found in Korucutepe (Güterbock, 1973), the seal impressions from Lidar Höyük (Sürenhagen, 1986; Hawkins, 1988; Hawkins, 2000: 574), Samsat inscriptions (Hawkins, 2000: 352-354) and Tell Ta'yinat inscription fragments (Hawkins, 2000: 365-375) written material is lacking in the areas under study. This absence, on the one hand, renders any interpretation unfounded, while, on the other hand, it is evidence by itself and suggests an abrupt break at the end of the Bronze Age.

For the period especially between 1200-1000 BC, architectural remains are very unsubstantial and are mainly in the form of flimsy walls and pits. A survey of the architectural remains from the sites that yielded relatively more substantial architecture is, just as the absence of writing, an evidence by itself and calls for a critical perspective towards settlement pattern analyses.

In Altınova, Korucutepe Strata CXXXII-CXXXV are dated to EIA (ca. 1200-800 BC) by means of pottery and radiocarbon dates. Although later strata are intrusive, the Western slope presents a significant succession of materials for the nature of the transition in the mound (Figure 36). In the trenches H17 and H18; Stratum CXXXII is dominated by LBA pottery in the amount of 85%, and is succeeded by the flimsy walls of Stratum CXXXIII. A larger structure that constitutes Stratum CXXXIV (Figure 37) yielded handmade or slow-wheel pottery (Figure 38). The stratigraphy represented in the H-I 18-19 junction

parallels H17-18. Here, a house with handmade pottery is built so closely on top of a LB II structure (Figure 39) (van Loon, 1973: 373).

These finds invoke the image of an EIA culture that succeeded the LBA levels after a short or non-existing break, but without substantial architecture. The radiocarbon dates from the site put the end of the Bronze Age to c. 1200 BC. The same dates also locate a short interval of only 50 years between the LBA and the EIA occupations (van Loon, 1973: 372, 375). However, the excavators also evaluate the EIA culture as radically different from that of the LBA. According to van Loon, (1973: 373) "The radiocarbon dates indicate that this relatively short occupation with possible cultural ties to the Lake Van area came almost immediately after the cessation of the LBA conditions". Van Loon sees intrusive pottery, i.e the grooved ware, as evidence for this phenomenon, as also discussed in the section 3.4.

Iron Age levels at Norşun Tepe are not disturbed by Roman and Byzantine structures, contrary to Korucutepe and Tepecik (Hauptmann, 1970: 104). This situation locates EIA architecture of Norşun Tepe in a secure condition. In this case, one can assume that the nature of the architectural record is in accordance with the original situation and was not erased/disturbed by later strata.

The LBA architecture of Norşun Tepe is not monumental, but at least substantial. Since the final publications of the site never appeared, one can not appreciate the full extent of the LBA occupation on the site, but H. Hauptmann's seasonal reports give a basic idea for the LBA architecture of Norşun Tepe. For

instance, a large structure was excavated in Q17/18 and P 18 (Figure 40). This is a house with two spaces in the south and three rooms in the north (Hauptmann, 1972: 91). In the mound proper, the end of the Bronze Age is marked by charcoal, mudbrick fragments and a thick burnt layer with a significant amount of ash (Hauptmann, 1970: 109). This phenomenon is examplified in trenches Q31c and O21. In Q31c, a house dated to the LBA was destroyed by fire (Hauptmann, 1972: 95). In O21, an LBA building that yielded many small finds dating to the Hittite Imperial Period also had a destruction level (Hauptmann, 1974: 73).

The EIA finds in Norşun Tepe have been yielded from the Acropolis, the Western Slope, the Southern Terrace, and the southern outskirts of the settlement (Figure 41). In the Western Slope, only J/K 18/19 yielded an occupational layer dating to the EIA and it terminates in a destruction level (Hauptmann, 1972: 98).

On the acropolis, Q18 provided the remains of a significant building that featured wheel-made Hittite ware along with grooved pottery. Hauptmann identified this building as "transitionary" and noted that this building might have been used during both the LBA and the EIA (Hauptmann, 1972: 91). The trench O/P 19 had many pits with grooved pottery (Hauptmann, 1972: 91; 1969/70: 58). In the squares O20, O21, O22 and P20 many pits with grooved pottery were excavated (Hauptmann, 1974: 72).

The Southern Terrace is the area with most activity during the EIA of Norşun Tepe. Squares Q28 a-b yielded a wall of southeast-northeast orientation.

The wall, apparently abutting one side of a road bordered with walls on two sides, was dated to the end of the EIA by means of pottery found inside the street (Hauptmann, 1969/70: 55; 1971: 76; 1972: 95). Trenches Q/R 27-29 yielded the plan of a house with pits plastered inside for storage (Figure 42, Figure 43) and a kiln (Figure 44).

In squares Q/R 32/33, a courtyard measuring 22x10 m was excavated and a house with three rooms was found (Figure 45) (Hauptmann, 1971: 76).

P28 c/d provided a mud-brick wall of a "village house" with 4 pits outside the structure. These pits were full of grooved pottery (Hauptmann, 1974: 77). Similarly, R/S 26/27 yielded mud-brick walls of a house with 2 kilns and pits with grooved pottery (Hauptmann, 1974: 77). An EIA "village house with courtyard" had mud-brick walls overlaid with stones (Figure 46). The structure, which was unearthed at N/O 27-29, has a packed earth floor and its eastern wall yielded a kiln with a lot of pottery resembling grooved ware (Figure 47) (Hauptmann, 1976: 50). Lastly, N/O 28 yielded unsubstantial mud-brick walls and more than 40 pits that contain material from the LBA up to the MIA (Hauptmann, 1982: 32).

When the architecture of the southern terrace is viewed completely, the emerging picture is one of a complex of private houses that developed organically. Level 2a, especially, enables us to derive whole plans of structures. However, there is no uniform scheme that emerges from this configuration (Figure 48). Each of the room complex has a different orientation. The courtyards have partial indications that they may have partly be paved with flagstones. Small rooms with

oval or rhomboid fire places were interpreted as kitchens (Bartl, 1994: 176). House 7, especially, demonstrates the organic nature of the EIA settlement. This house gives the impression that rooms were developed without planning, or maybe even simultaneously, according to the needs of the settlers. Most of the resulting spaces are clumsy-looking trapezoids.

In the southern outskirts of the site, a large number of unsubstantial wall fragments were unearthed in the trenches M/R 44-49 (Hauptmann, 1971: 77). The only find worth mentioning from this area is a pot burial excavated in O44b-a. The pot contains the burial of an infant and a bowl with horizontal grooves covers its rim (Figure 49) (Hauptmann, 1972: 96).

In Norşun Tepe, it appears that an EIA population was mainly nucleated in the southern terrace. This population does not seem to have the means, or the capability, or the necessity to build a planned settlement with an urban character. Hauptmann (1971: 76) dates this period to between c.1000-800 BC. Hence, if we accept this dating, we have to admit that the excavations could not unearth any remains that cover the period between 1200-1000 BC, except the "transitionary" structure in Q18. Furthermore, if Hauptmann is correct, this would mean an abandonment of the site for almost two centuries, before the EIA culture arrives at the site. Korucutepe, on the other hand, offers the reverse picture where the LBA strata are immediately followed. Furthermore, Korucutepe offers dates that are correlated with radiocarbon dating. However, the nature of the architecture at both sites is strikingly similar with walls without planned orientations, over-

abundant pits and grooved pottery. In this case, one should be skeptic about the dating of the EIA at Norşun Tepe.

5.5.2 Karababa Dam Area

In the Karababa Dam Area, the difficulty for studying EIA architecture is twofold with the scarcity of material and publications.

The final publications of Lidar Höyük never appeared, but some information about the LBA and EIA architectural levels have been incorporated into the unpublished PhD dissertation of U. Müller and his consequent articles.

In Lidar Höyük, finds of the period between the fall of the Hittite Empire and the Hellenistic period were found in Strata <7> and <6>. These layers were unearthed in the trenches of E and F 44 in the step cutting in the North of the Hill and the flat H 38-40 in the Centre, in a state greatly disturbed by later structures. However, it was possible to investigate a whole continuous stratigraphy from the 13th century BC up to the 6th century BC, in the large area of Q, R, S 44/45 (Müller, 1999: 123-124).

Stratum <7> covers the earliest phase of the EIA settlement at Lidar Höyük after the downfall of the Hittite Empire and continues until 1110 BC. This is the stratum that yielded the Kuzi-Tešub seal impressions (Müller, 1999: 124; 2003: 139). This level is densely occupied, but without any symptomatic or planned architecture. An alley is distinguishable in the centre, between joint dwelling units on both sides (Müller, 1996: 23). Although this architectural layer is dated

to the EIA, the pottery closely follows the LBA traditions and no renewal in the forms is visible (Figure 50) (Müller, 1999: 124).

Building Phase <6e2> is the oldest layer of the Stratum <6>, and is dated to c. 1110-1040 BC on the basis of pottery finds (Müller, 2003: 139). <6e2> differs from the previous layer <7> in terms of system and orientation (Figure 51). With this building phase, a tendency for planning appears for the first time in Lidar Höyük (Müller, 1996: 23). This is also the level that new pottery is introduced to the site and is begun to be used along with the existing traditions. The intrusive pottery customs include the handmade grooved ware (Müller, 1999: 124).

In Tille Höyük, the dating of grooved pottery is much later[55], between 900-700 BC stratigraphically, although the material is very similar to the wares from Lidar Höyük and Altınova (Müller, 2003: 139). The EIA levels at Tille, on the other hand, begin in the 11th/10th centuries BC and displays architecture paralleling Altınova with village-type building complexes that often have open areas between them reserved for storage pits (Blaylock, 1998: 115)

In sum, there are two important phenomena for the EIA in Karababa Dam area. First, strata with grooved ware do not reside directly upon the LBA levels, although a shift is evident from the change in architectural tradition. Second, there is inconsistency between the dates of the grooved ware in the region up to two centuries, which is striking for a patch of land in the size of Karababa Dam area. However, maybe the only intact information that one can extract from the

[55] The final publication of the Iron Age levels of Tille Höyük appeared just as this thesis was being completed. Hence, I could go no further than to acknowledge the existence of this publication.

above data is the nature of the EIA architecture with "village-like" features echoed in walls of different orientations and abundant numbers of storage pits.

5.5.3 Amuq

In the Amuq, the remains of Amuq Phase N (1200-1000 BC) differ much from the MBA and the LBA. The monumental architecture exemplified by the "fortress" building and the palace of Alalakh does not continue into the EIA.

Among the long sequence of Tell Atchana/Alalakh stratigraphy, Levels 1 and 0 are important markers of the end of the Bronze Age. Level 1 covered a period of 90 years, with two rebuilding levels in Temple I. This level is dated to the late 13th, early 12th centuries BC by relying on the LH IIIA and LH IIIB imported pottery. The last level, Level 0, is a short settlement from the 12th century BC that yielded traces of a wall with a massive tower (Yener, 2005: 103).

Level I shows plans of buildings that are oriented towards the northwest (Figure 52). The Temple holds a central place in this configuration, while the overall scheme gives the impression of planned development. Level 0 has very fragmentary traces of architecture, which are hard to interpret (Figure 53).

In Çatal Höyük, the most significant achievement of seems to be the fortification wall (Figure 54) (Haines, 1971: 4). However, the means of dating for this wall are based on elevations, and the fact that it is situated right under the wall stratum dated to Phase O, also juxtaposing which is based on elevations, and the fact that it is under the Phase O wall. Considering how hard it is to date

fortification walls, one should be critical about the dating of the so-called Phase N fortification of Çatal Höyük.

There are, however, Phase N finds coming from all sectors of Çatal Höyük. In Area I, Levels 10-7 presented Phase N material. In trench W15, superimposed finds of similar layouts from Levels 10-8 and the pottery oven dated to Level 10 may suggest a small complex of private houses. The trench V13 yielded two occupation strata from a private house dated to Levels 9 and 8 (Figure 55) (Haines, 1971:5).

In Area II, Levels 11-9 presented Phase N finds. Level 11 only has unsubstantial walls and fragmentary patches of paving (Figure 56). Four pits are associated with this level, but they are not securely dated, and hence may be later intrusions. The trench N 13/14 provided poor remains of two houses dated to Level 10 (Figure 57). Level 9 remains were yielded from N13/14 in the form of a house and a circular bin (Figure 58) (Haines, 1971: 13-14).

In Area III, Phase N remains were found only in the trench Q8. No structural remains or floors were recorded, but levels 10 and 9 were attributed to Phase N, apparently through elevations (Haines, 1971: 17).

In Area IVa, Phase N was encountered only in sqare J9. Three rooms and a pebble paving were yielded (Figure 59) (Haines, 1971: 18). Area IVb yielded Phase N material from square H4, where unbaked-brick walls were found (Haines, 1971: 19-20).

Area IVc did not produce any Phase N material (Haines, 1971: 21).

Area IVd yielded Levels 6 and 5 of Phase N. In square L3, only a wall and some associated earth were found. Level 5 produced unbaked-brick walls and packed earth floors, none substantial (Haines, 1971: 22).

Area V produced material from Levels 4-2a belonging to Phase N. Level 4 in square P4 consists merely of an unbaked-brick wall (Figure 60). Level 3 in the same square yielded unbaked-brick walls and a circular pit (Figure 61). Similar walls were unearthed in Level 2b. Haines associates Level 2a with the exact time or just before the building of the fortification wall. A floor of stone paving, an ash layer and other walls also belong to this level (Figure 62) (Haines, 1971: 23-24).

Area VI had Phase N material in portions of T8 and T6. The remains include unconnected wall fragments, a pit with tamper-earth floor in T8 and a part of the fortification wall in T6 (Haines, 1971: 26).

In Tell al-Judaidah, Phase N is represented with the Levels 11-9 in the squares D-F 7-10. Level 11 consists only of a paving of small stones and pebbles (Figure 63). Level 10 occurred in F7 in the form of a stone wall (Figure 63, Figure 64), while walls of private houses were encountered in the squares F8-9 (Figure 65, Figure 66). Level 9 represented rubble walls only one course high, as well as large stones and unbaked-brick walls (Figure 63, Figure 64). The rest of the trenches did not yield any Phase N material (Haines, 1971: 26-27).

Contrary to the almost temporary nature of the Phase N architecture in the Amuq, Phase O is a time of flourishing and revival. Since Phase O is very broad and covers half a millennium between c.1000-500 BC, it would be misleading to

use this wide span from the Syro-Hittite expedition publications, unless elaborated by further research. The newly re-initiated excavations at Tell Ta'yinat provide this opportunity.

In Tell Ta'yinat, Oriental Institute excavations uncovered five building periods dating to the period between early 9th century and late 6th century BC (Haines, 1971: 66). Some Hittite glyphs found under the Building II and the glacis on the east side of the building date the first building period to c. 875-825 BC (Gelb, 1939: 39). An inscribed Aramaic sherd found in floor 2 of Building I dated the third Building Period to c. 720-680 BC. These two periods, in turn, provided the terminus post quem and terminus ante quem for the second building period, hence dated to c. 825-720 BC (Haines, 1971: 66).

It is possible to partially juxtapose these building periods with the Amuq Phase O (Syro-Hittite, c.1000-500 BC), which is further elaborated by Swift into Oa (c. 950-900 BC), Ob (c. 900-800 BC), Oc (c. 800-725 BC), Od (c.725-550 BC) by relying on the techniques of red-slipped burnished ware (Swift, 1958: 39-41).

Excavations in Field 1 of Tell Ta'yinat were initiated in 2004, and the strata they produced were termed "Field Phases" to distinguish them from the "Building Phases" of the Oriental Institute Excavations. Field Phases 6-3 are dated to the 12th and 11th centuries BC (Harrison, 2009: 180).

From these strata, Field Periods 6-4 and the first building period fall into the period examined in this thesis (Table 3). FP 6 is the earliest, and produced large storage silos, with smaller pits scattered around them. FPs 5 and 4 yielded

rectilinear structures (Figure 67), while the remains in FP4 were badly damaged by the second building period (Harrison, 2009: 180).

The remains of the first building period are better preserved. Building XIII has the plan of a North Syrian bit hilani (Figure 68).

The entrance of the building is situated on the south side, and it is through a porch facing the courtyard. The rear side probably hosted an access through the narrow anteroom to the principal room of the building. From there, it is possible that the entrance led to the small rooms on either side of the anteroom and the rooms at the rear (Haines, 1971: 38). Building XIV (Figure 69) does not have a plan as complete as Building XIII, which renders any definite comment about its style impossible (Haines, 1971: 39). However, it is possible to see it as part of a complex facing a central courtyard, along with Building XIII (Haines, 1971: 64).

In the overall, the Amuq presents relatively low quality material for the EIA in the plain. The Phase N levels at Çatal Höyük and Tell al-Judaidah are poor in size and character when compared with the Phase M and Phase O strata. The latest LBA levels at Tell Atchana are also unsubstantial. Tell Ta'yinat, however, presents a significant corpus of architecture dating to the 10th century. This coincides with the EIA Kingdom of Pattina/Unqi in the Amuq and is in accordance with the view of Tell Ta'yinat as Kunulua, the capital of this kingdom. Still, this leaves the period between 1200-1000 BC poorly represented in the whole plain, which is a phenomenon in accordance with Altınova and Karababa Dam area.

CHAPTER 6

CONCLUSIONS

In this thesis, I tried to analyze the settlement data for the LBA-EIA transition from the Upper Euphrates and the Amuq regions, and to correlate this data with archaeological finds.

I started with a revision of the contexts of the period, including chronology and the changing ethno-political scene. Then, I proceeded to the regions of Altınova, Karababa Dam area and the Amuq. After introducing their geography and research histories, I explained the results of the settlement pattern analyses I conducted on these areas. Afterwards, I discussed these data with regards to continuity and survival strategies and incorporated the perspective of archaeological finds.

In this thesis, I reached the following conclusions:

1. The EIA in the Upper Euphrates and the Amuq regions was not a period of complete discontinuity, but of a cultural change. Settlement continues in each region, but its form changes.

More nucleated and planned settlements are replaced by sites more rural in character. There are no substantial architectural finds, but only patches of wall fragments and large amounts of storage pits.

Changes in pottery traditions accompany the change in architecture. "Grooved ware" is introduced in the Upper Euphrates after c. 1200 BC, but its dating differs from site to site. There is also variety in its relationship with the local pottery traditions of the previous strata. As Müller (1999: 126) elaborates, two different types of cultural development in two neighbouring regions are represented through grooved ware: The Hittite traditions live on in the East of the Euphrates in places like Lidar Höyük. A fully new culture without connections at the previous time, however, appears in the North, as examplified through Altınova.

In the Amuq, red-slipped burnished ware appears in the mid 10th century BC. This coincides with the appearance of more substantial architecture at Tell Ta'yinat and the rise of the kingdom of Pattina/Unqi in the Amuq.

These patches of information leave the period between 1200-1000 BC very poorly represented, only through a handful of structures and various pits. These layouts almost give the impression of storage areas located on the previously

settled mounds used by semi-nomadic people shifting places within the plains. Such a settlement pattern would then explain the inconsistency between the number of pits and dwellings, and would alter the population sizes in this period significantly.

2. There could have been a non-hierarchical distribution of settlements in each area until a centralized power was again established.

The canonized way of looking at regions is through assigning a regional capital and its satellite settlements. This preliminary assumption necessarily dictates the presumption that all of the sites in a region were settled simultaneously and was in interaction with each other.

The settlement pattern analyses that were used in this thesis also stem from such assumptions. The resulting picture is plains dotted with settlements during both the LBA and the EIA. However, with a look that transcends the "synchronistic paradigm", we can attempt to re-construct the EIA as a different period. Especially in Altınova, the incredible variation of the dating of grooved pottery should hint, at least, that there may be populations that moved through the settlements during the EIA. As mentioned in the previous page, the over-abundance of storage pits in each site calls for numbers of population that archaeology can not dwell within the few unearthed structures. These inconsistencies, then, should call for an alternative look towards the transition, as a period that "regional populations" existed and wandered through settlements for access to different facilities/sources.

3. There are important gaps related with the nature of the data and of the analysis methods. It is important to be aware of and explicit about these problems.
4. Each plain defines a self-sufficient unit, which was capable of developing different surviving strategies to recover from crisis.

These conclusions should be developed, and justified/dismantled by future work. Development of new and more flexible models for the analysis of settlement patterns during periods of transition is essential. More essential is that these methods should be developed within the discipline of archaeology, by taking their conceptual backgrounds from the theoretical underpinnings of this field.

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APPENDICES

A. A SURVEY OF COMMON METHODOLOGIES FOR ANALYSING SETTLEMENT DATA

1. Voronoi Diagrams

Voronoi diagrams conceptualize sites as points in a plane. The idea is then to measure the distance between the neighbouring points, find the mid-point, and draw convex polygons around sites/points by joining the mid-points around.

With this method, each site/point is contained within a polygon. It became natural to regard each polygon as being the territory or service area for its own point/individual (Upton and Fingleton, 1985: 96).

2. Catchment Area Analysis

The term “catchment” itself refers to the area from which the inhabitants of a settlement supply their resources.

Site-catchment analysis can be defined as; "the study of the relationships between technology and those natural resources lying within economic range of individual sites" (Vita-Finzi and Higgs, 1970: 5; Tiffany and Abbott, 1982: 313). Thus, catchment area analysis demands a good knowledge of the technology available at a particular period, as well as detailed information regarding the natural resources that were exploited and the resources available with a 30 km radius of the site.

Site-catchment studies have been useful in archaeology for the following purposes: (1) Defining the landscape around a settlement (2) Investigating prehistoric economies and the resource potential of sites (3) Studying settlement patterns (4) Developing projections for possible site locations (Tiffany and Abbott, 1982: 314).

3. Central Place Theory

In the most basic sense, central place theory presumes that the spacing of towns follows a hexagonal and uniform arrangement, in which satellite settlements appear around central sites (Cliff and Ord, 1975: 307). Initial central place models were developed by Christaller (1966) and Lösch (1954) and they had a tendency towards artificial hexagonal configurations. However, the Christialer-

Lösch model was developed with the assumption of a homogenous and featureless plain[56], and did not take any other factors into consideration (Upton, 1986: 167).

Still, some basic assumptions of the Central Place Theory are important to reconsider here. As summarized by Upton and Fingleton (1985: 22), central places supplying the same kind of demand are in competition, which is why they tend to have the maximum distance between themselves. However, this competition also emerge centres of varying importance, and a resulting hierarchy, depending upon the goods and services they occupy.

4. Nearest Neighbour Analysis

Nearest-Neighbour Analysis assumes that there is an intentional distribution among spatial phenomena that can be predicted. With a formula put forward by Clark and Evans, the deviation from this predictable distribution is calculated[57]. The degree of deviation is thought to provide insights about the randomness or intentionality of the spatial distribution (Clark and Evans, 1954; Rossbacher, 1986).

The nearest neighbour constant, the value that determines the degree of randomness or intentionality, is dependent upon the average observed nearest

[56] "Isotropic surface", as termed by Christaller and Lösch

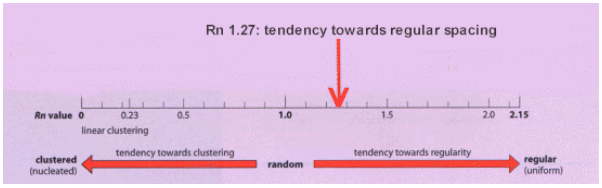
[57] $R = 2\ x\ d\ x\ \sqrt{\frac{n}{a}}$

R: the nearest neighbour constant, which decides the randomness or the order of the settlement pattern; **d:** the average of the observed nearest neighbour distance, **n:** the total number of settlements in the area, **a:** the area under study.

neighbour distance in an area, the total number of settlements in the area and the area under study.

A significant disadvantage of the nearest neighbour analysis is that sampling carried out close to the edges of the study area can alter the result (Cliff and Ord, 1975: 306). However, this may sometimes mean leaving important settlements aside.

The interpretation of the "nearest neighbour constant" is done on the following interpretation scale:



5. Rank-Size Analysis

Rank-size relationship can be defined as the relationship between the size of a settlement and its rank among its "peers", i.e. the other contemporary settlements within a defined geographical area. The principal of rank-size relationship model is the assumption that the fundamental drive behind human group activity is "the urge to save energy in the solution of social problems" (Zipf, 1941: 1; Pearson, 1980: 454).

Rank-size analysis has some advantages over other hierarchical theories like the central-place model in the sense that it does not require that much amount of data to be gathered, and that it is a common thought that the settlement size

distributions do indeed reflect a "latent hierarchical" configuration across the landscape (Dziewonski, 1972, 1975; Pearson, 1977; Pearson, 1980: 453). However, the model is also criticized because it discriminates between or, rather, because it does not discriminate between various levels of socio-cultural organization.

However, the formula for the calculation of the rank-size relation demands a detailed knowledge of the settlements in a given area and their populations. This brings certain disadvantages with regard to the archaeological record, since population estimates in archaeology are doomed to remain speculative.

6. Regression Analysis

As one of the most frequently used statistical models, especially in social, biological, and behavioural sciences, regression analyses are most appropriate for analyzing the distribution of a material or resource over a defined area (Upton and Fingleton, 1985: 264).

Regression analyses require that the production centre for that material to be known. It is still a very useful technique for analyzing distribution data.

B. TABLES

Chronology	King Name	Genealogy
c. 1340	Piyassilis / Šarri-Kušuh	(son of Šuppiluliuma I)
*****		
late 13th cent BC	Talmi-Tešub	
c. 1200 BC	Kuzi-Tešub	(son of Talmi-Tešub)
*****		
c. 1100 BC	Ini-Tešub	
	X-pa-zitis [1]	
c. 970 BC	Ura-Tarhunzas	(son of X-pa-zitis)
*****		
"House of Suhis"	Suhis I	
	Astuwatamanzas	(son of Suhis I)
	Suhis II	(son of Astuwatamanzas)
c. 900 BC	Katuwas	(son of Suhis II)
*****		
870-848 BC	Sangara	
*****		
"House of Astiruwas"	Astiruwas, Yasiris	(Yasiris is the Regent of Astiruwas)
	Kamanis	(son of Astiruwas)
	Sasturas	(Vizier of Kamanis)
*****		
late 8th cent - 717 BC	Pisiris	(king during the annexation to Assyria)

***** stands for the periods where continuity is not certain, and most probably does not exist.

[1] With X-pa-zitis, a great change occurs in the writing of the king names. In the inscriptions, Ura-Tarhunzas adopts Kuzi-Tesub's title "Great King, Hero", but both his and his father's names are Luwian. Hence, it is impossible to know if he is from the genealogy of Kuzi-Tesub or not (Hawkins, 2000: 76).

