SURVEYING THE PONTIC LANDSCAPE THROUGH THE FORTRESSES OF THE MITHRADATIDS

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Approval of the Graduate School of Social Sciences

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ABSTRACT

SURVEYING THE PONTIC LANDSCAPE THROUGH THE FORTRESSES OF THE MITHRADATIDS

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The concept of defense is one of the most common subjects that we come across in Hellenistic history. Due to the turbulent and war oriented nature of the period, it is possible to access a lot of information on the economy, social structure and military organization of the communities via their defense history. The wars between Alexander the Great's commanders who wanted to share the Anatolian territory among themselves after his death, led to administrative gaps. Some kingdoms that took advantage of this conflict gained strength and started to take a place on the stage of history. One of these was the Mithradatic Kingdom that became the sole power in the Central Black Sea Region. The Kingdom carried out a Greco-Persian oriented policy and it had a distinctive administrative structure. Unlike the other kingdoms of the Hellenistic Period, Mithradatids did not have an urbanization policy and made an arrangement for managing the countryside more effectively. The administrative organization of the kingdom consisted of fertile agricultural lands, village communities that turned agricultural products into economic value for the Kingdom, fortresses that overlook the valleys that contained agricultural areas and important passages, and cult centers.

This thesis aims to reveal the military and administrative roles of these fortresses that are scattered within the territory of the Mithradatic Kingdom. With this aim, Geographical Information Systems are used to examine the geographical distribution of the fortresses and their relationships with agricultural areas. The effects of the fortresses on agricultural activities and rural settlements are evaluated and a hypothesis is proposed, with the help of the historical information on their administrative role. Since most of the information about the Kingdom is acquired from the period of the last king Mithradates VI, the war against Rome, as that marked this period, is also elaborated on because it offers information on the military roles of the fortresses. This study is the first to holistically examine Hellenistic Period defense units within the network of military and administrative relations in Anatolia and it provides data for comparisons in future studies.

Keywords: Mithradatic Kingdom, Hellenistic Period, Fortress, Defense, GIS

ÖZ

MİTHRADAT KRALLIK COĞRAFYASINDAKİ KALELERİN TANIMLANMASI

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Savunma Mevhumu Hellenistik dönem tarihinde en çok karşımıza çıkan konulardan biridir. Dönemin çalkantılı ve savaş odaklı doğası gereği, savunma üzerinden toplulukların ekonomisi, sosyal yapısı ve askeri organizasyonu hakkında bir çok bilgiye ulaşmak mümkündür. Büyük İskender'in ölümünden sonra komutanları arasında Anadolu coğrafyasını paylaşmak üzere gerçekleşen savaşlar idari olarak boşlukların oluşmasına neden olmuştu. Bu karmaşayı fırsat bilen bazı krallıklar