Table 1 Kings of Carchemish
(Compiled from Hawkins (2000: 73-4; 77-9), and Hawkins (1988: 100-1; 106-8)

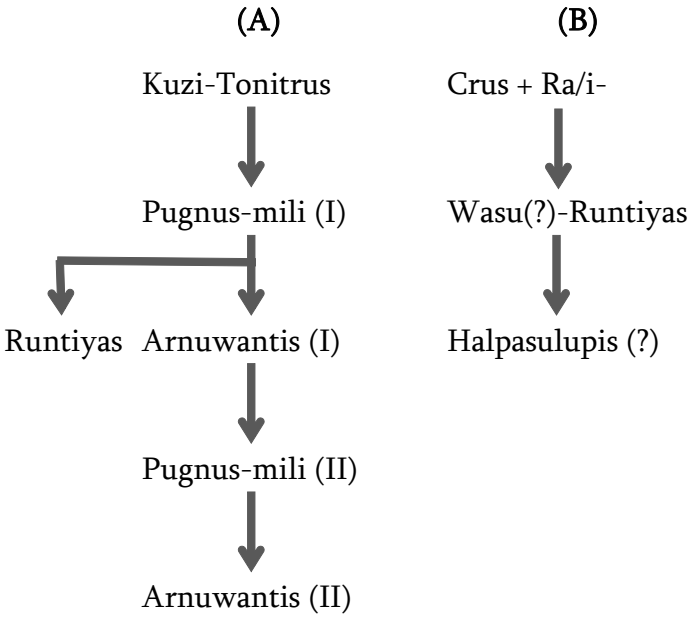


Table 2 Kings of Melid.
Two genealogies are derived from İzgin 1, Malatya 1, Malatya 4, Gürün, Kötükale, İspekçür and Darende inscriptions (Hawkins, 1993: 41; Hawkins, 2000: 287)

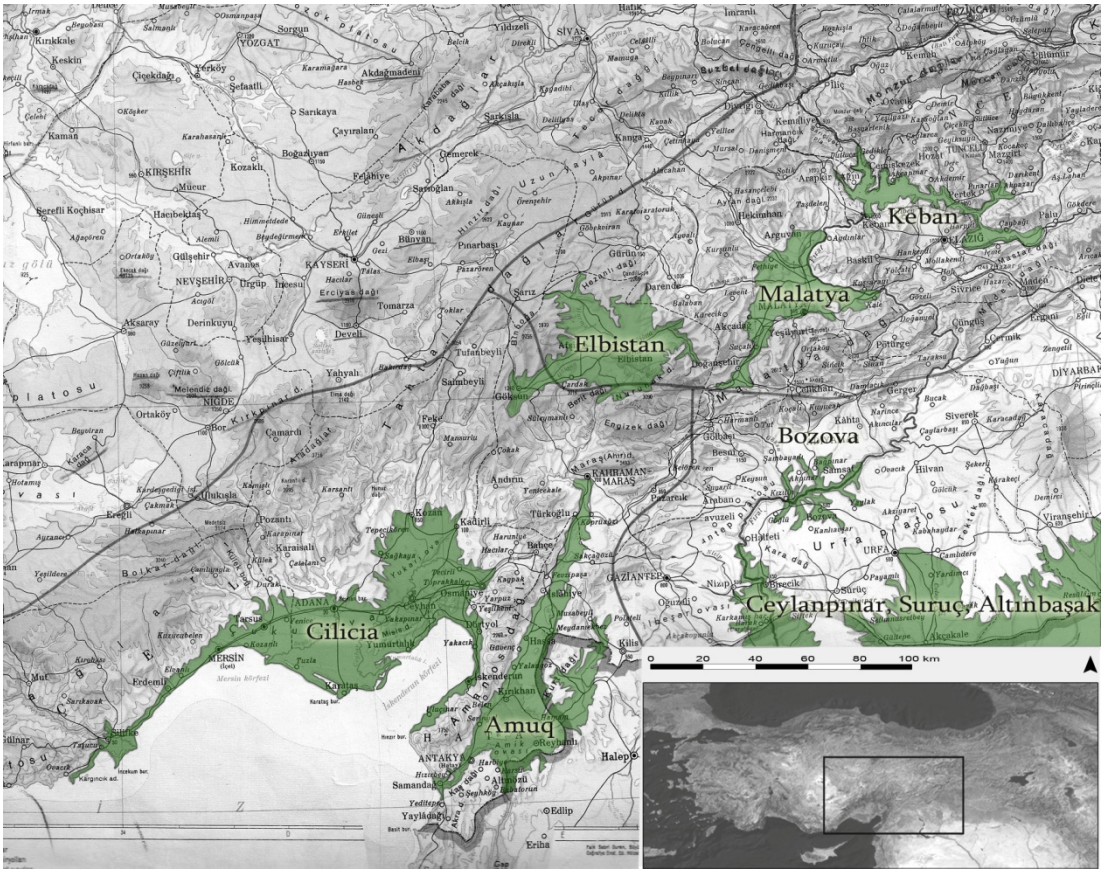
BP/ FP*	Dating	Amuq Phase	Pottery/Small finds	Architecture
FP 6	12th-11th cent BC	N	Textile-related finds like loom weights	Silos and pits
FP5				Rectilinear structures
FP4				Badly damaged architectural fragments
		Oa, c.950-900 BC	RSBW**, Hand burnishing	No associated architecture
1st BP	c. 875-825 BC	Ob, c.900-800 BC	RSBW, Wheel-burnishing introduced	Building XIII, XIV, Area V, floor 2b
2nd BP	c. 825-720 BC	Oc, c.800-725 BC	RSBW, Wheel-burnishing	Courtyard VIII, Gateways III,VII,XI,XIII, Buildings IV,VI,I, II
3rd BP	c. 720-680 BC	Od, c.725-550 BC	as the primary	Building I's porch, Buildings II,IV,VI still in use, Platform XV, Building IX
4th BP	7th cent BC		surface treatment	Building I rebuilt, Building IV, Platform XV
5th BP	6th cent BC			Building I - Room G, baked brick paving of Platform XV

Table compiled from: Haines, 1971: 64-66, Batiuk, Harrison, Pavlish, 2005: 172; Harrison, 2009: 180

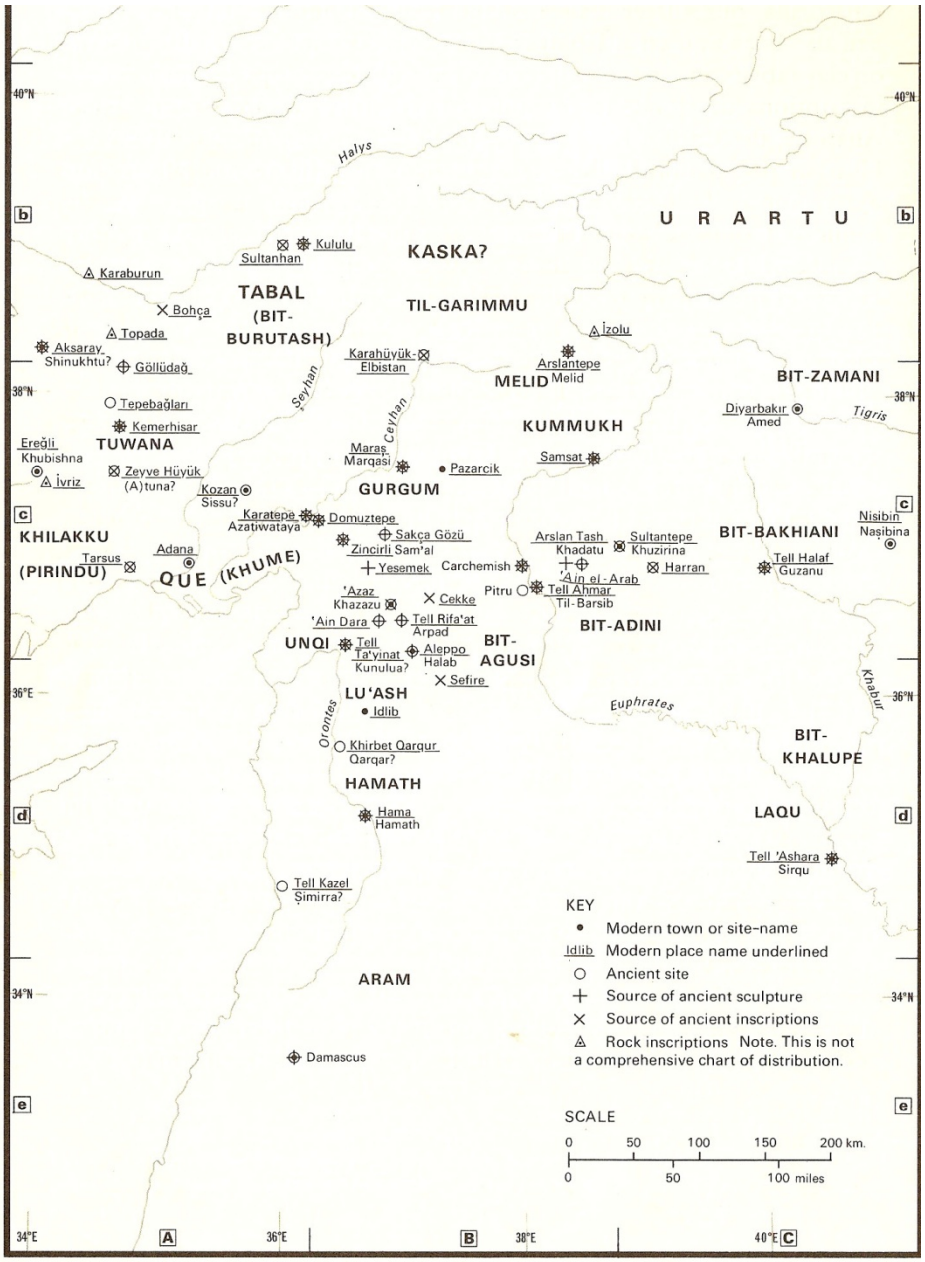
* BP: Building Period (Oriental Institute Excavations terminology), FP: Field Period (AVRP terminology)
** RSBW: Red-slipped burnished ware

Table 3 Building Periods, Field Phases and their Dating at Tell Ta'yinat

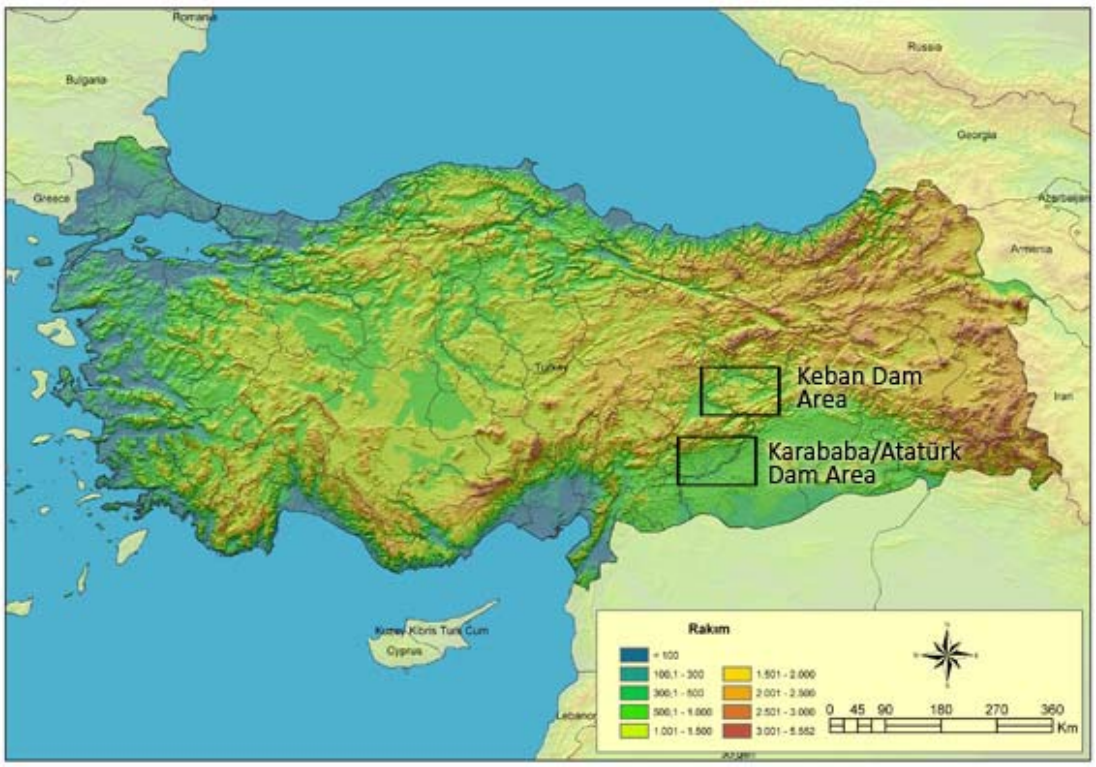
C. MAPS



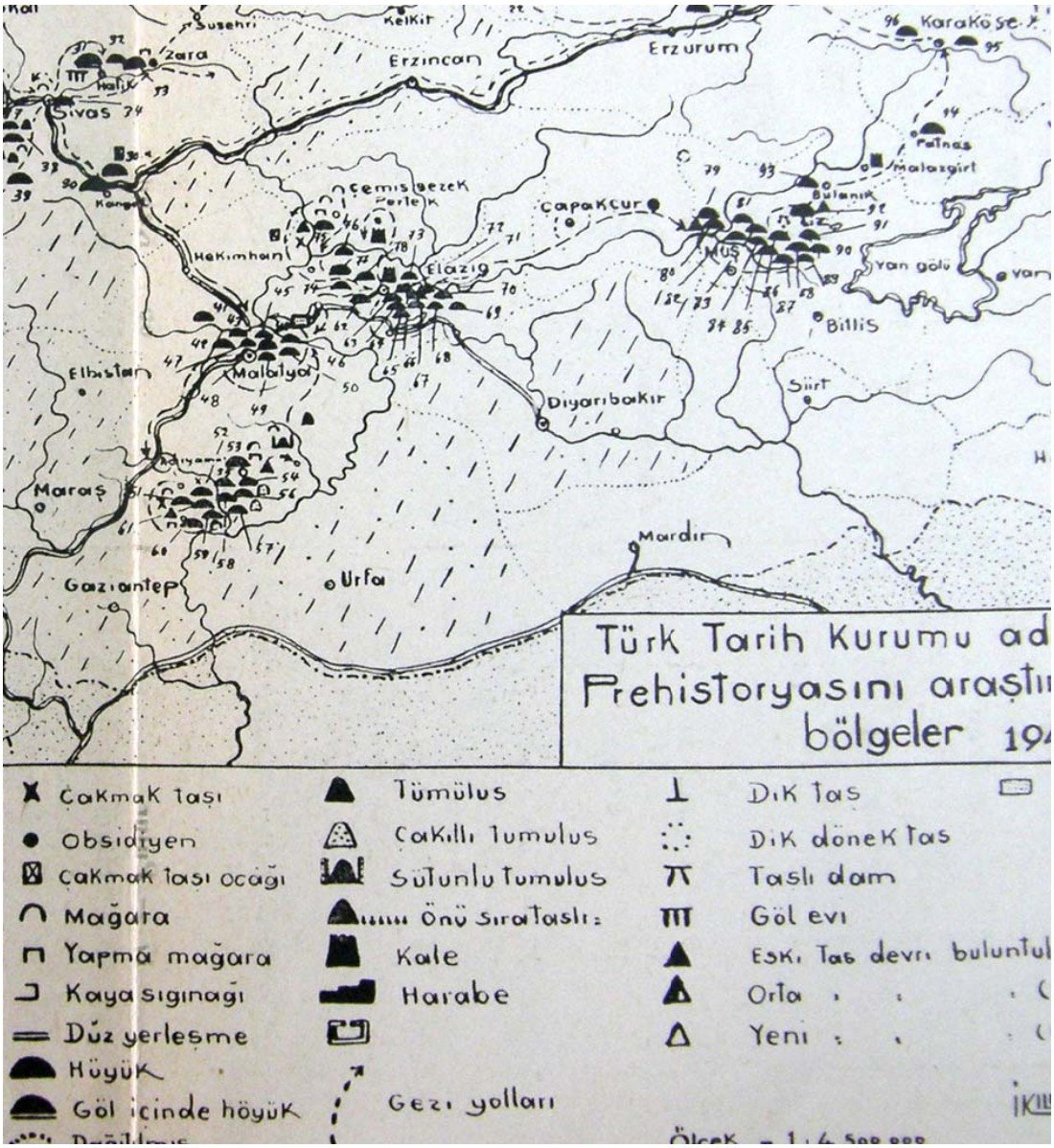
Map 1 Plains within the study area
(Base-map from Duran, 1968: 28-31)



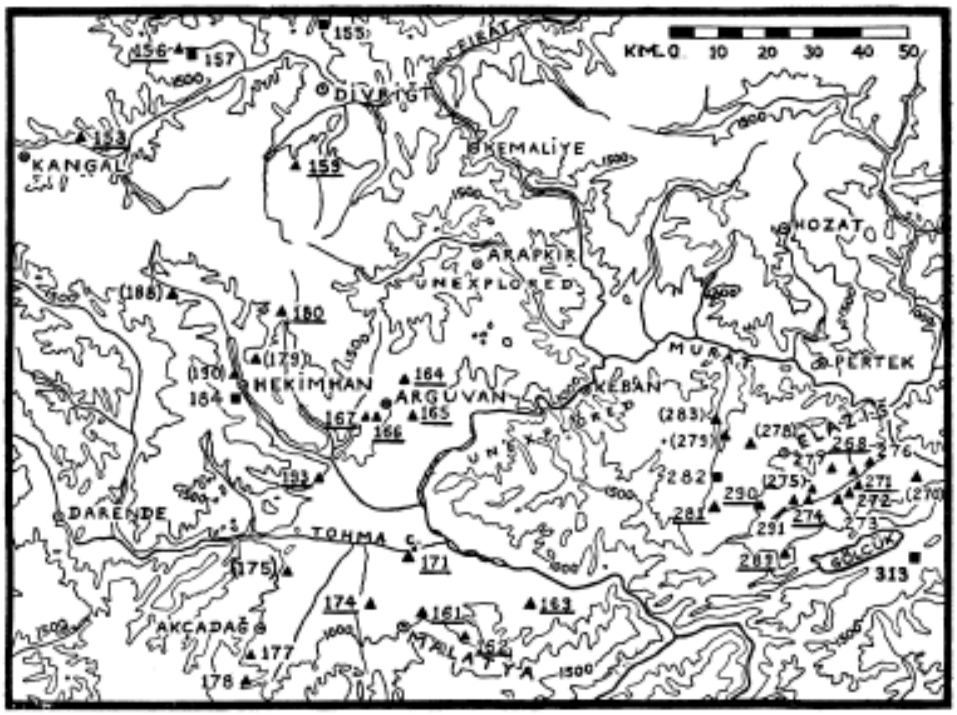
Map 2 Neo-Hittite and Aramaean City States of the Early 1st Millennium BC (after Hawkins, 1982: 374)



Map 3 Keban and Karababa Dam areas



Map 4 Eastern Anatolian sites surveyed by K. Kökten in his 1945 survey (after Kökten, 1947)



MAP III. E.B.A. Sites in the Malatya–Elazığ Region.

Solid squares indicate E.B. I relief decoration; site-numbers underlined indicate E.B. III painted pottery; site-numbers in brackets indicate E.B.A. wares of uncertain subperiod. The administrative district (*kaza*) in which each site is situated is in brackets.

153. Hüyük Değirmende (Kangal).
155. Hornavıl (Divriği).
156. Fero (Divriği).
157. Sivrikaya (Divriği).
159. Armutak (Divriği).
161. Arslantepe (Malatya).
162. Furuncu (Malatya).
163. " Fırat Yolu Hüyük " (Malatya).
164. Karahüyük (Arguvan).
165. İsaköy (Arguvan).
166. Yukarı Sülmenli (Arguvan).
167. Horomhan (Arguvan).
171. Hasirci III (Malatya).
174. Samanköy (Malatya).
175. Yukarı Orukcu (Akçadağ).
177. İkinciler (Akçadağ).
178. Ören (Akçadağ).
179. Yukarı Budaklı (Hekimhan).
180. Aşağı Sazlıca (Hekimhan).
184. Hasartepe (Hekimhan).
188. Yeşilkale (Kangal).
190. Hasarkaya (Hekimhan).
193. Fethiye (Malatya).
268. Tülüntepe (Elazığ).
270. Aşağı İçme (Elazığ).
271. Könk (Elazığ).
272. Sarpulu (Elazığ).
273. Kövenk (Elazığ).
274. Tinazit (Elazığ).
275. Kehli (Elazığ).
276. Tepecik (Elazığ).
277. Hoğu (Elazığ).
278. Hulvenk (Elazığ).
279. Erzürük (Elazığ).
281. Hankendi (Elazığ).
282. Hinsor (Elazığ).
283. Avcılı (Elazığ).
289. Uluova (Elazığ).
290. Tadım (Elazığ).
291. Kuyulu (Elazığ).
313. Sarsap Mevki (Erganımadeni).

Map 5 Sites surveyed by C. Burney in the 1956 survey
(after Burney, 1958: 204)

D. FIGURES

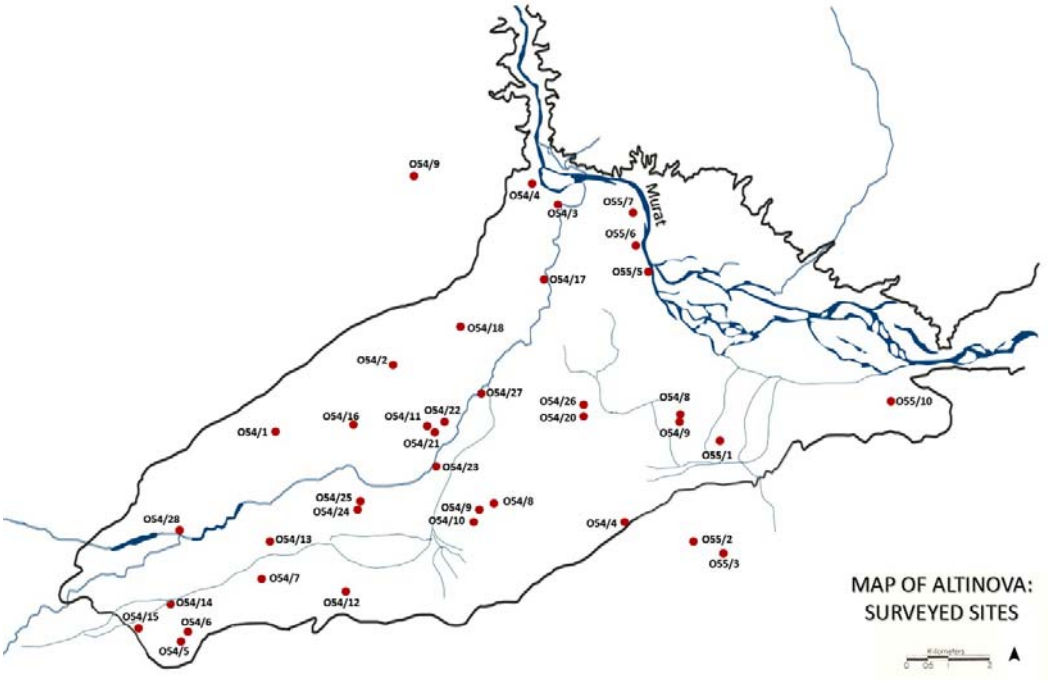


Figure 1Map of sites surveyed by Whallon and Kantman in Altınova (Basemap from Whallon, 1979)

SITE NO	NAME	LBA
O54/1	Tülin Tepe	major
O54/2	Makaraz Tepe (Tepecik)	major
O54/3	Değirmen Tepe	major
O54/5	Maşatlık (Sarpulu)	major
O54/6	Kazancı	major
O54/7	Könk	major
O54/8	Norşun Tepe	major
O54/9	?	major
O54/11	Yank Tepe	major
O54/12	Kuruçayır Tepesi	minor
O54/14	Körtepe (Boztepe, Tilkitepe)	major
O54/15	Çakıltepe (Körtepe)	major
O54/19	?	major
O54/21	Kemaksı Mevkii Maşatlık	minor
O54/22	Bahçeler Mevkii Körtepe	major
O54/24	Şavka Tepe	major
O54/25	Körtepe	major
O54/26	Maşatlık	major
O54/27	Güluşanbaba Tepesi	major
O54/28	Körtepe	major
O55/1	Korucu Tepe	major
O55/2	Altıntepe	minor
O55/3	Boy Tepe	major
O55/4	Körtepe	major
O55/6	?	major
O55/8-9	Körtepe	major

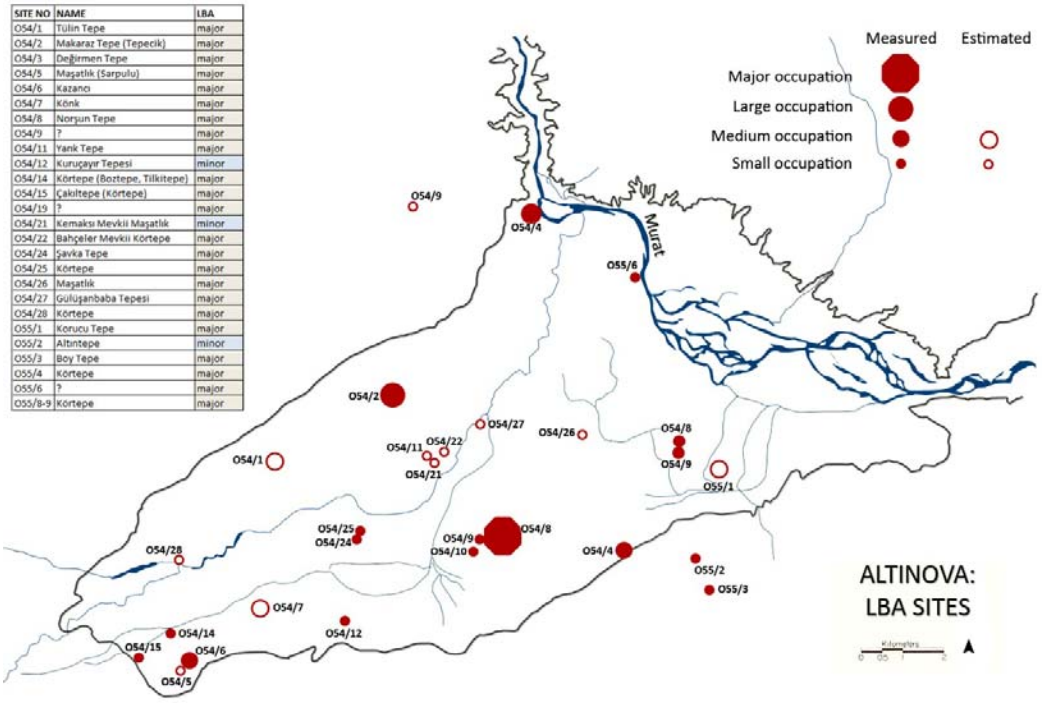


Figure 2 LBA Settlements located by Whallon and Kantman in Altınova (Basemap from Whallon, 1979: 274, fig. 205)

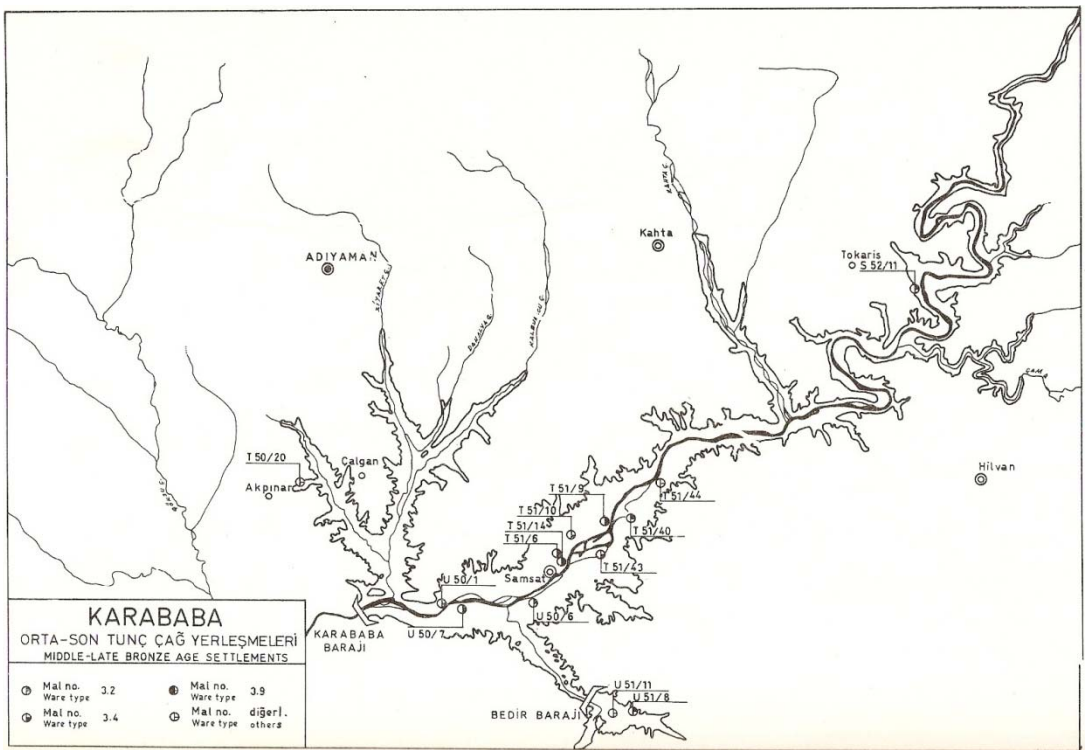


Figure 3 Map showing the LBA-MBA material from the Lower Euphrates survey (after Özdoğan, 1977: 14)

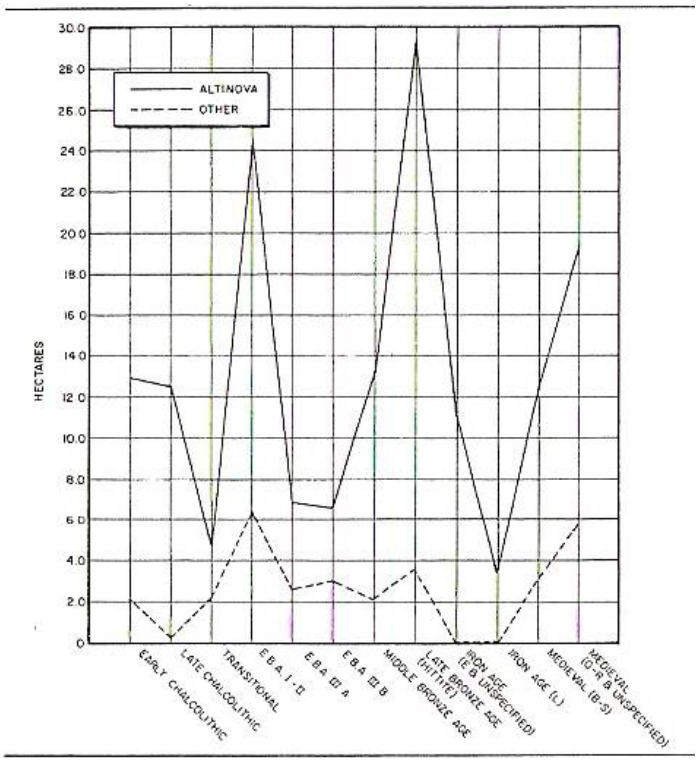


Figure 4 Total measured and estimated area of occupation by period within Altınova and the other parts of the survey area
(after Whallon, 1979: 278, fig. 211)

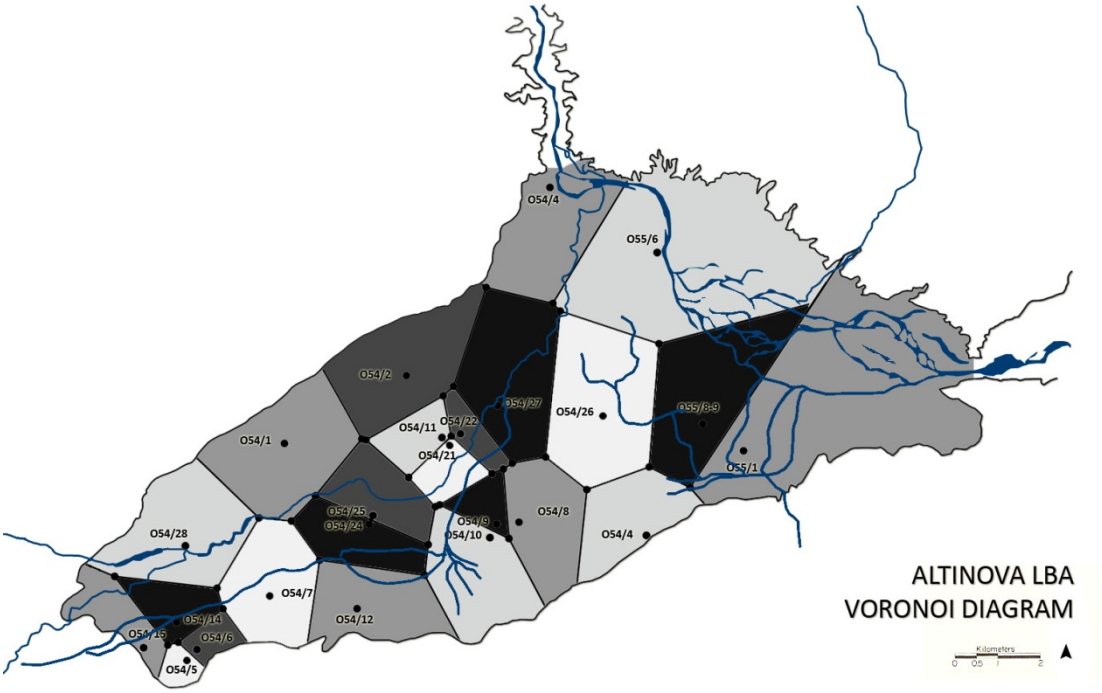


Figure 5 Voronoi diagram of Altınova LBA settlements

SITE NO	NAME
O54/1	Tülin Tepe
O54/2	Makaraz Tepe (Tepecik)
O54/3	Değirmen Tepe
O54/5	Maşatlık (Sarpulu)
O54/6	Kazancı
O54/7	Könk
O54/8	Norşun Tepe
O54/9	?
O54/11	Yarık Tepe
O54/12	Kuruçayır Tepesi
O54/14	Körtepe (Boztepe, Tilkitepe)
O54/15	Çakıltepe (Körtepe)
O54/19	?
O54/21	Kemaksı Mevkii Maşatlık
O54/22	Bahçeler Mevkii Körtepe
O54/24	Şavka Tepe
O54/25	Körtepe
O54/26	Maşatlık
O54/27	Gülüşanbaba Tepesi
O54/28	Körtepe
O55/1	Korucu Tepe
O55/2	Altıntepe
O55/3	Boy Tepe
O55/4	Körtepe
O55/6	?
O55/8-9	Körtepe

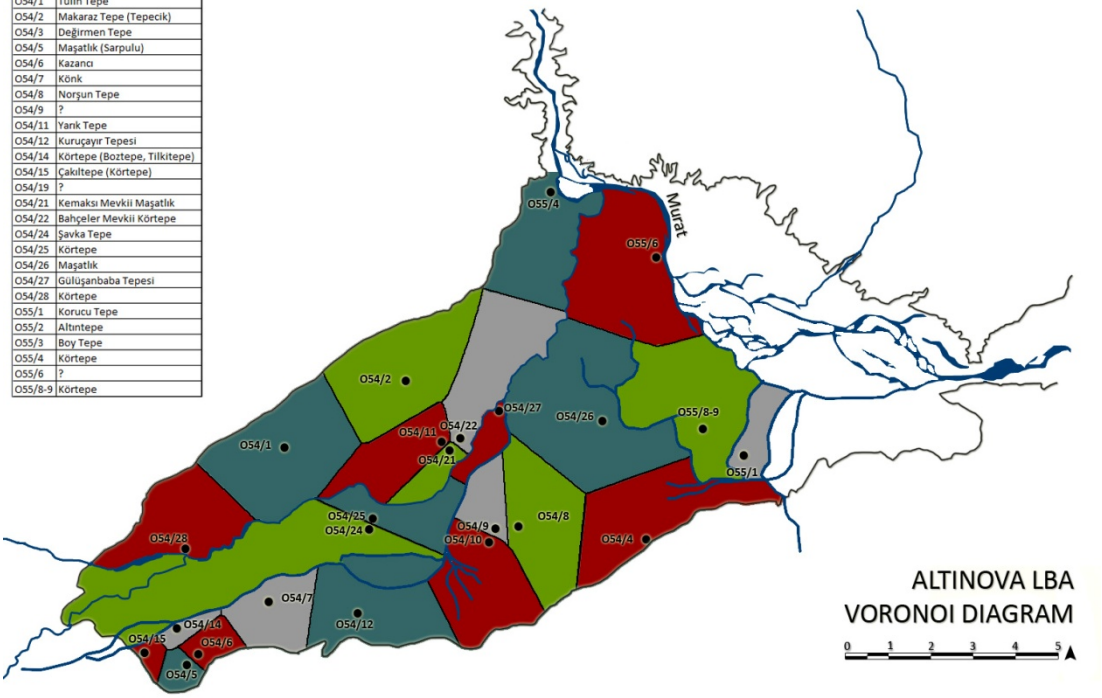


Figure 6 Voronoi diagram of Altınova LBA settlements with borders defined by rivers

Altınova:			
Nearest Neighbor Analysis for LBA			
Site No	NN Dist	Site No.	NN Dist
1	0,97	13	0,52
2	0,8	14	0,26
3	0,35	15	0,26
4	0,35	16	0,37
5	1,8	17	1,09
6	2,06	18	1,09
7	1,99	19	2,23
8	0,22	20	2,92
9	0,22	21	1,14
10	2,67	22	2,34
11	0,35	23	2,93
12	0,52	24	2,93
Total distance:		30,38	
Total area:		132.775 km²	
Total site number:		24	
D(Obs)		1,2658333	
Rn		1,07	
	RESULT:	RANDOM	

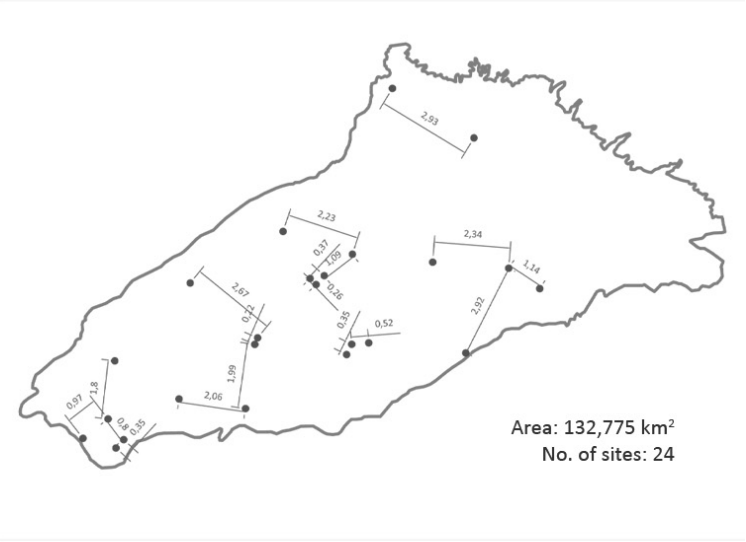


Figure 7 Nearest Neighbour Analysis of Altınova LBA settlements

ALTINOVA LBA SETTLEMENTS: RANK-SIZE ANALYSIS		
Site no	Site name	Occupation area (ha)
O54/8	Norşun Tepe	8,2
O54/2	Makaraz Tepe (Tepecik)	3,4
O54/3	Değirmen Tepe	1,7
O54/6	Kazancı	1,7
O55/8-9	Körtepe	1,7
O54/1	Tülin Tepe	1,6
O55/1	Korucu Tepe	1,3
O55/4	Körtepe	1,3
O54/5	Maşatlık (Sarpulu)	0,8
O54/11	Yarık Tepe	0,7
O54/27	Gülüşanbaba Tepesi	0,7
O54/28	Körtepe	0,6
O54/12	Kuruçayır Tepesi	0,4
O54/7	Könk	0,3
O54/9	?	0,3
O54/14	Körtepe (Boztepe, Tilkitepe)	0,3
O54/21	Kemaksı Mevkii Maşatlık	0,3
O54/22	Bahçeler Mevkii Körtepe	0,3
O54/24	Şavka Tepe	0,3
O54/26	Maşatlık	0,3
O55/2	Altıntepe	0,3
O54/25	Körtepe	0,2
O54/15	Çakıltepe (Körtepe)	0,1
O54/19	?	0,1
O55/3	Boy Tepe	0,1
O55/6	?	0,1

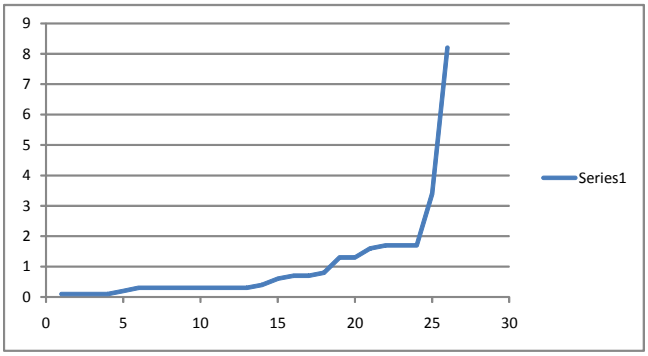


Figure 8 Rank-size Analysis of Altınova LBA settlements

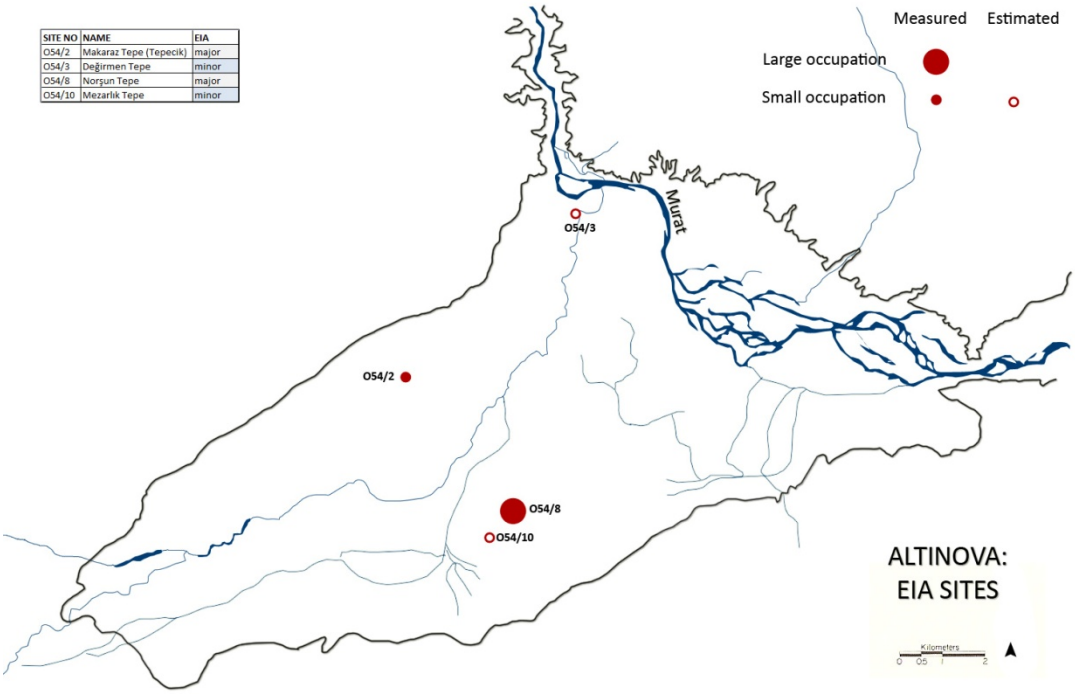


Figure 9 Map showing the EIA sites located by Whallon and Kantman in Altınova (Base-map from Whallon, 1979: 275, fig. 206)

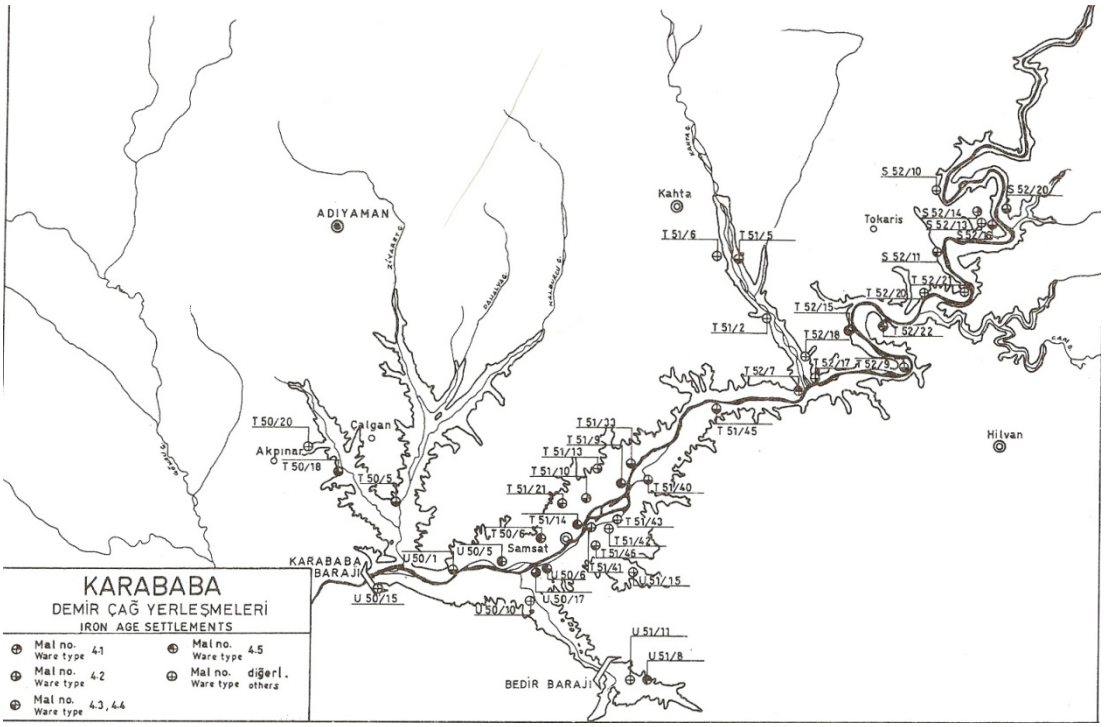


Figure 10 Iron Age settlements in the Karababa Dam Area (after Özdoğan, 1977: 15)

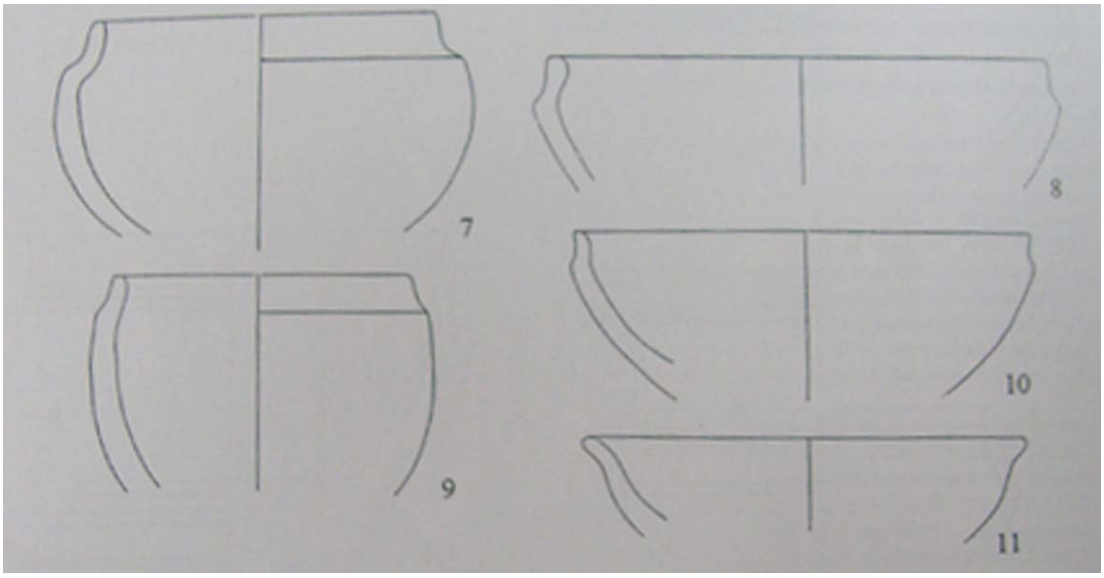


Figure 11 Norşun Tepe Grooved Pottery: Examples of round bowls and carinated bowls without decoration
(after Bartl, 2001: 388, fig. 3)

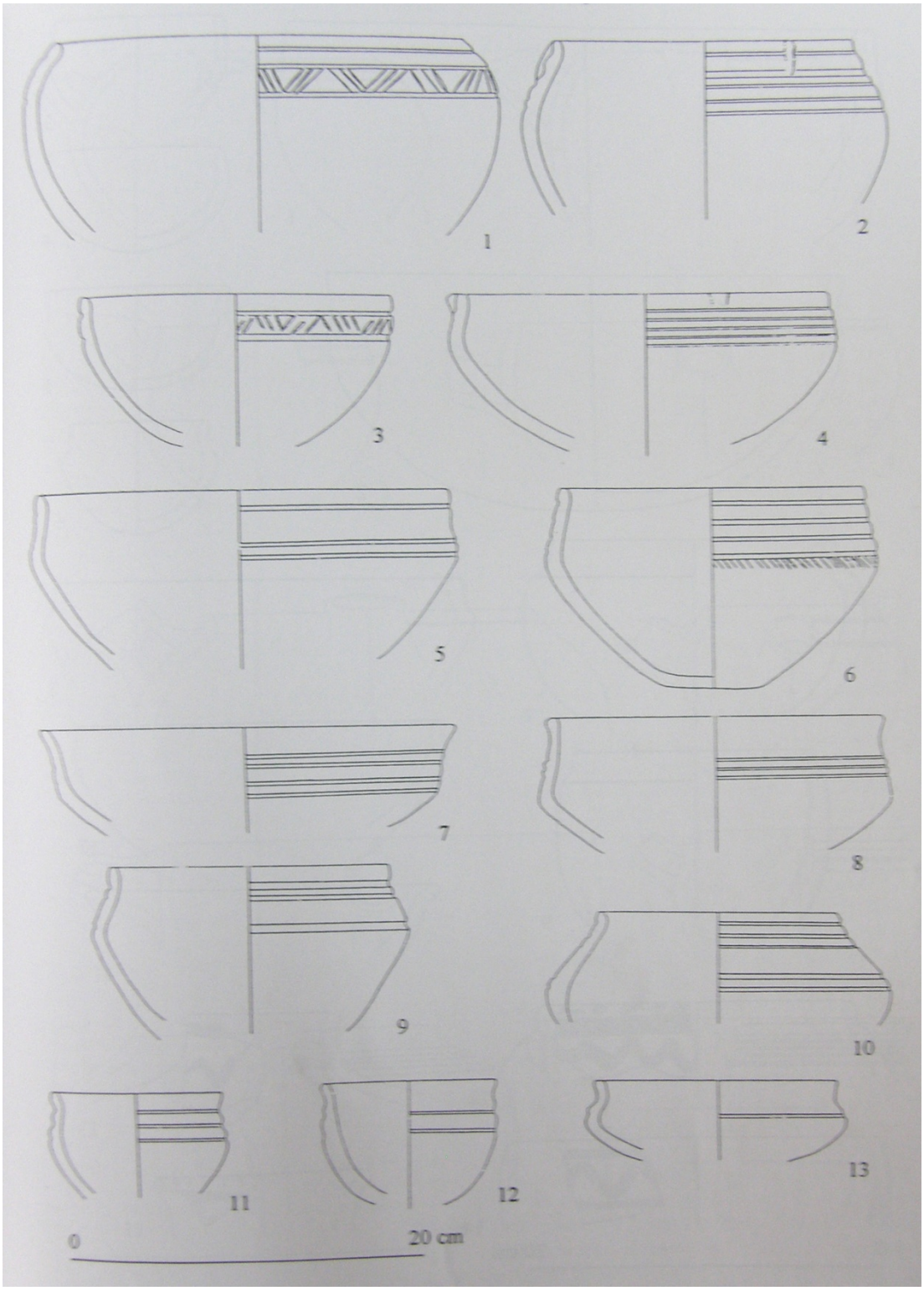


Figure 12 Norşun Tepe Grooved Pottery: Examples of round bowls and carinated bowls with horizontal grooves around the rim
(after Bartl, 2001: 387, fig.2)

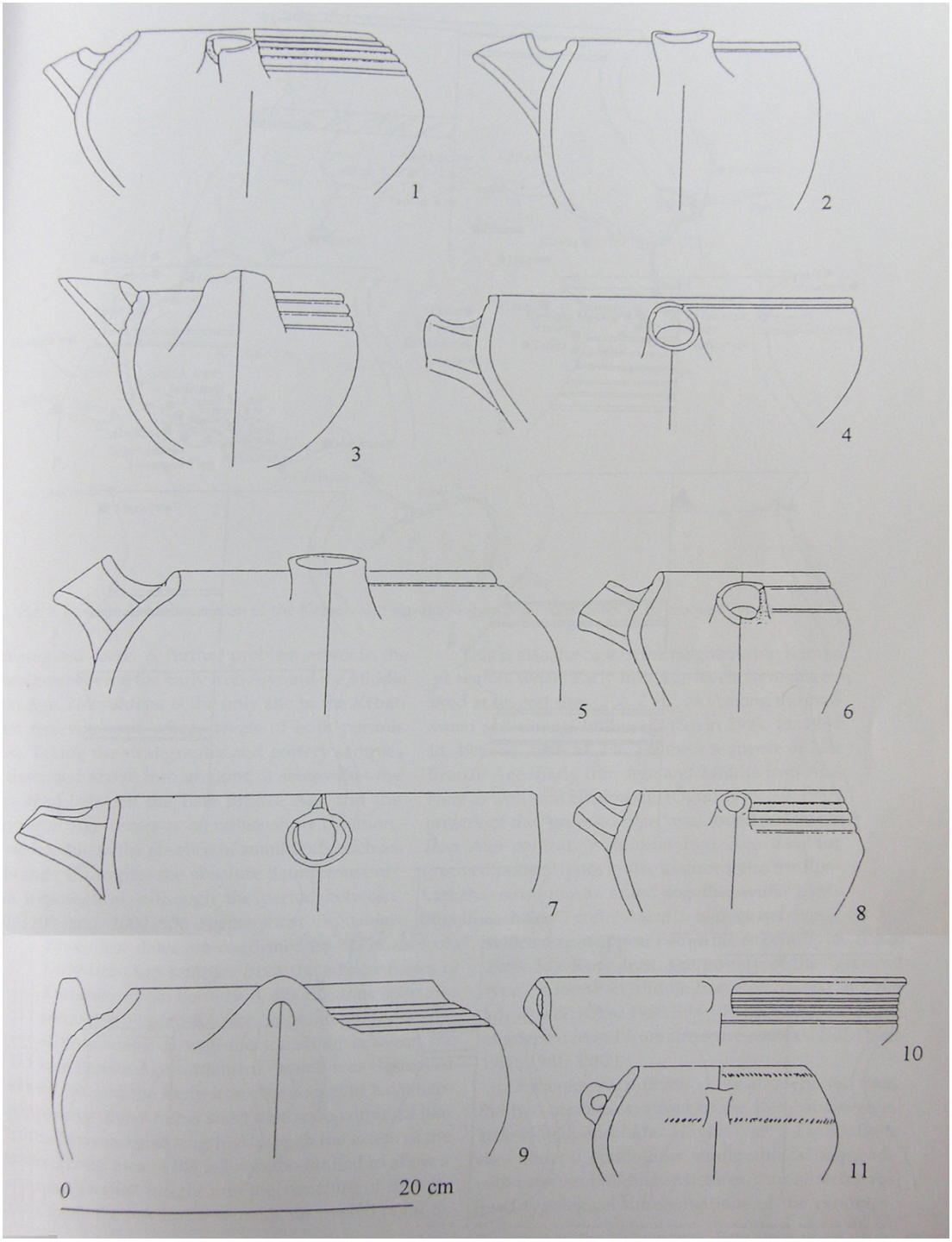


Figure 13 Norşun Tepe Grooved Pottery: Examples of hole-mouth pots with spouts and handles
(after Bartl, 2001: 389, fig.4)

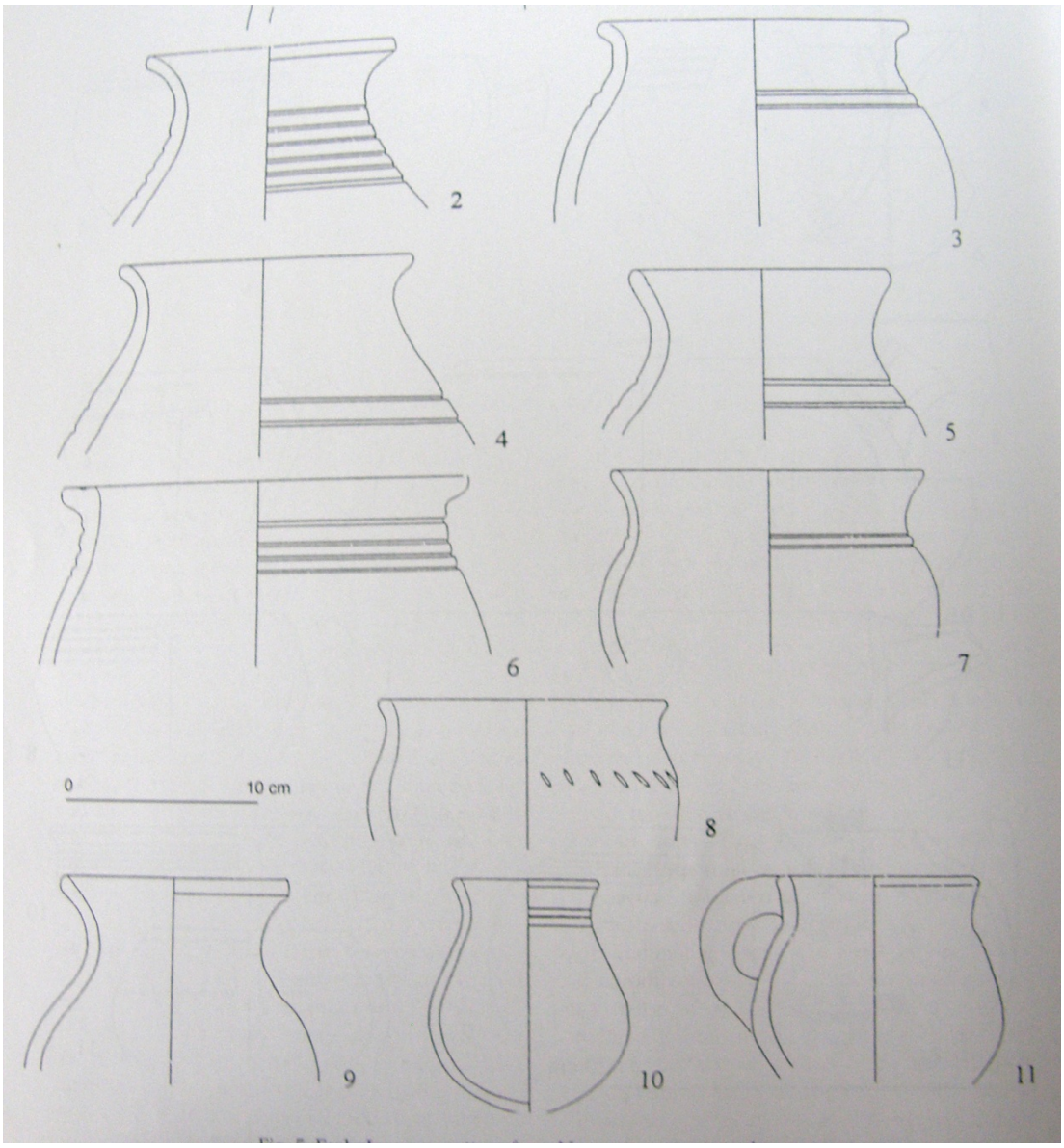


Figure 14 Norşun Tepe Grooved Pottery: Examples of vase-like pots
(after Bartl, 2001: 390, fig. 5)

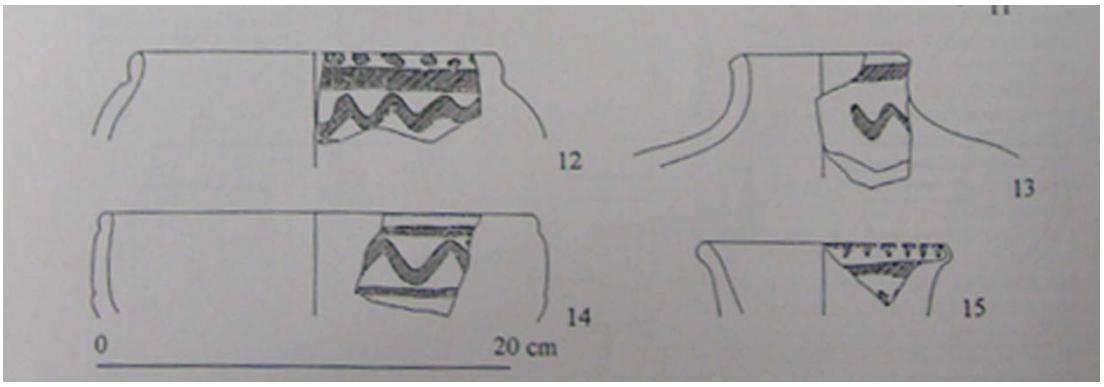


Figure 15 Norşun Tepe Grooved Pottery: Examples of painted pottery
(after Bartl, 2001: 388, fig. 3)

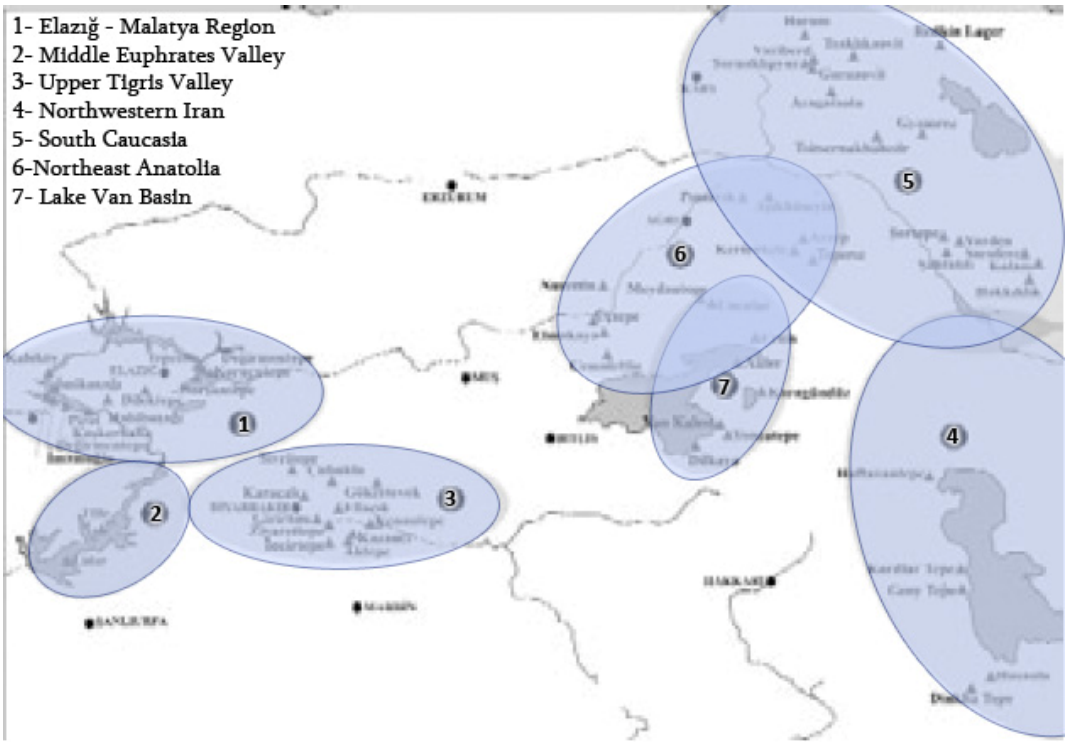


Figure 16 Distribution zone of "Grooved Pottery"
(after Konyar, 2005: 16)

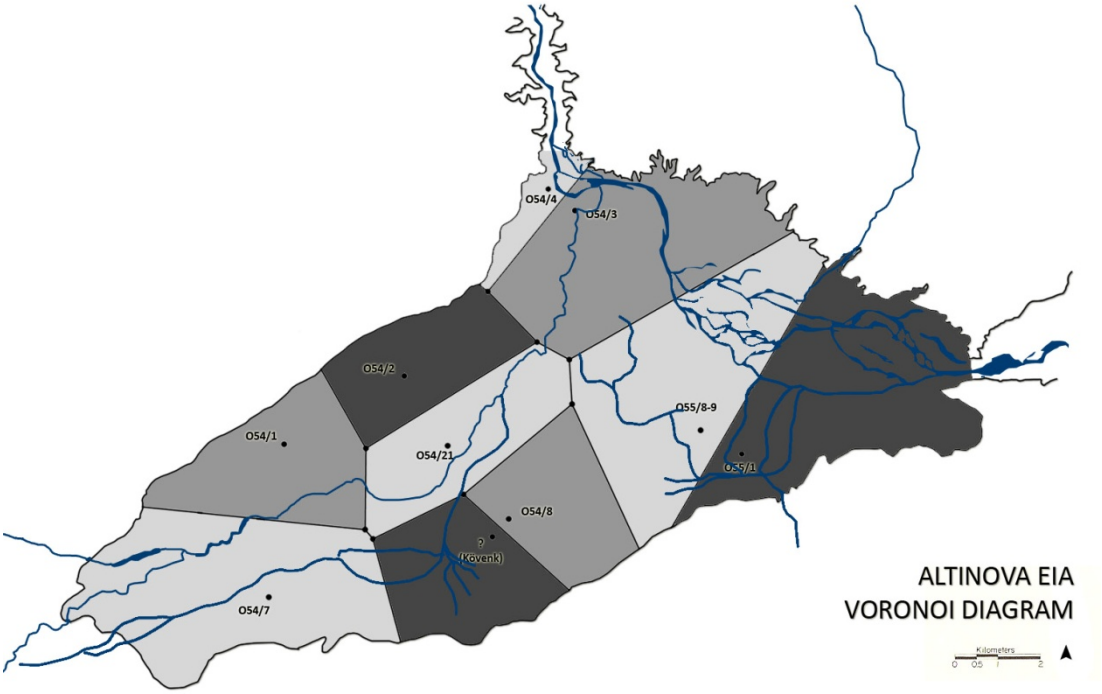


Figure 17 Voronoi diagram of Altınova EIA settlements

SITE NO	NAME
O54/1	Tülin Tepe
O54/2	Makaraz Tepe (Tepecik)
O54/3	Değirmen Tepe
O54/7	Könk
O54/8	Norşun Tepe
O54/21	Kemaksı Mevkii Maşatlık
O55/1	Korucu Tepe
O55/8-9	Körtepe
O55/4	Körtepe
?	Kövenk

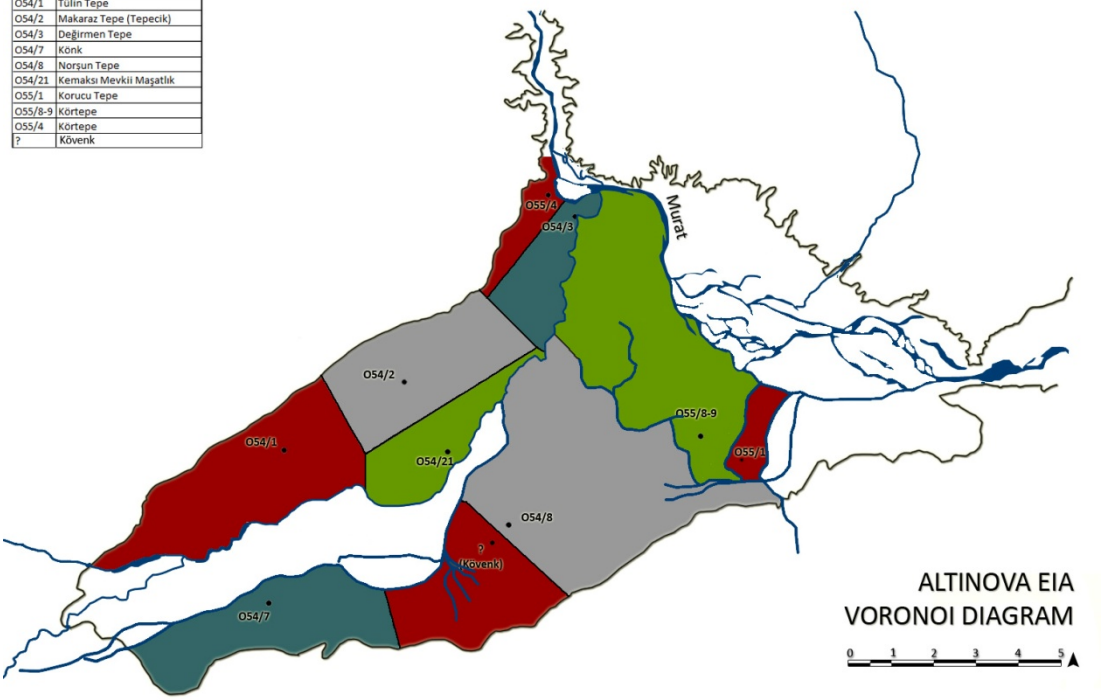


Figure 18 Voronoi diagram of Altınova EIA settlements with borders defined by rivers

Altınova	
Nearest Neighbor Analysis for EIA	
Site No.	NN Dist
1	3,56
2	3,2
3	1,9
4	1,9
5	0,56
6	0,56
7	0,79
8	0,79
9	1,1
10	1,1

Total distance:	15,46
Total area:	132,775 km2
Total site number:	10
D(Obs)	1,546
Rn	**0,8485**
RESULT:	**STRONG TENDENCY FOR CLUSTERING**

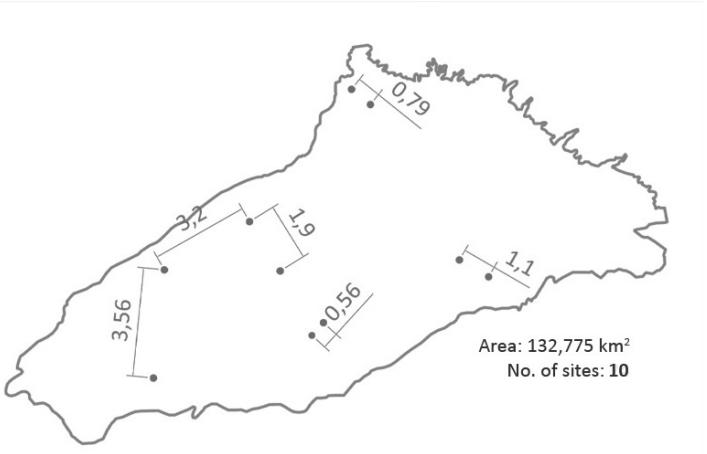
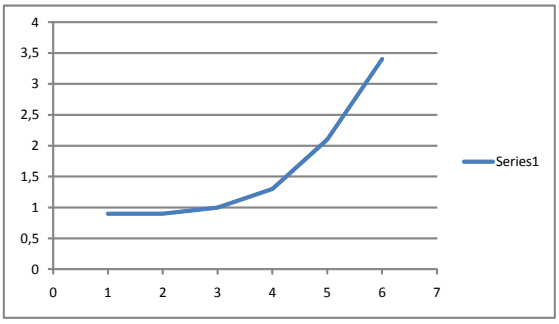


Figure 19 Nearest Neighbour Analysis of Altınova EIA settlements

ALTINOVA EIA SETTLEMENTS:
RANK-SIZE ANALYSIS

Site no	Site name	Occupation (ha)
O54/8	Norşun Tepe	3,4
O54/7	Könk	2,1
O55/4	Körtepe	1,3
O54/3	Değirmen Tepe	1
O55/8-9	Körtepe	0,9
O54/2	Makaraz Tepe (Tepecik)	0,9
O54/21	Kemaksı Mevkii	N/A
?	Kövenk	N/A
O54/1	Tülin Tepe	N/A
O55/1	Korucu Tepe	N/A



RESULT: INTERMEDIATE GRAPH

Figure 20 Rank-Size Analysis of Altınova EIA settlements

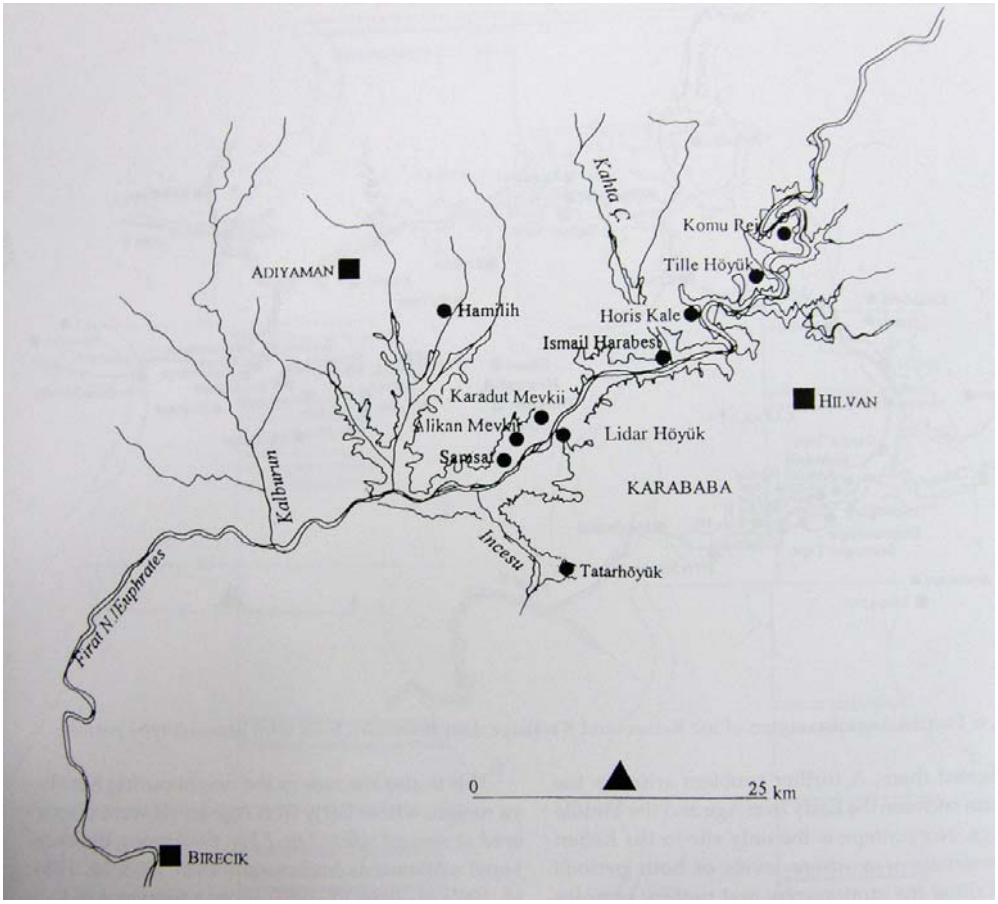


Figure 21 Sites with grooved pottery in the Karababa Dam Area
(after Bartl, 2001: 392)

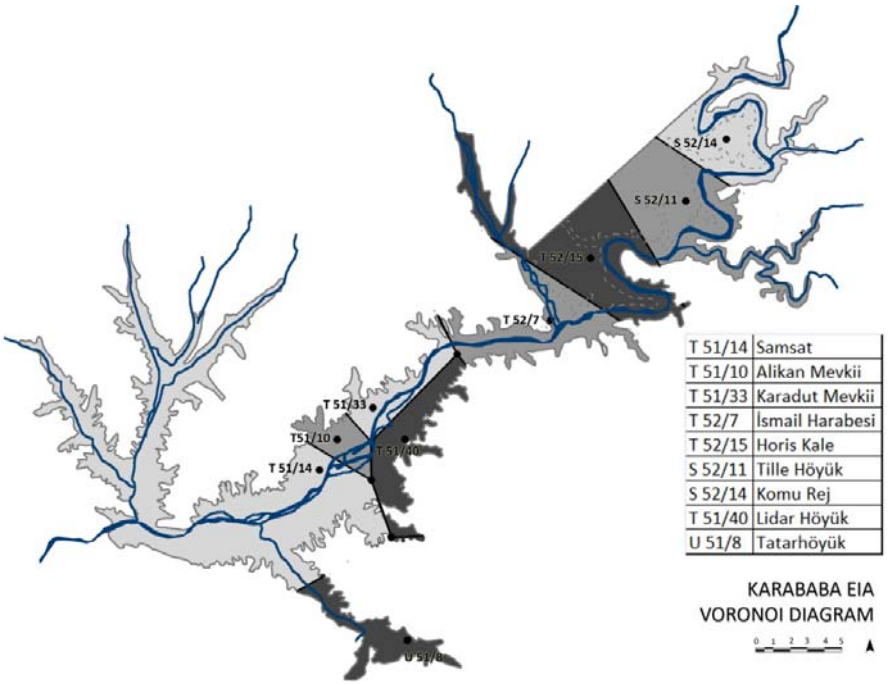


Figure 22 Voronoi diagram of Karababa EIA settlements

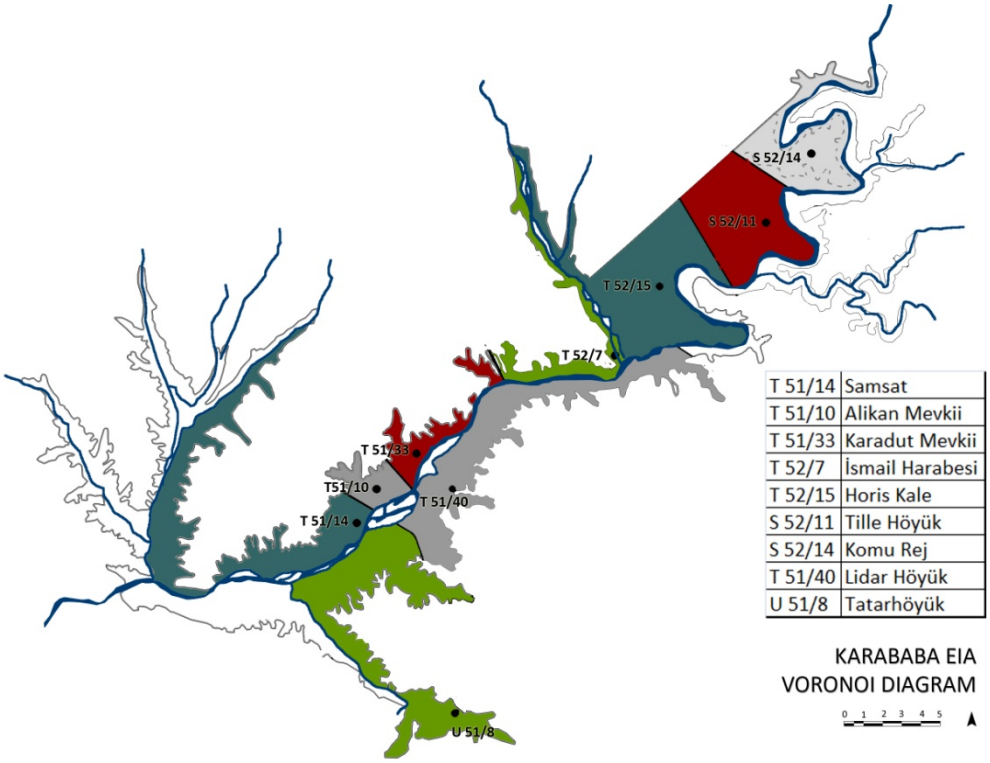


Figure 23 Voronoi diagram of Karababa EIA settlements with borders defined by rivers

Bozova/Karababa	
Nearest Neighbor Analysis for EIA	
Site No.	NN Dist
1	2,06
2	2,06
3	2,4
4	2,4
5	11,05
6	4,3
7	4,3
8	4,34
9	4,34

Total distance:	37,25
Total area:	283,6946 km2
Total site number:	9
D(Obs)	4,1388
Rn	**1,6073**
RESULT:	**STRONG TENDENCY FOR REGULARITY**

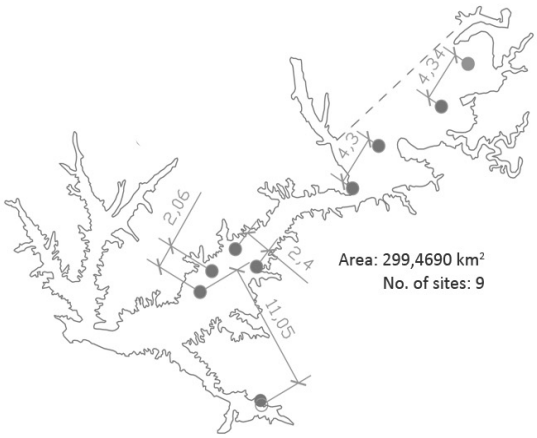


Figure 24 Nearest Neighbour Analysis of Karababa EIA settlements

Site no	Name	Area	Illustration	AVRP Date	Braidwood Date
AS3	Kirmitli Höyük	140x60 m	Fig. A. 3	2nd and 1st mil pot	possibly Early Iron Age
AS4	Bozhöyük	150x40 m	Fig. A. 3	Late to Early Bronze	EIA
AS6	Yassıyurt (Sivrice)	90x90 m	Fig. A. 3	2nd/1st mil pottery	LBA
AS10	Balama (Ain al Samah)	150x125 m	Fig. A. 5	Iron Age	Iron Age
AS11	Paşaköy	150x60 m	Fig. A. 4-5	LBA, EIA	N/A
AS15	Koyuncu Höyük (Tell Mahmutlu	150x90 m	Fig. A. 2	Iron age, EIA	IA and EIA
AS16A	Çataltepe (Umm al-A'zum)	100x100 m	Fig. A3	2nd/1st mil pottery	LBA and EIA
AS17	Soğuksu Höyük	170x150 m	Fig. A5	2nd/1st mil pottery	possibly Early Iron Age
AS28	Tell Malta (Matta)	240x150 m	Fig. A5	MBA/LBA carin'd ves.s	EIA, LBA (?)
AS35	Baldıran (Bokluca, Balderan)	200x140 m	Fig. A6	various 2nd mil wares	Iron Age (?)
AS36	Tell Kızılkaya (Gavurköy)	100x80 m	Fig. A6	possible 2nd mil	possibly Early Iron Age
AS37	Yanık Tepe (Tabarat Baytarlı)	200x100 m	Fig. A5	no collection	possible LBA
AS40	Tell Baytarlı (Topraklı)	130x100 m	Fig. A5	LBA and EIA, Cypriot wares	LBA
AS52	Akpınar Höyük	230x140 m	Fig. A6	EIA	EIA
AS55	Tell Kurcoğlu (Kırcaoğlu)	170x150 m	Fig. A6	EIA	EIA
AS75	Tell Keçebey	125x95 m	Fig. A8	2nd mil, and Iron Age	LBA,EIA, IA
AS84	Tell Uzunarab (Bozhöyük)	300x180 m	Fig. A8	EIA, IA	IA probably EIA
AS86	Karatepe	350x325 m	Fig. A5	EIA, IA, 2nd mil	N/A
AS89	Boztepe	150x140 m	Fig. A5	MBA-LBA, LBA-EIA	LBA, EIA, IA
AS95	Karahöyük	120x120m	Fig. A6	painted Iron Age	EIA, IA
AS99	Tell Hasanuşağı (Yerkuyu, Yurt Höyük)	350x200 m	Fig. A5	IA and EIA abundant, rare 2nd mil	MBA-LBA, EIA, IA
AS103	Tabarat Mastepe	150x100 m	Fig. A6	?, not yet visited	MBA, LBA (?), EIA (?)
AS104	Tell al-Terzi (Terzi Höyük)	250x200 m	Fig. A5, A8	IA (?)	EIA, IA
AS117	Tell Karataş	140x40 m	Fig. A8, A9	?	possibly Early Iron Age
AS120	Tell Mirmiran (Tell Anbar)	225x160 m	Fig. A8	LBA (?), Iron Age	EIA, LBA(?)
AS125	Saçaklı	120x120 m	Fig. A8	?	EIA (?)
AS126	Tell Ta'yinat	536x270 m	Fig. A8	EBA, EIA, IA	EBA, IA
AS129	Tell Salihiyyah	250x180 m	Fig. A9	abundant IA and EIA, 2nd mil	IA, EIA
AS134	Halak Tepe (Halaq)	100x50 m	Fig. A8	several LBA platters, IA	IA
AS135	Tulail al-Sharqi (Tell es-Sheikh)	100x70m	Fig. A8	Halaf and Ubaid	IA and LBA (?)
AS136	Tell Atchana (Alalakh)	640x200m	Fig. A8	MBA, LBA	LBA
AS151	Karataş (Nejar/Necar Tepe)	300x215m	Fig. A6	2 pos. EIA types, 1 p. LBA/EIA platter	LBA (?)
AS152	Ayrancı Doğu (Ayrancı Şarki)	120x120m	Fig. A6	very small EIA and IA collection	IA, EIA, LBA (?)
AS 156	Tell Mastepe (Mastepe)	260x240m	Fig. A6	possibly IA II in A	N/A
AS158	Yazı Höyük (Tell Acarköy)	110x85m	Fig. A6	EIA, possible Aegean	IA, EIA

Figure 25 Sites in the Amuq region with LBA and/or EIA levels, from the Braidwood and the AVRP surveys (only LBA and EIA noted, N/A means the absence of these periods, while ? means dating not done by the AVRP team)

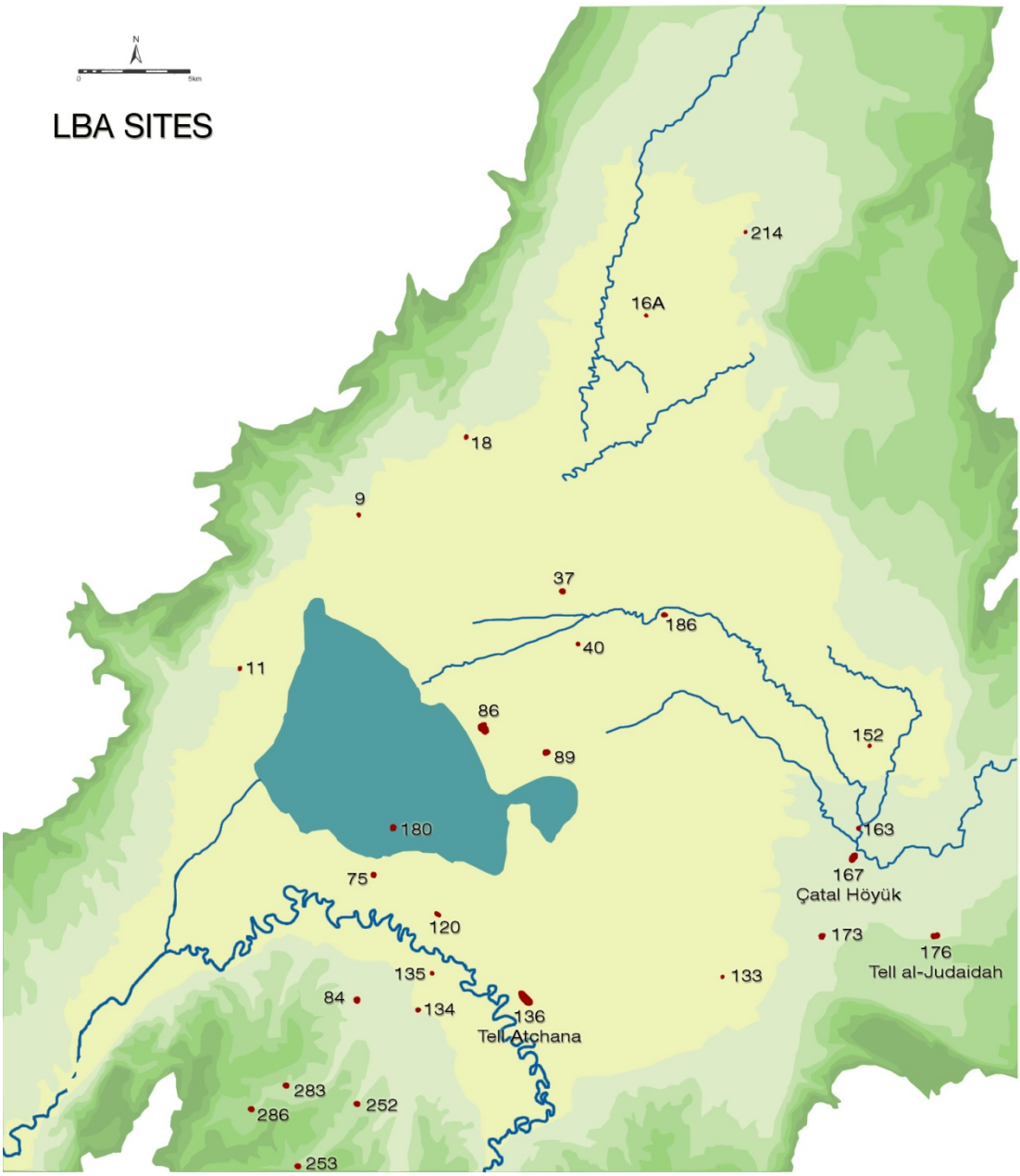


Figure 26 LBA sites in the Amuq
(after Casana, 2009: 14-15)

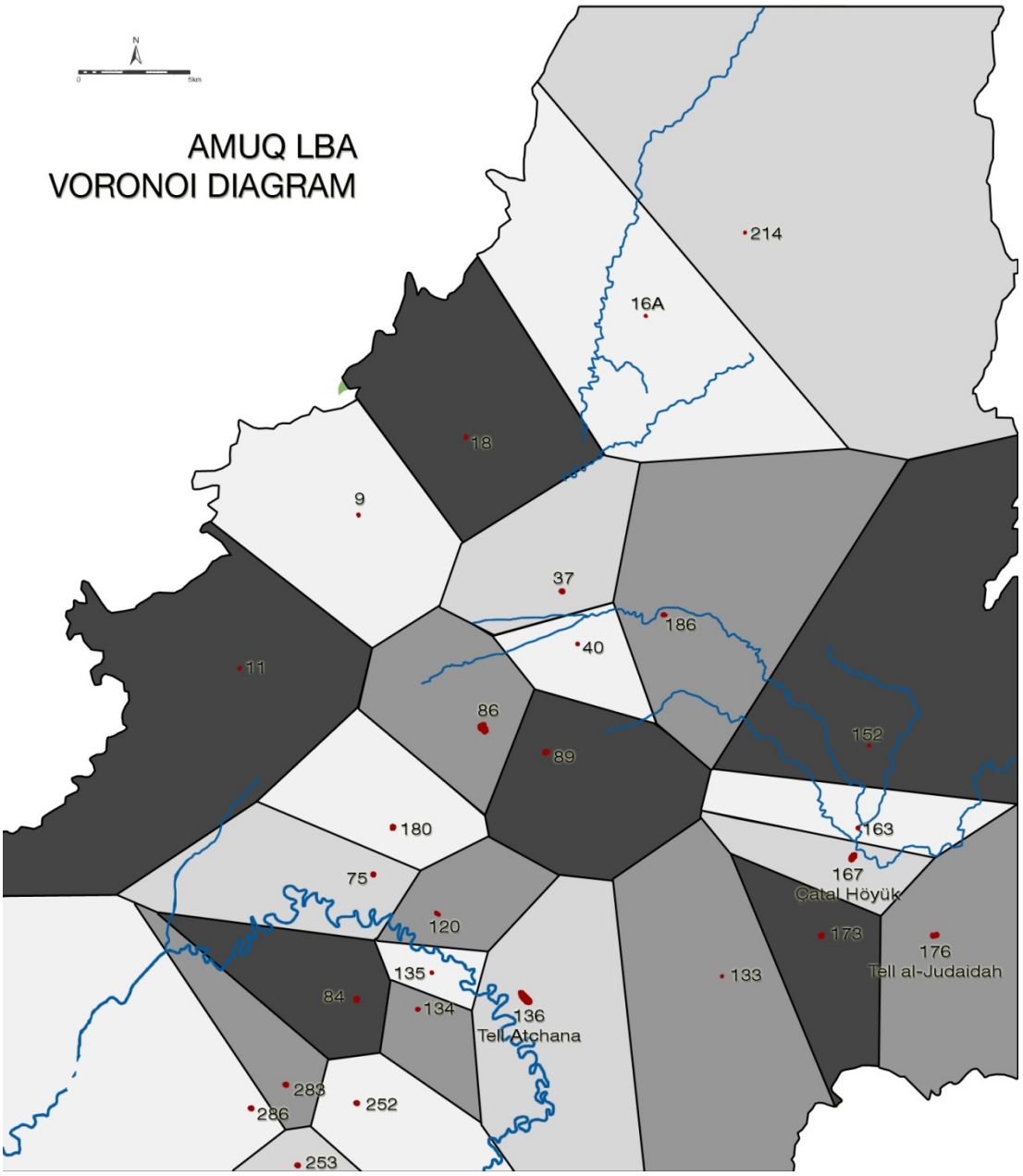


Figure 27 Voronoi diagram of Amuq LBA settlements

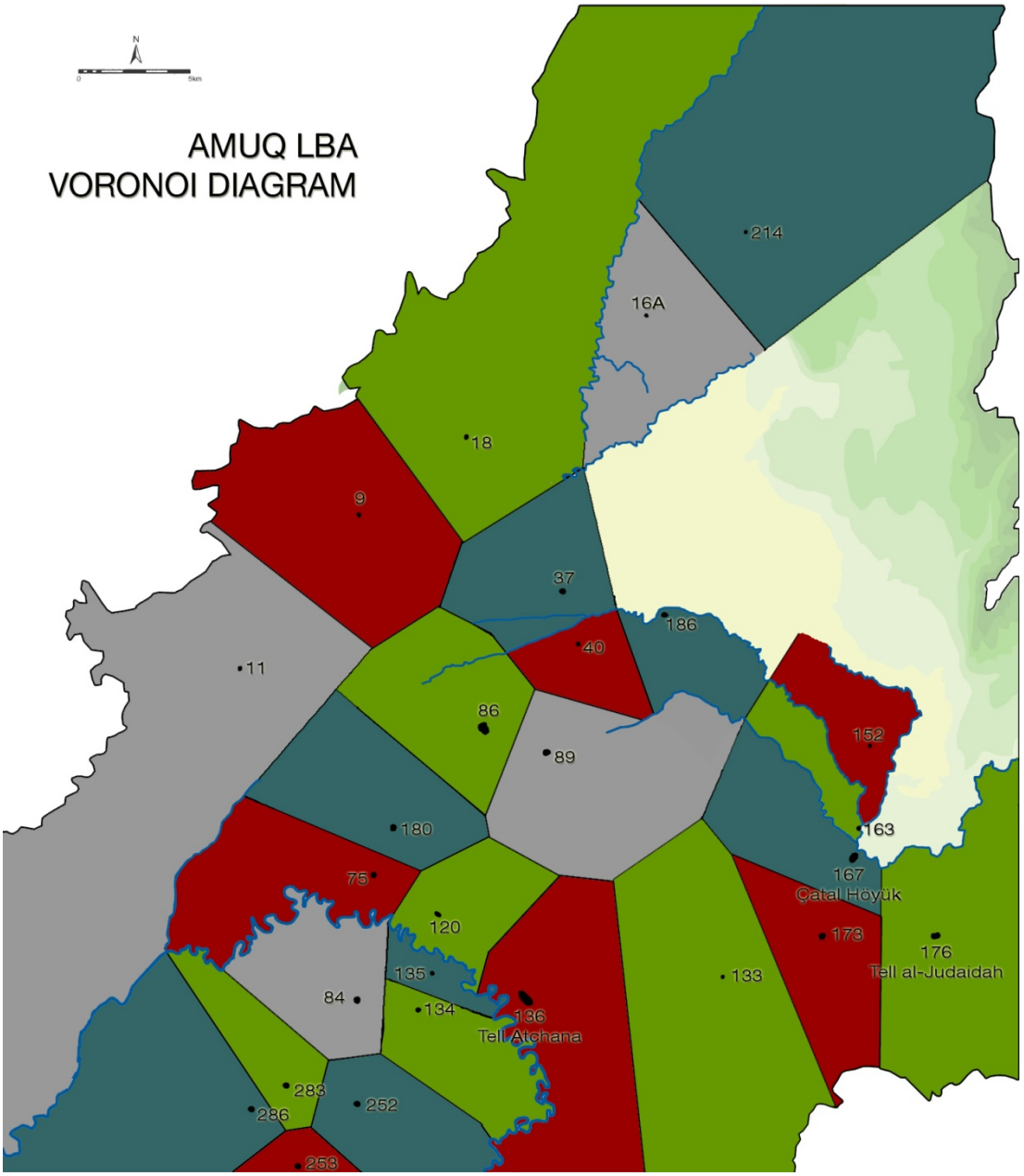


Figure 28 Voronoi diagram of Amuq LBA settlements, with borders defined by rivers

Amuq:			
Nearest Neighbor Analysis for LBA			
1	3,28	15	8,7
2	1,85	16	2,45
3	1,85	17	4,09
4	3,24	18	5,92
5	2,77	19	5,92
6	1,72	20	5,83
7	1,72	21	5,83
8	4,44	22	3,66
9	2,63	23	1,34
10	2,26	24	1,34
11	2,26	25	4,74
12	3,11	26	3,81
13	3,11	27	5,06
14	2,45		
Total distance:		95,38	
Total area:		1781, 6010 km2	
Total site number		27	
D(Obs)		3,5325	
Rn		0,8697	
	RESULT:	TENDENCY TOWARDS	
		CLUSTERING	

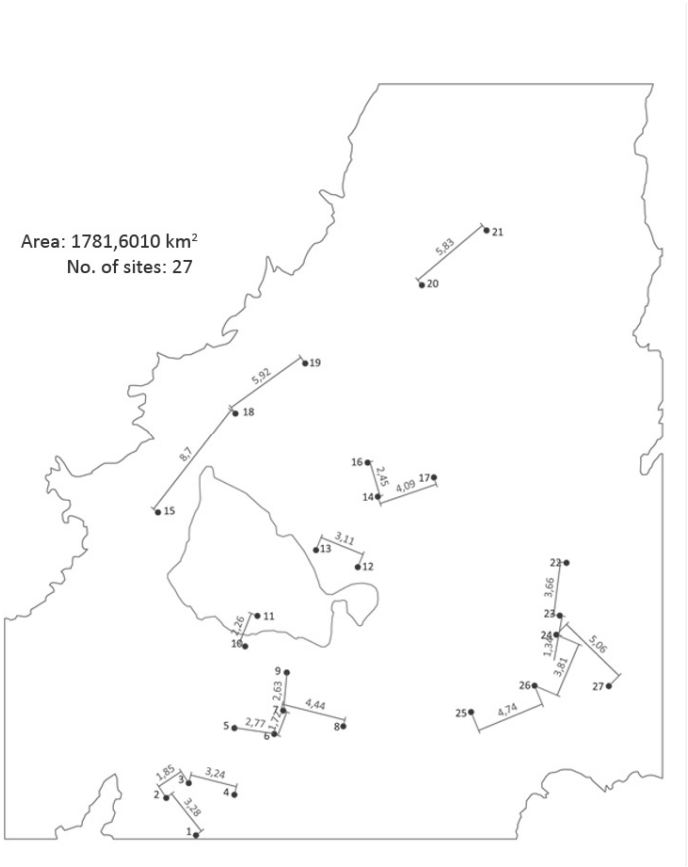


Figure 29 Nearest Neighbour Analysis of Amuq LBA settlements

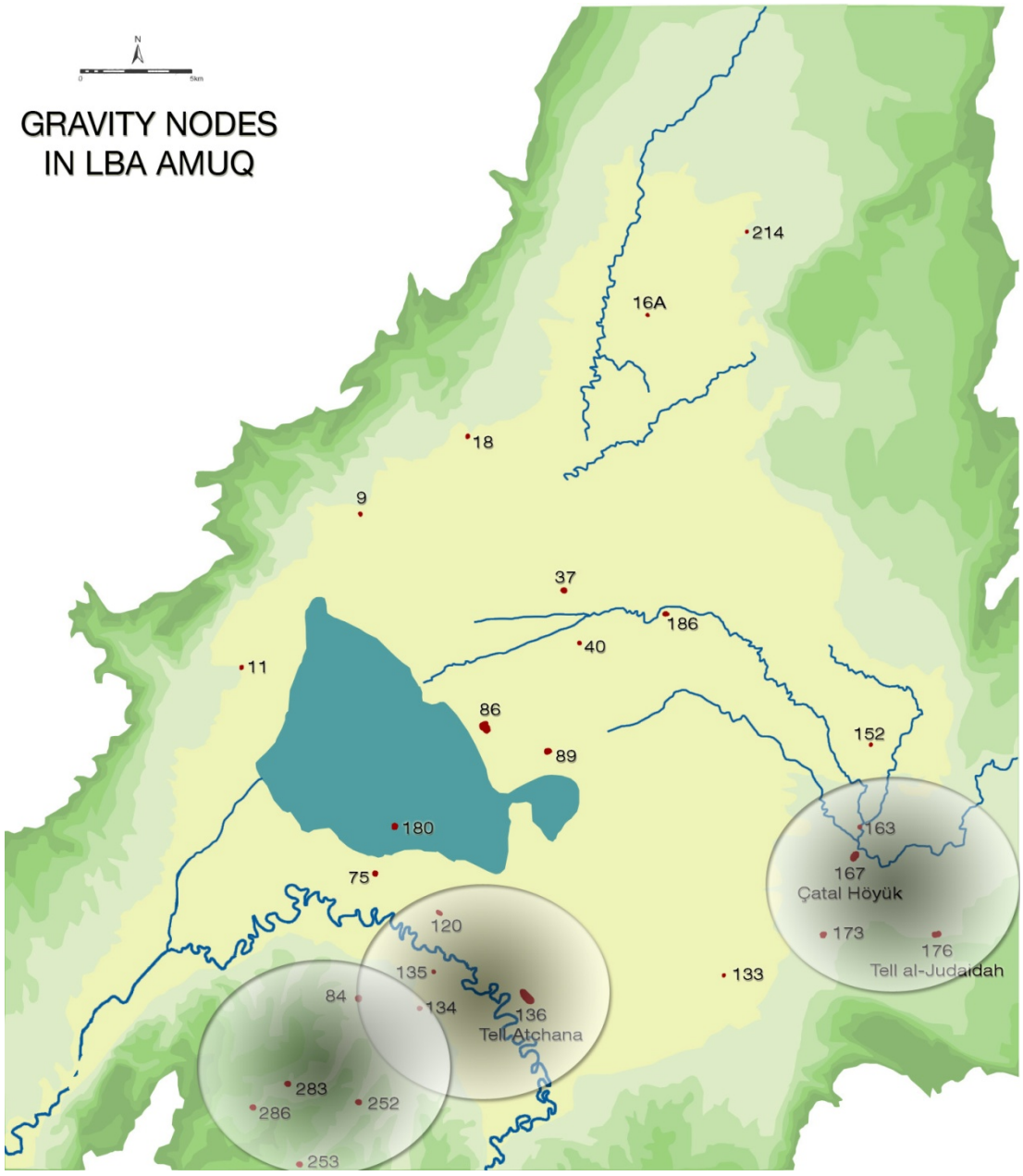


Figure 30 Gravity nodes in the LBA Amuq

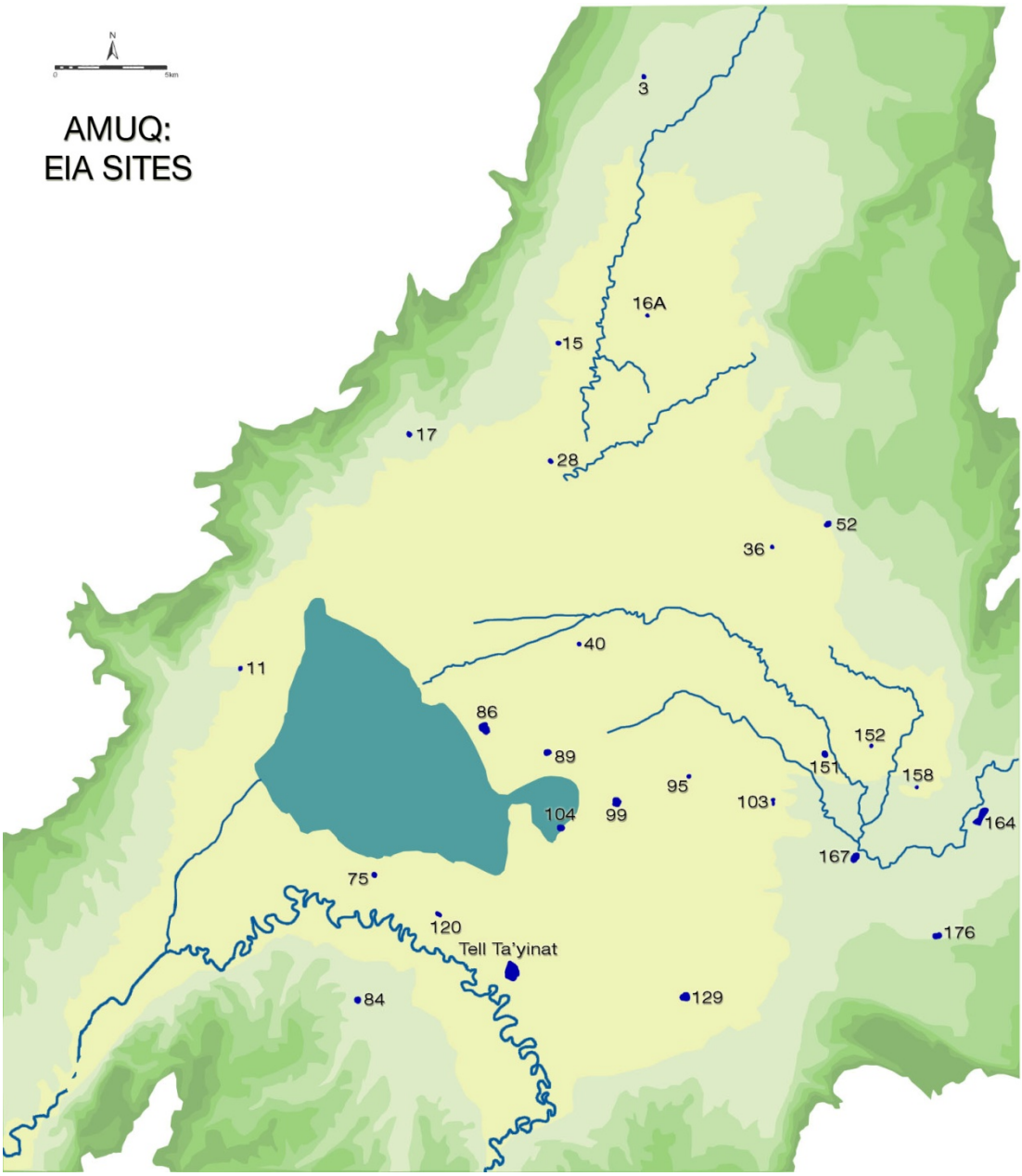


Figure 31 EIA sites in the Amuq

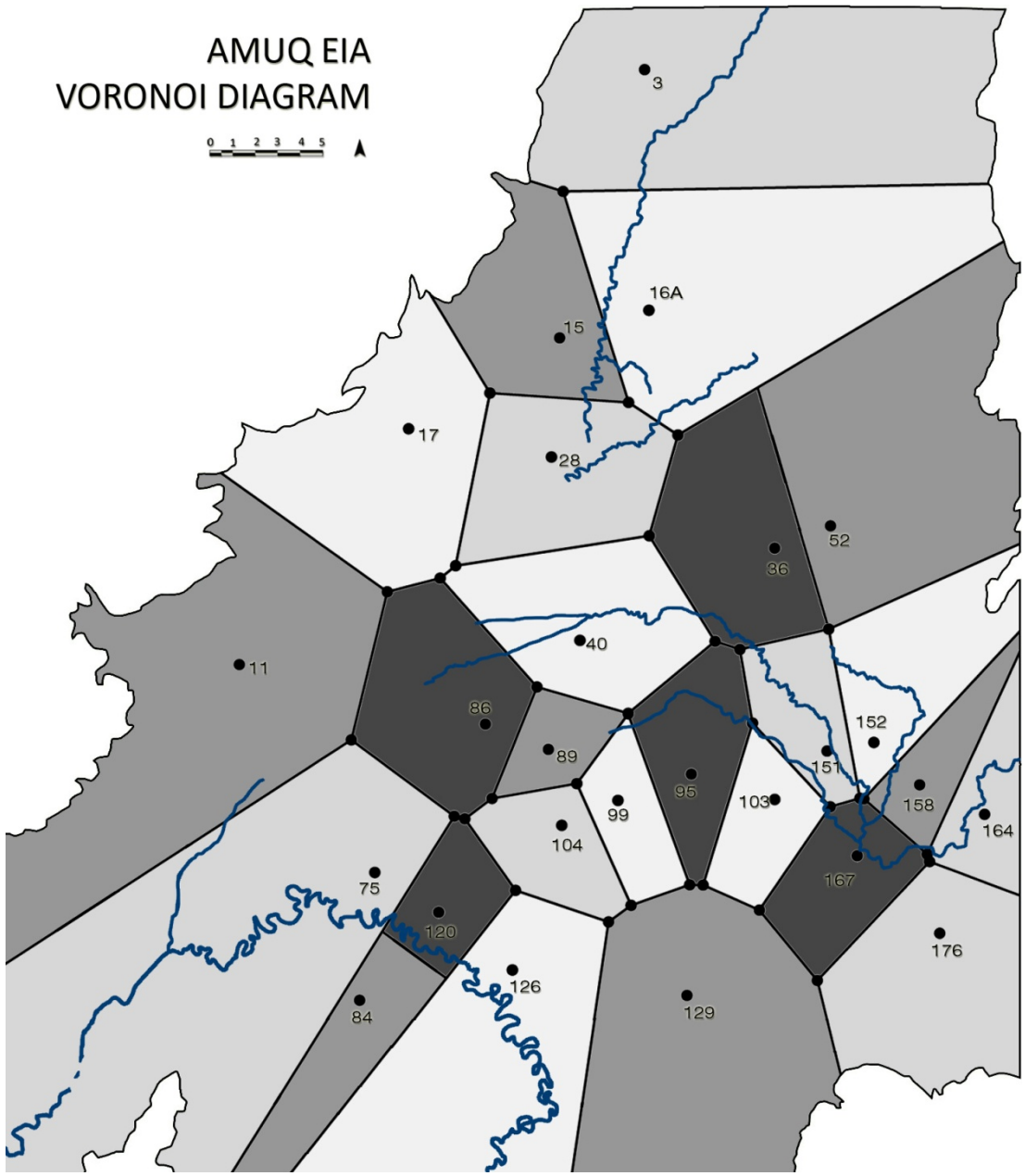


Figure 32 Voronoi Diagram of the Amuq EIA Settlement

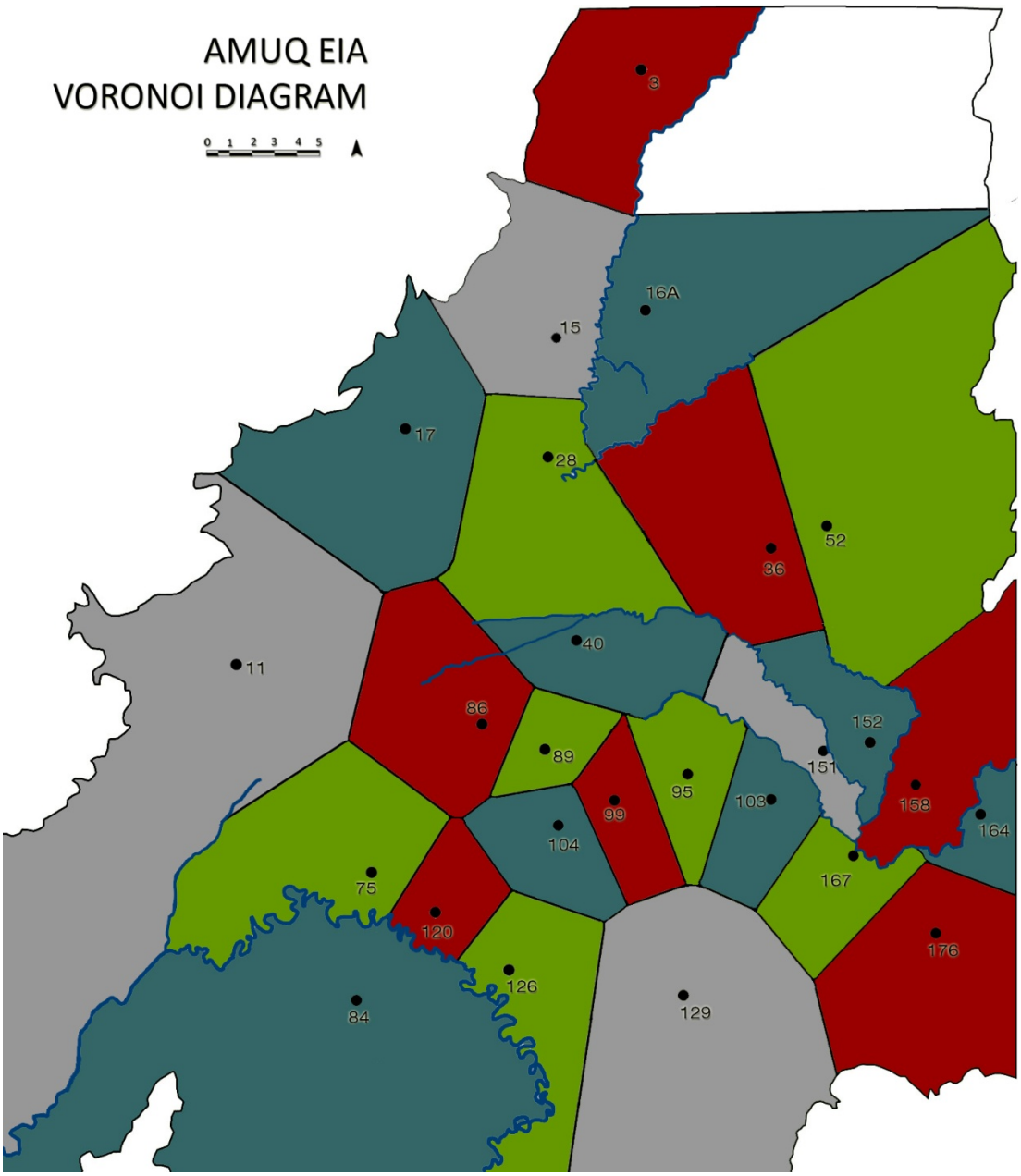


Figure 33 Voronoi diagram of Amuq EIA settlements, with borders defined by rivers

Amuq:			
Nearest Neighbor Analysis for EIA			
1	3,21	14	4,03
2	3,21	15	3,04
3	3,99	16	5,39
4	3,62	17	12,39
5	2,62	18	6,21
6	3,32	19	5,1
7	2,9	20	3,99
8	2,9	21	3,99
9	7,52	22	10,29
10	3,03	23	2,58
11	2,03	24	2,58
12	2,03	25	4,83
13	2,68		
Total distance:		107,48	
Total area:		1781, 6010 km2	
Total site number		25	
D(Obs)		4,2992	
Rn		1,01	
	RESULT:	RANDOM	

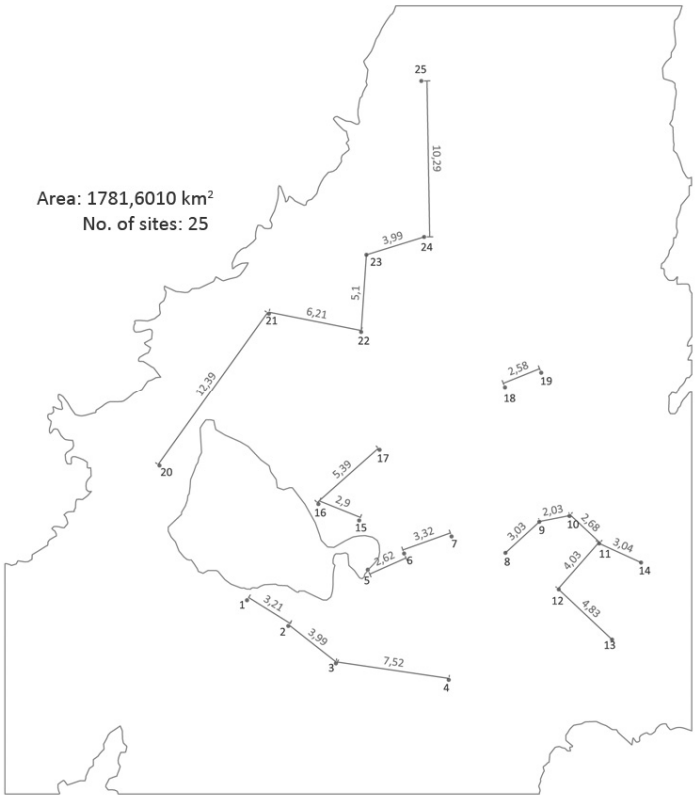


Figure 34 Nearest Neighbour Analysis of Amuq EIA settlements

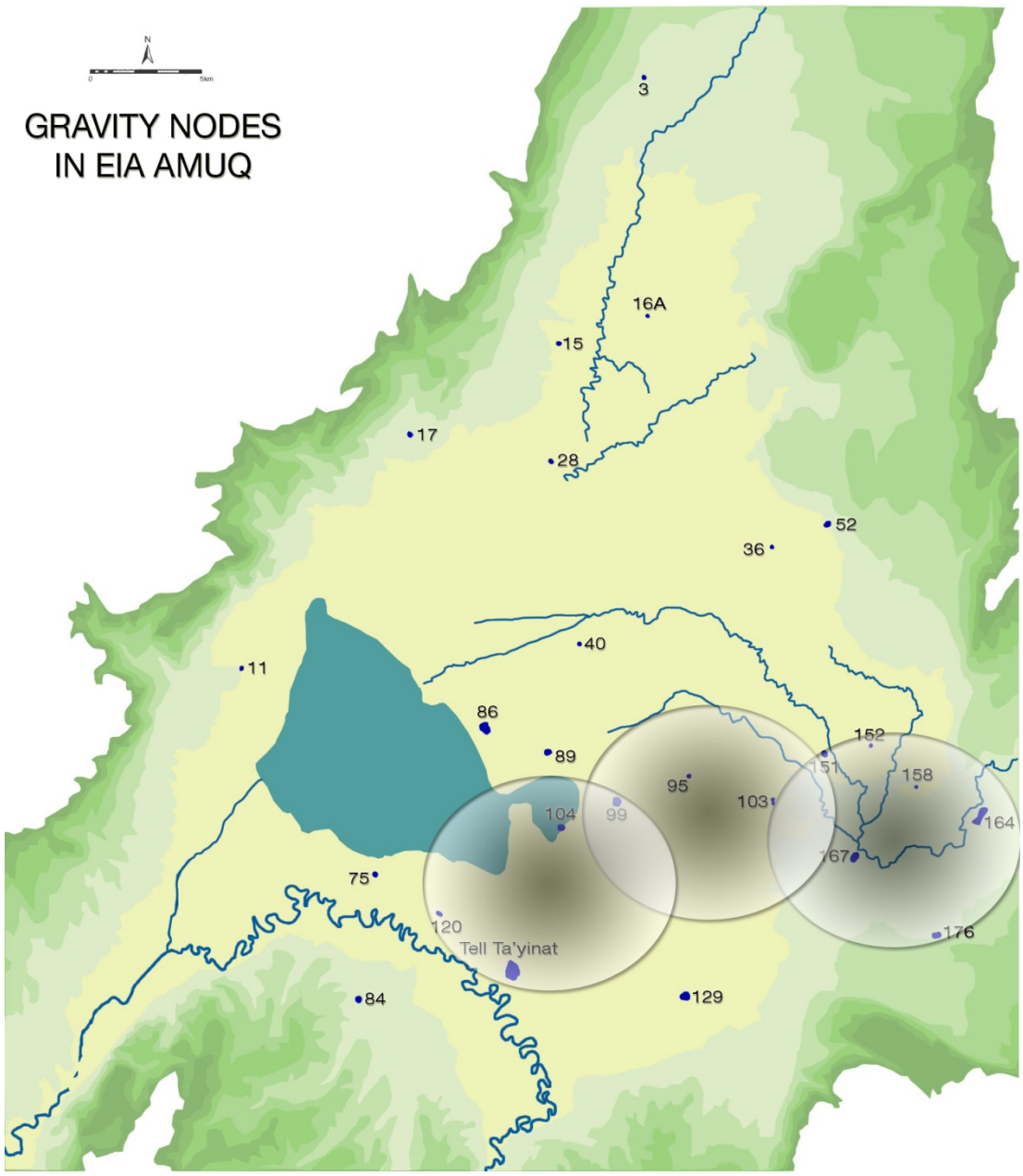


Figure 35 Gravity nodes in the EIA Amuq

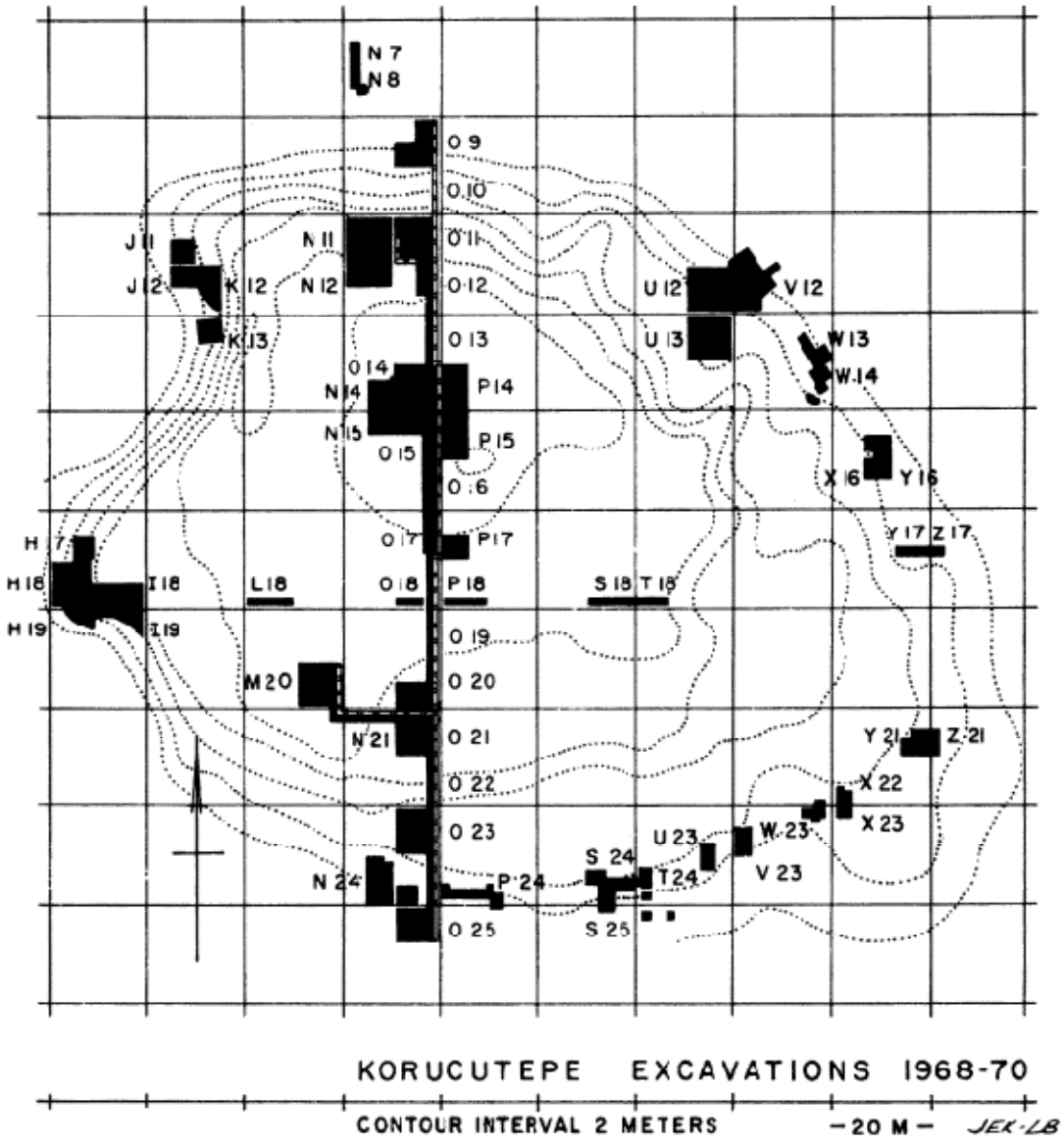


Figure 36 Plan of Korucutepe mound, with the trenches excavated between 1968 and 1970 highlighted in black.
(after van Loon, 1973: 377)

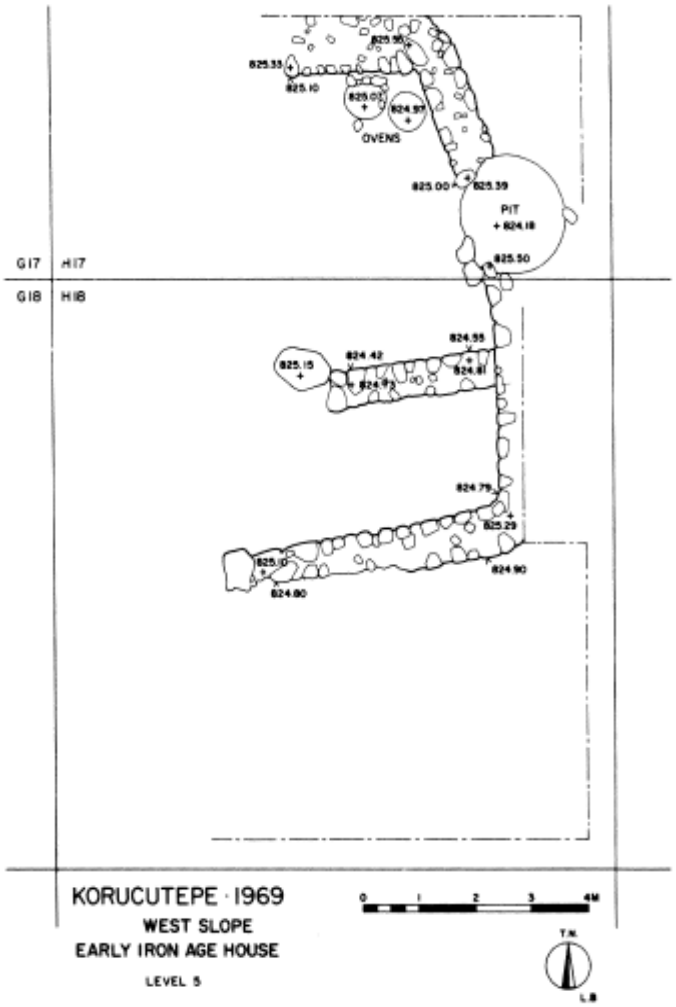


Figure 37 Plan of domestic structure built on west slope of Korucutepe in Stratum CXXXIV (ca. 1050 BC)
(after van Loon, 1973: 395)

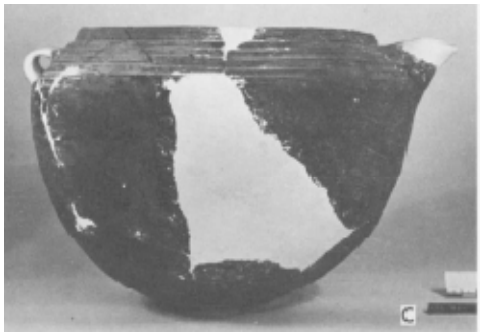


Figure 38 Red burnished pot with handles and spout from H18, Stratum CXXXIV
(after van Loon, 1973: pl.19C)

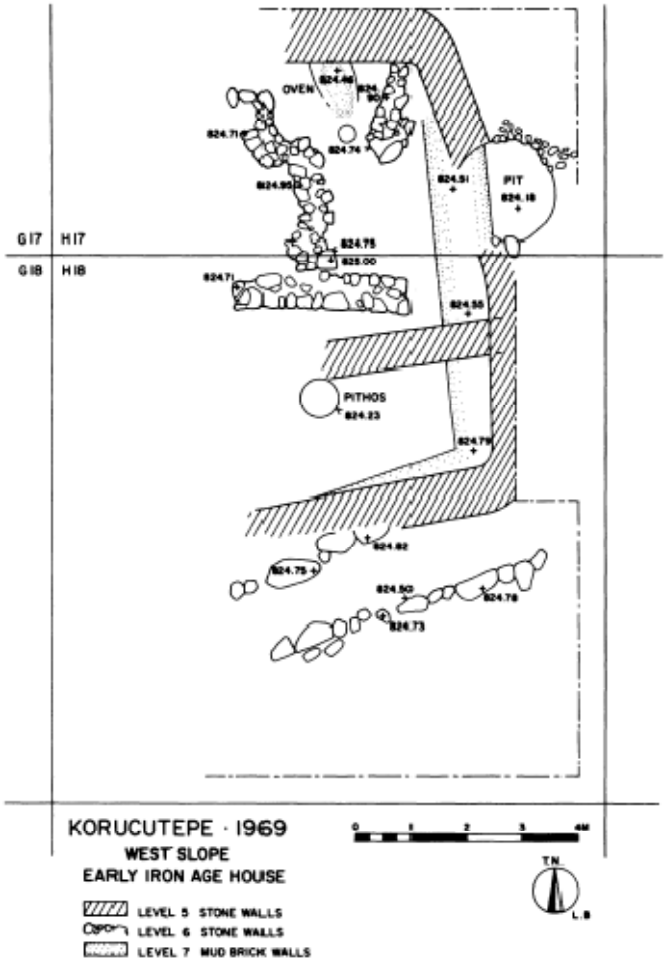


Figure 39 Plan of domestic reoccupation of Stratum CXXI in trench H17-18.
Level 7 corresponds with Stratum CXXXII, and hence represents the EIA plan of the structure. (after van Loon, 1973: 394)

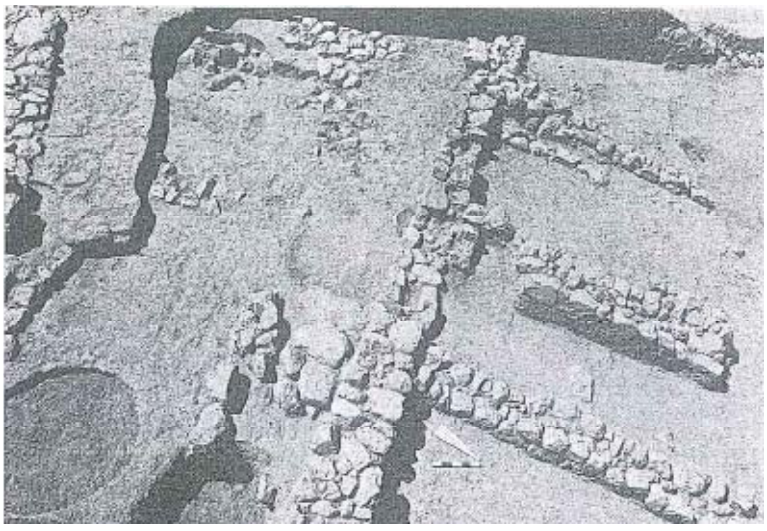


Figure 40 LBA structure from Norşun Tepe trench Q18
(after Hauptmann, 1972: pl. 60/1)

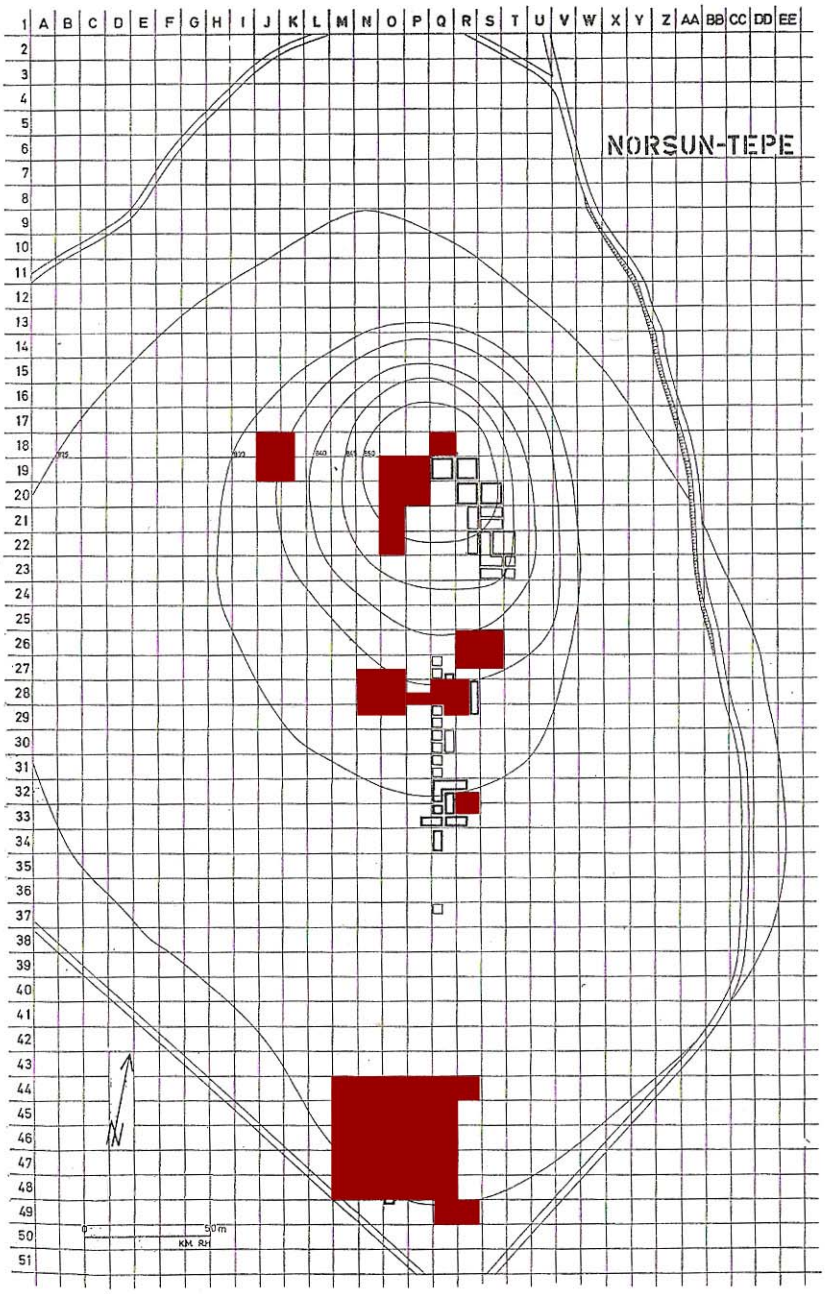


Figure 41 Plan of Norşun Tepe, with the trenches that produced EIA material have been highlighted
(Basemap from Hauptmann, 1972: pl. 47/1. Trenches have been compiled from all the season reports of Norşun Tepe published in the METU Keban volumes.)

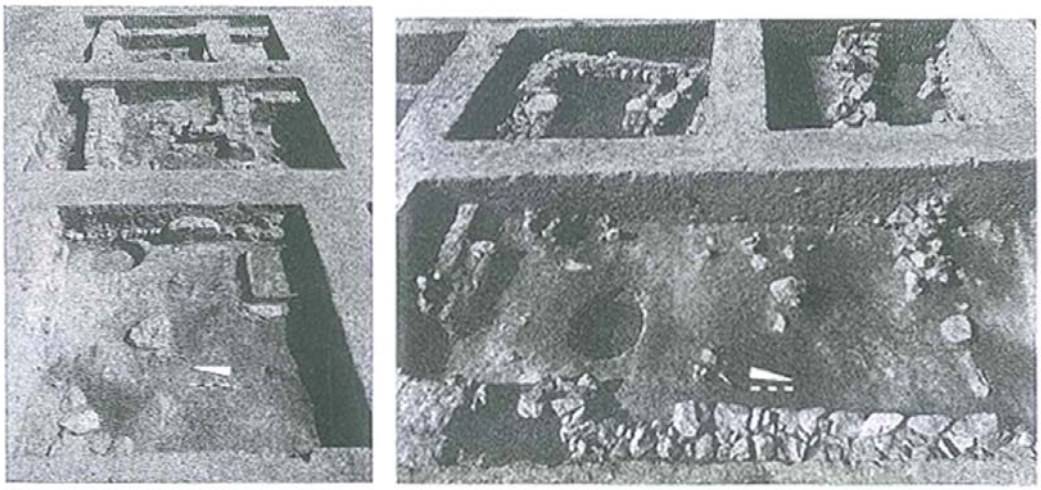


Figure 42 EIA house from Norşun Tepe with a hearth and pits
(after Hauptmann, 1970: pl. 3/1 and 3/2)

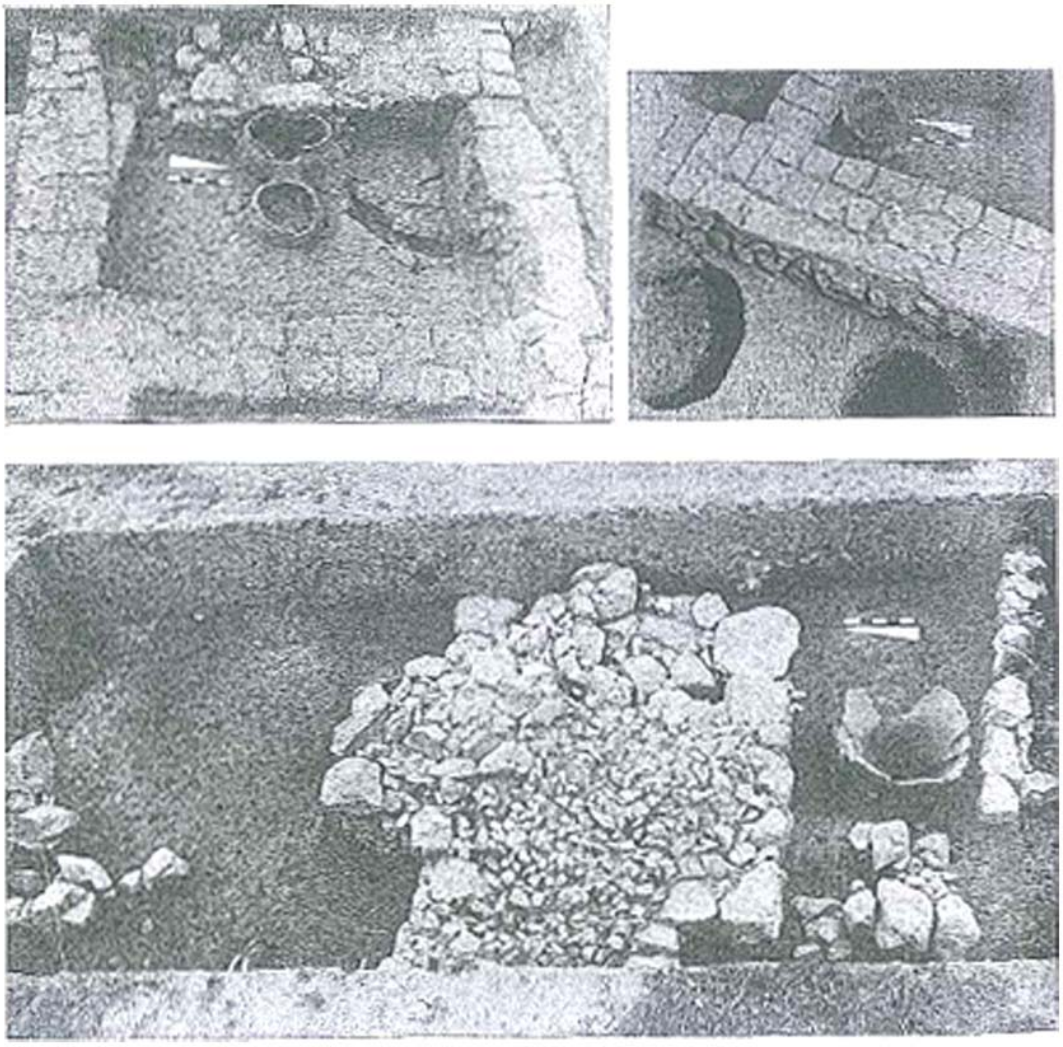


Figure 43 EIA house from Norşun Tepe with a hearth and pits
(after Hauptmann, 1970: pl. 4/1, 4/2 and 4/3)

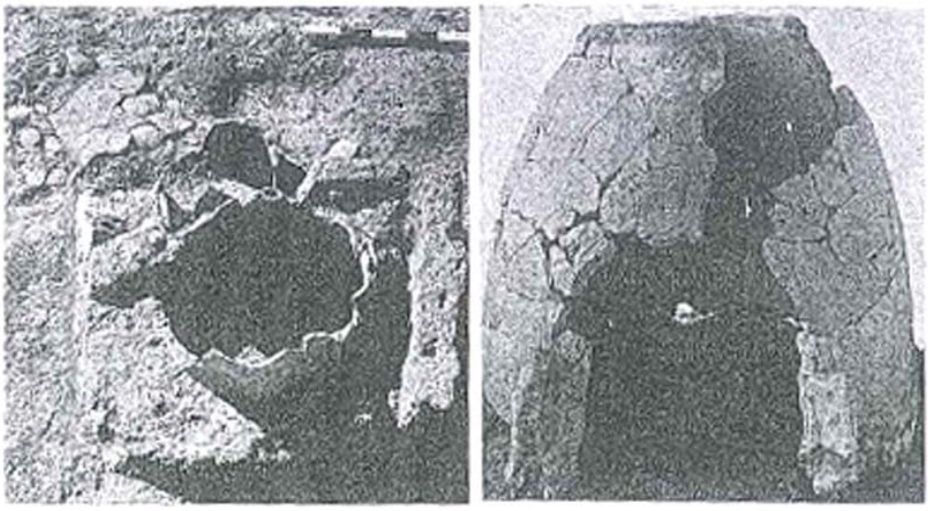


Figure 44 Kiln in R28 belonging to an EIA structure in Norşun Tepe (left), and its reconstruction (right)
(after Hauptmann, 1971: pl. 53/2 and 53/3)

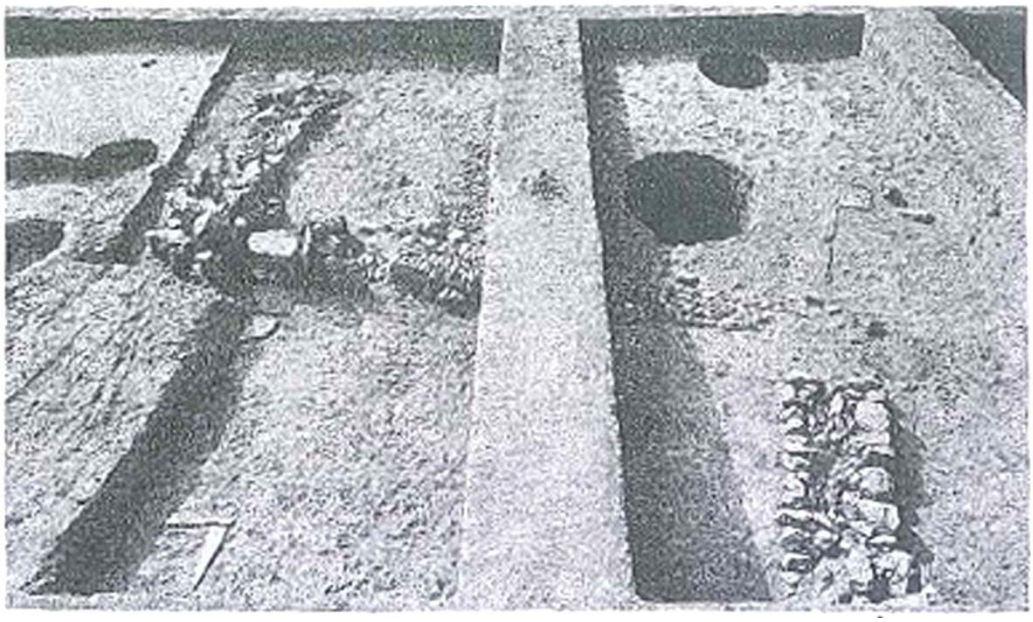


Figure 45 EIA house at Norşun Tepe, Trenches Q/R 32/33
(after Hauptmann, 1971: pl. 53/1)

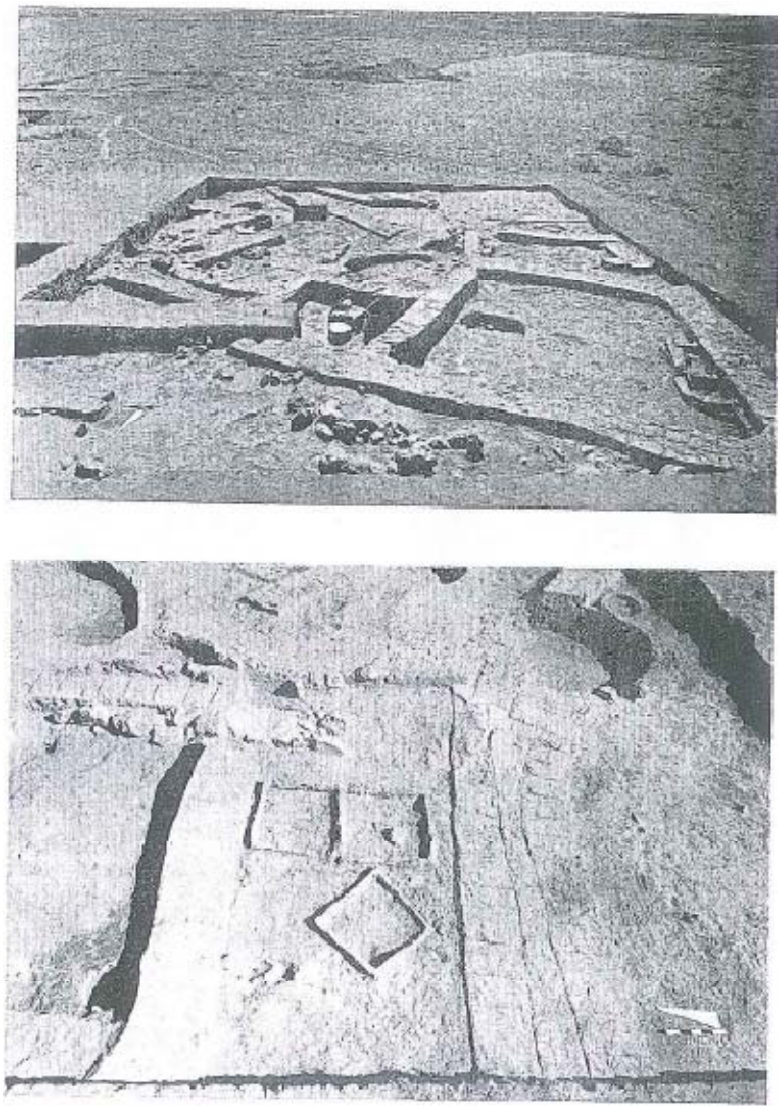


Figure 46 Village house in Norşun Tepe trenches N/O 27-29
(after Hauptmann, 1976: pl. 43/1 and 43/2)

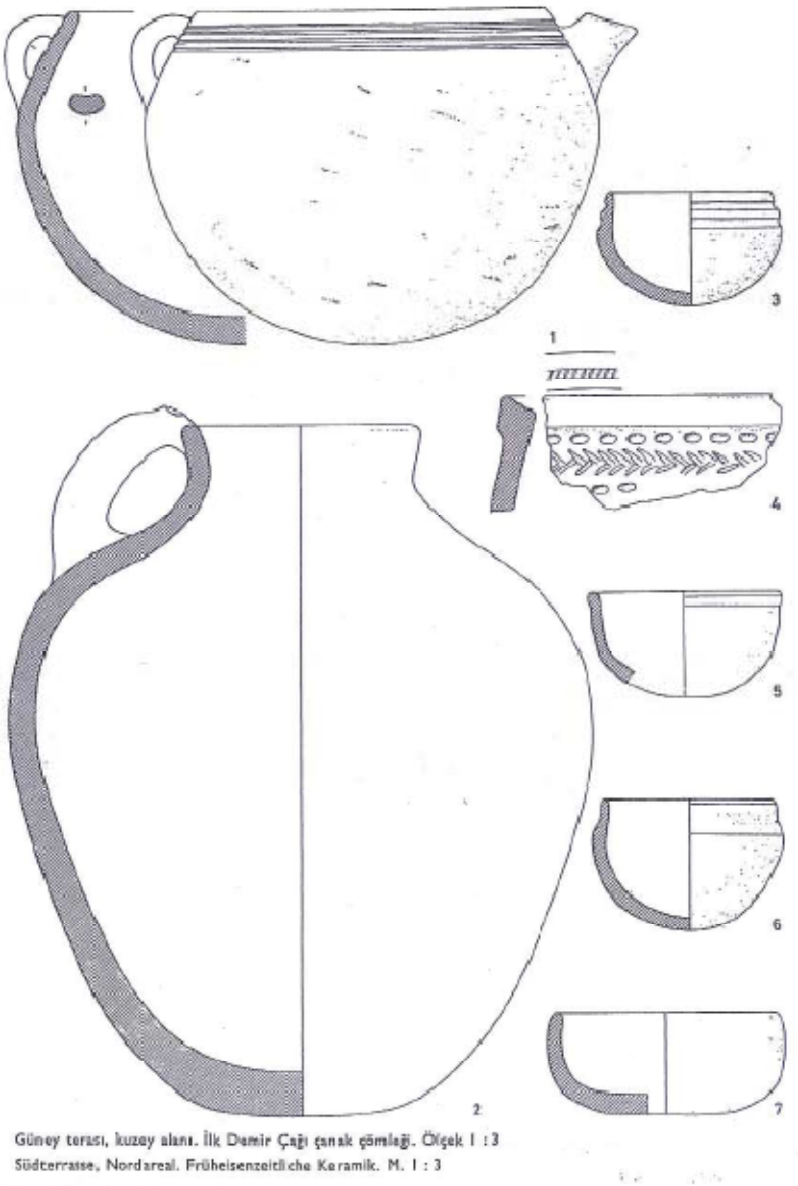


Figure 47 Pottery from the village house with courtyard in Norşun Tepe, trenches N/O 27-29
(after Hauptmann, 1976: pl. 55)

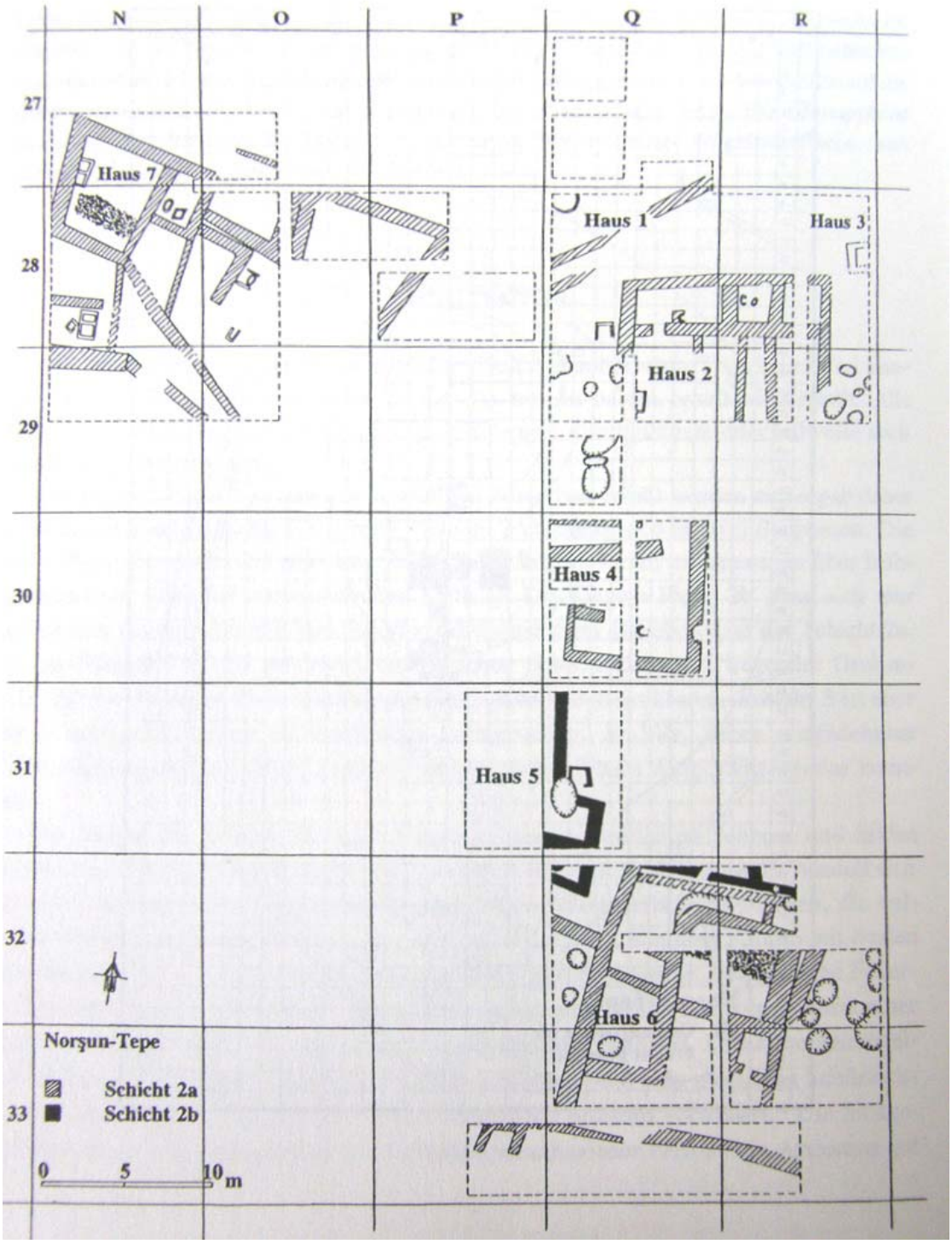


Figure 48 Norşun Tepe EIA architecture, Levels 2a and 2b
(after Bartl, 1994: 478)

Figure 49 Infant pot burial from O44b-a in Norşun Tepe
(after Hauptmann, 1972: pl. 67/1 and 67/2)

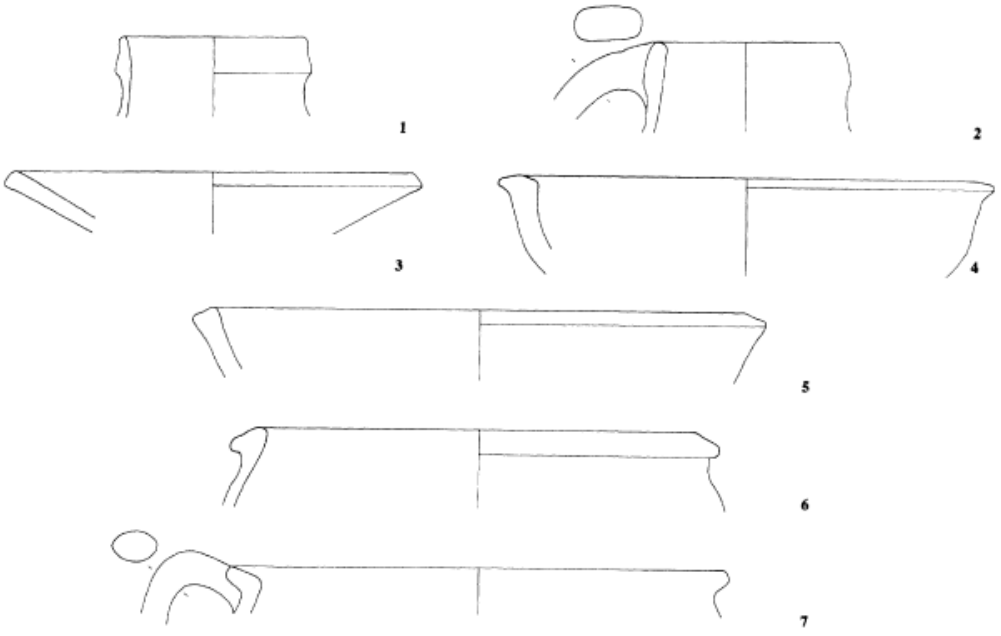
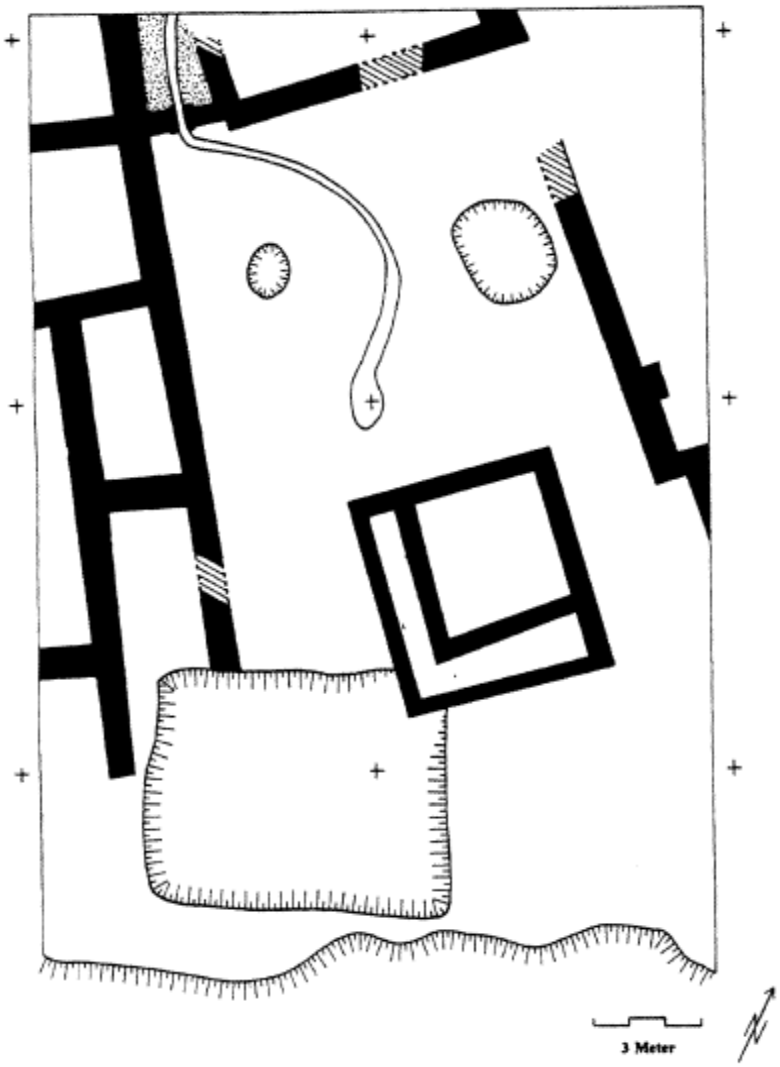


Figure 50 Ceramic forms in Lidar Höyük at the beginning of the EIA
(after Müller, 1999: 126)



q

Figure 51 Lidar Höyük Building Phase <6e2>
(after Müller, 1999: 125)

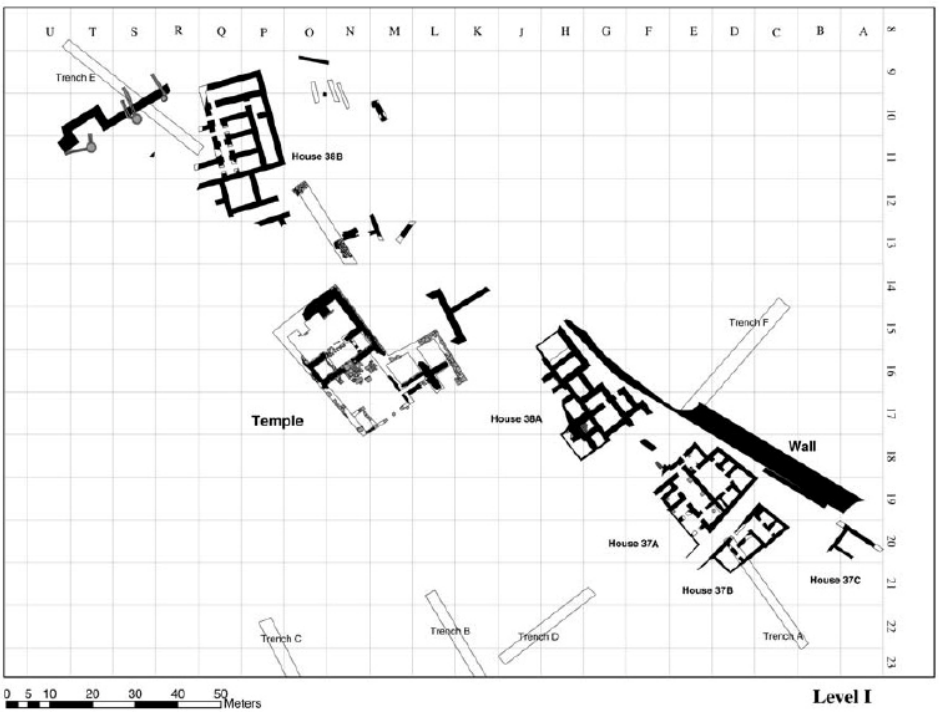


Figure 52 Level 1 at Alalakh
(after Yener, 2005: 144)

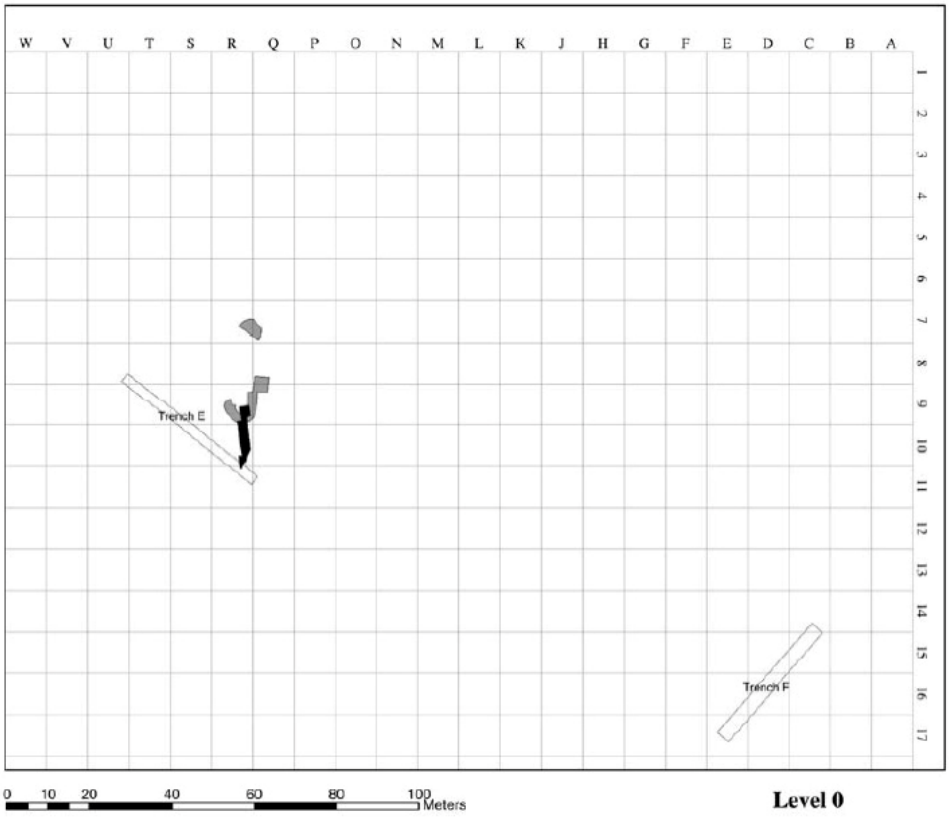


Figure 53 Level 0 at Alalakh
(after Yener, 2005: 144)

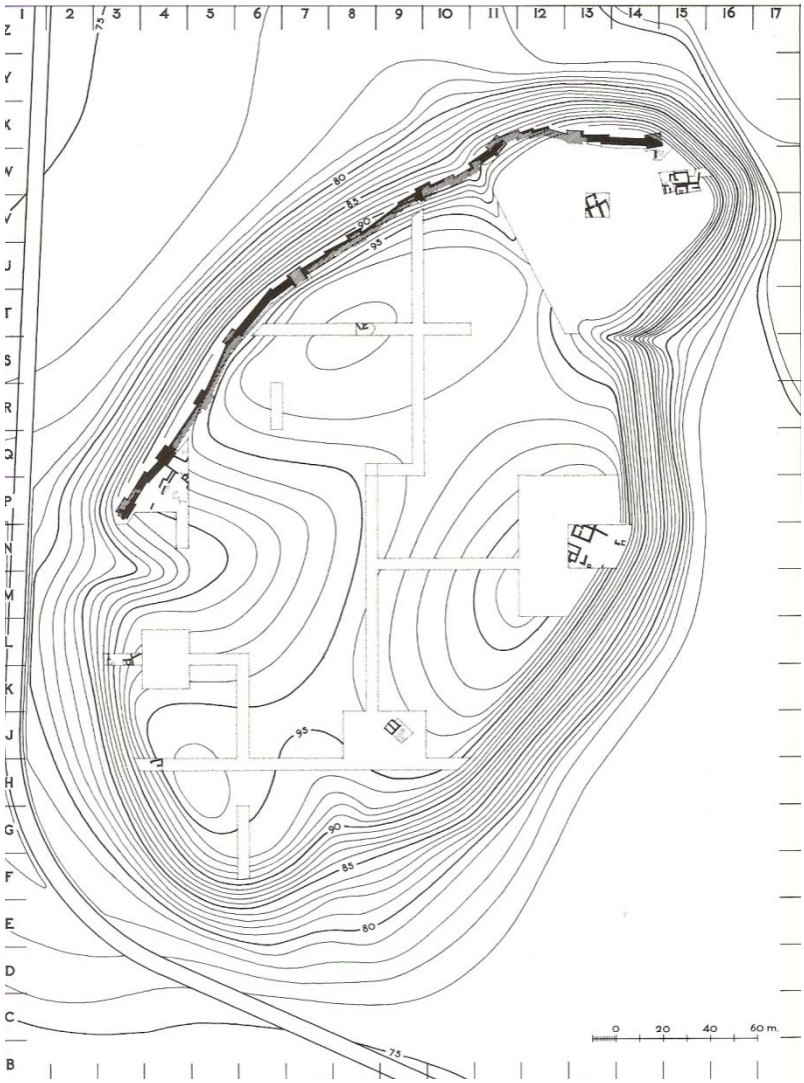
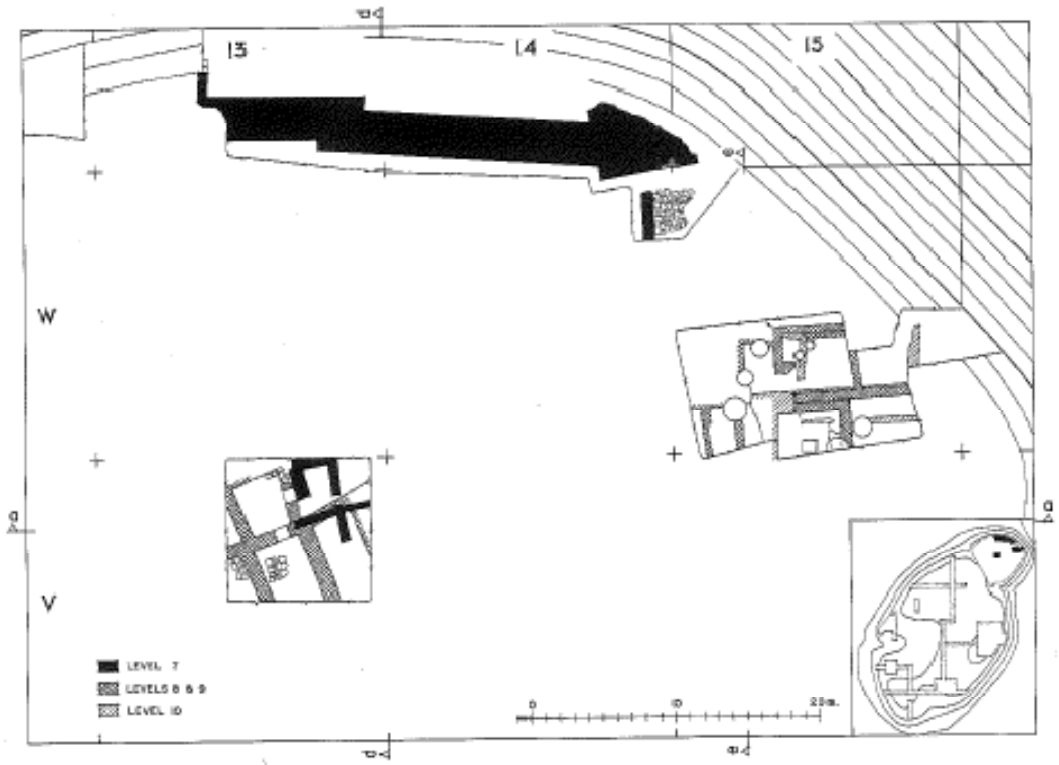


Figure 54 Phase N remains in Çatal Höyük
(after Haines, 1971: pl. 19)



ÇHATAL HÜYÜK. PLAN OF AREA I, LEVELS 10–7

Figure 55 Çatal Höyük, Plan of Area I, Levels 10-7
(after Haines, 1971: pl. 22)

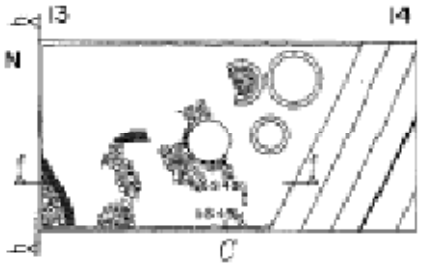


Figure 56 Çatal Höyük, Area I, Level 11
(after Haines, 1971: pl. 29C)

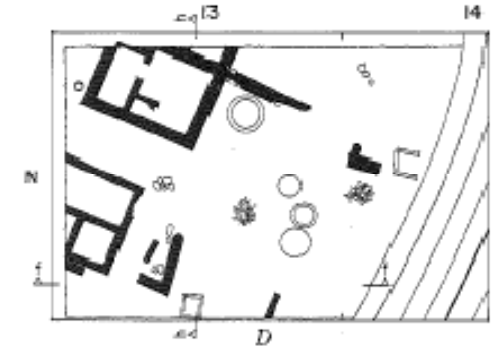


Figure 57 Çatal Höyük, Area I, Level 10
(after Haines, 1971: pl. 29D)

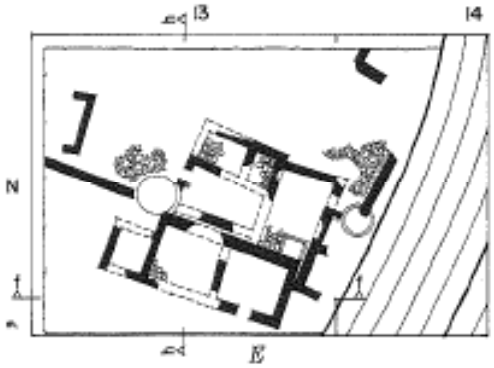


Figure 58 Çatal Höyük, Area I, Level 9
(after Haines, 1971: pl. 29E)

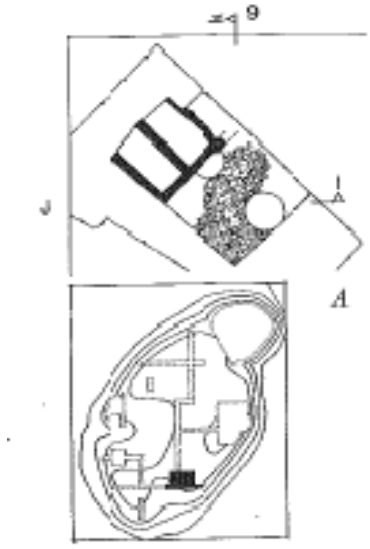


Figure 59 Çatal Höyük, Plan of Area IVa, Level 5
(after Haines, 1971: pl. 35A)

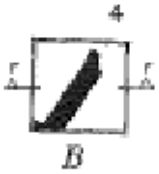


Figure 60 Çatal Höyük, Plan of Area V, Level 4
(after Haines, 1971: pl. 37B)

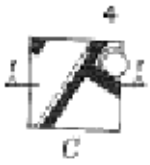


Figure 61 Çatal Höyük, Plan of Area V, Level 3
(after Haines, 1971: pl. 37C)

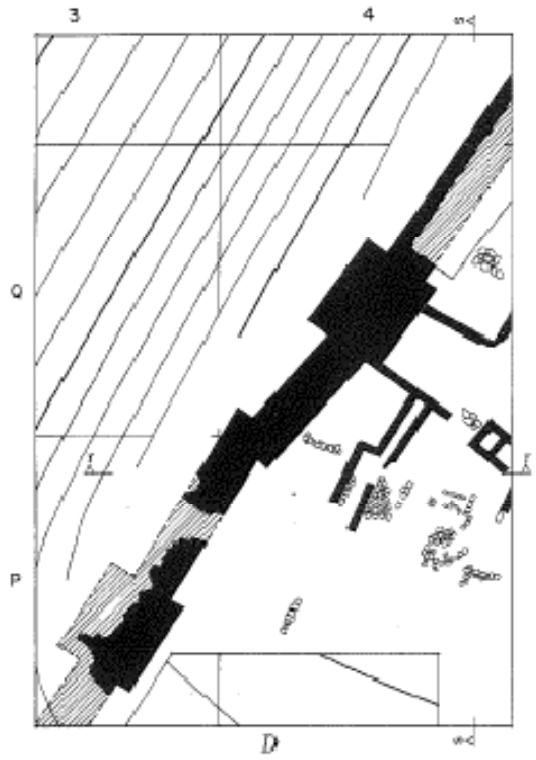


Figure 62 Çatal Höyük, Plan of Area V, Level 2
(after Haines, 1971: pl. 37D)

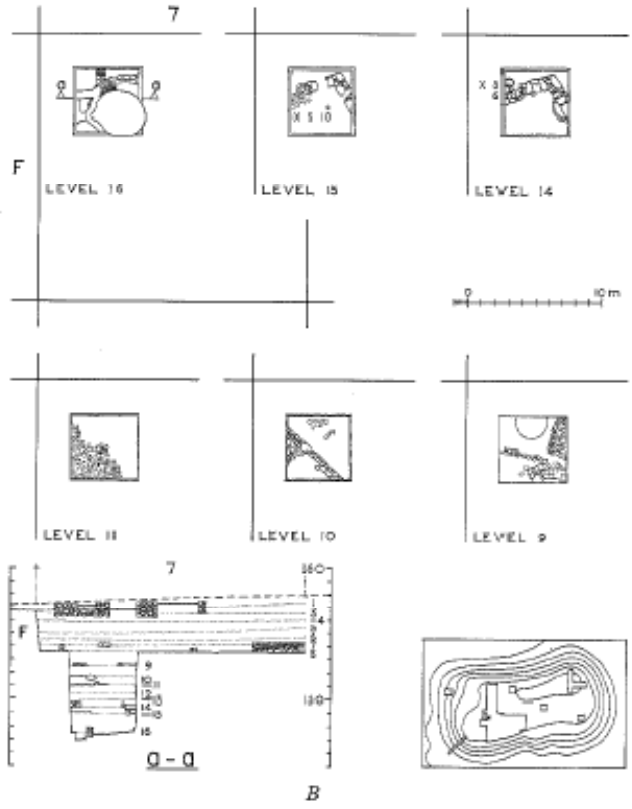
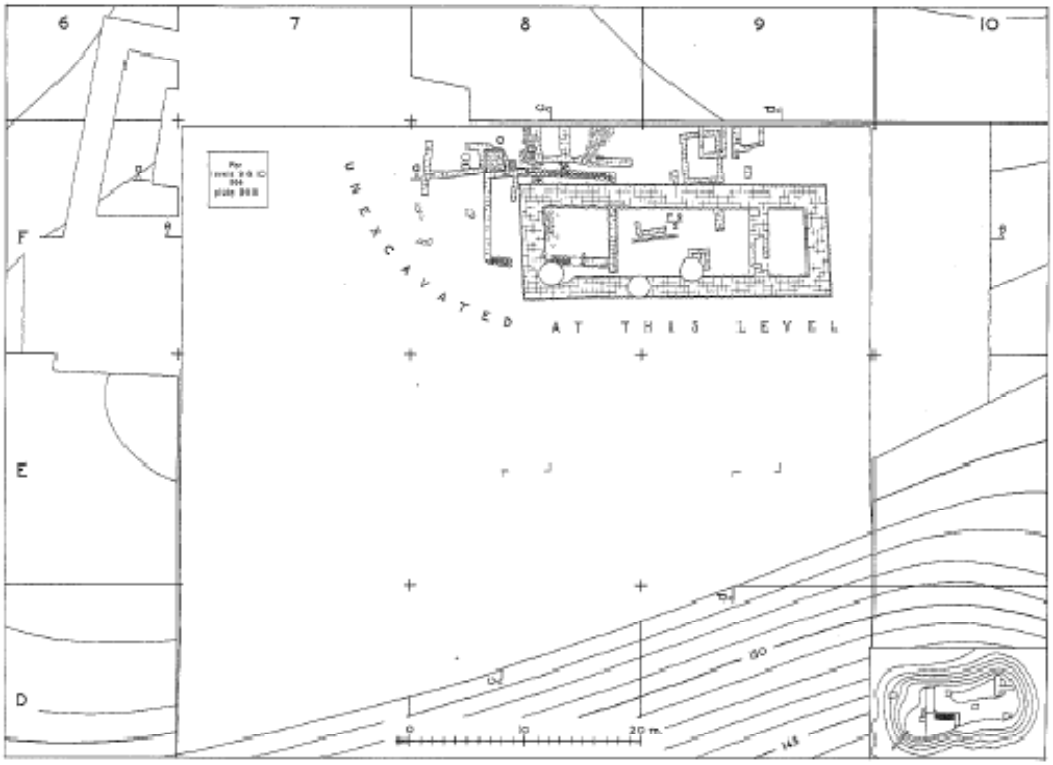


Figure 63 Tell al-Judaidah, Plans and Sections of Test Pit in F7, Levels 16-9
(after Haines, 1971: pl. 54B)



TELL AL-JUDAIDAH. PLAN OF E–F 7–9, LEVELS 10–9

Figure 64 Tell al-Judaidah, Plan of E-F 7-9, Levels 10-9
(after Haines, 1971: pl. 55)

B

Figure 65 Tell al-Judaidah, Squares F 9-7 at Levels 10-8, Looking West (after Haines, 1971: pl. 42B)

A

Figure 66 Tell al-Judaidah, Squares D-F 7-10 at Level 7, Looking East (after Haines, 1971: pl. 43A)

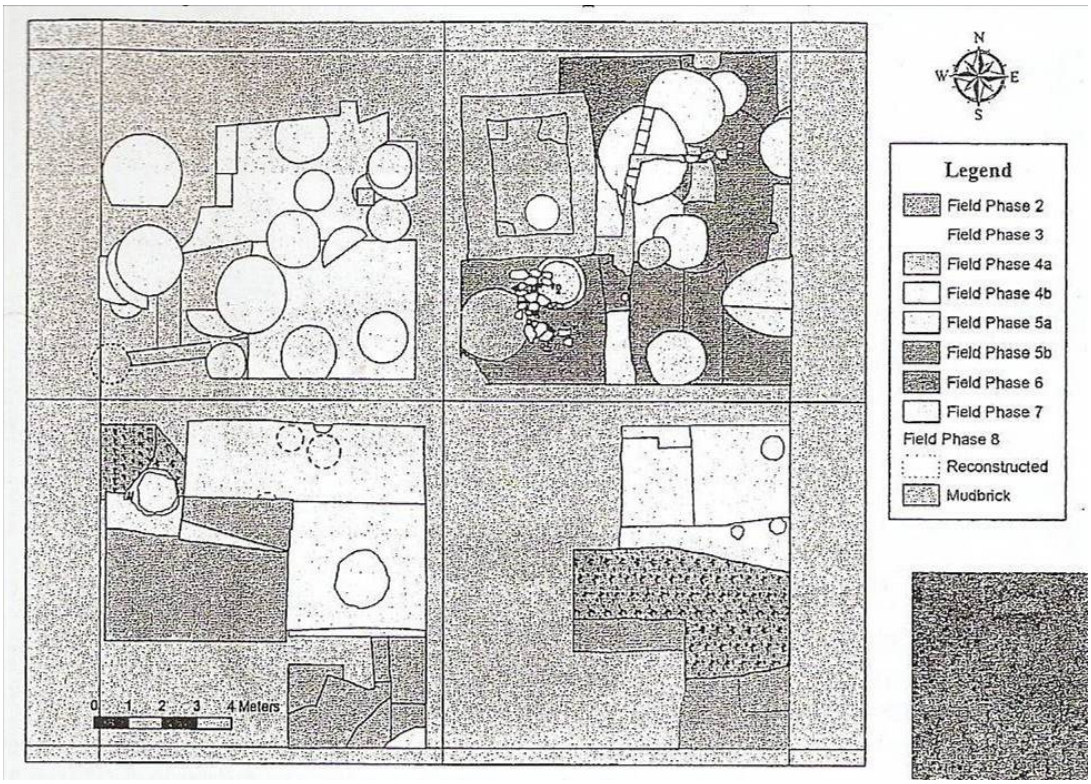


Figure 67 Field Phases and their architectural remains
(after Harrison, 2009: 181)

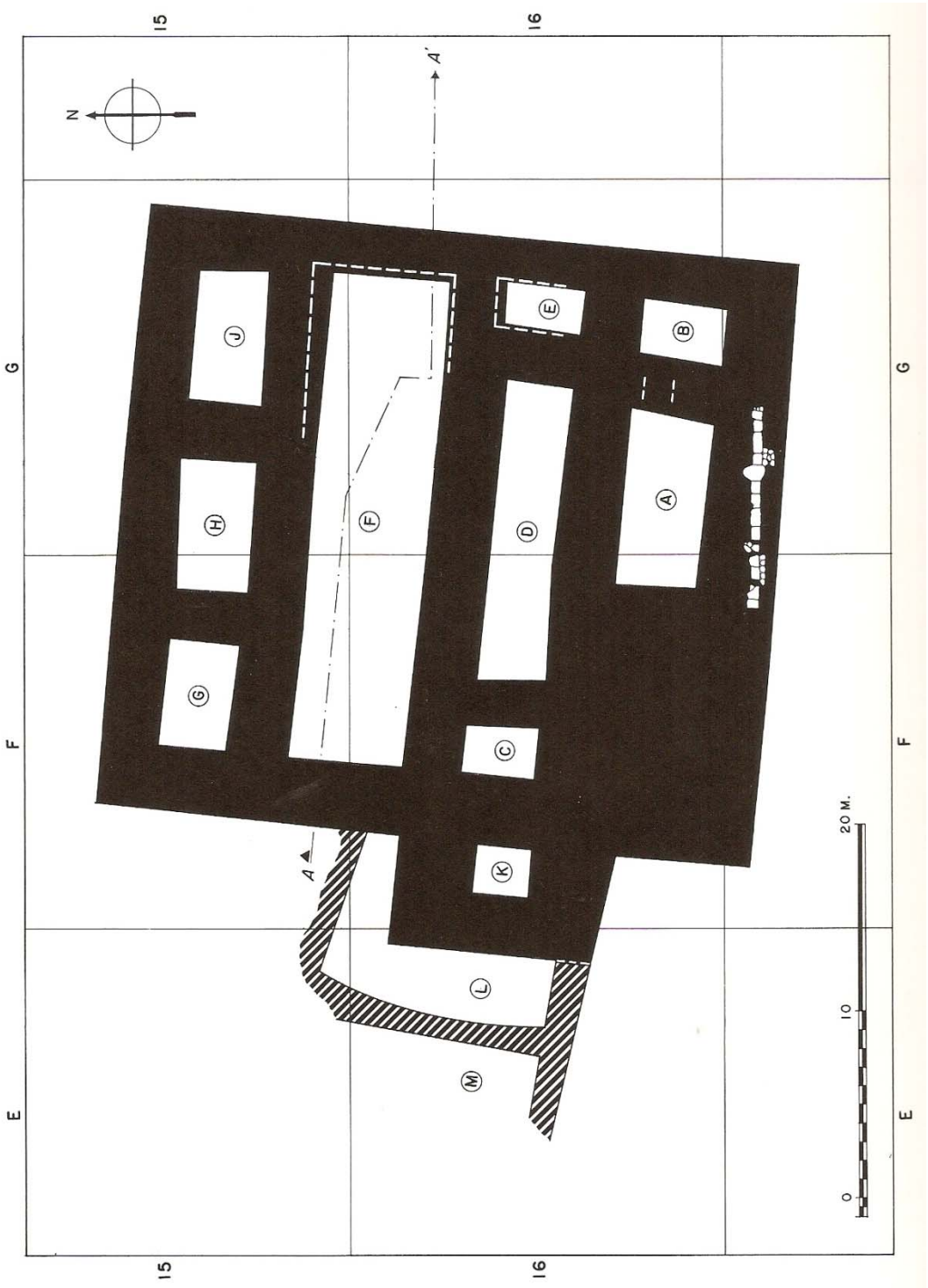


Figure 68 Plan of Building XII at Tell Ta'yinat (First BP)
(after Haines, 1971: pl. 94)

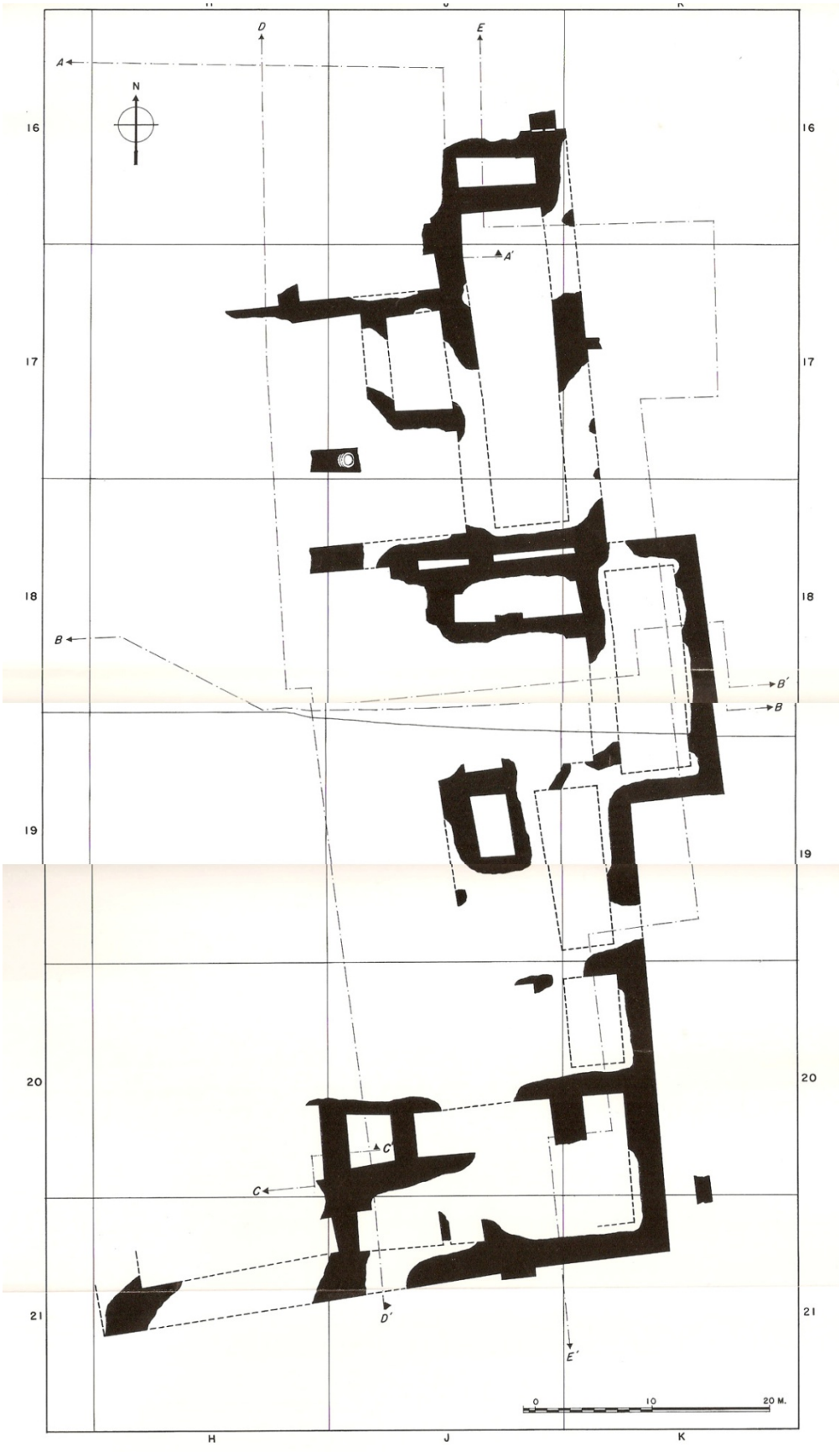


Figure 69 Plan of Building XIV at Tell Ta'yinat (First Building Period) (after Haines, 1971: pl. 95)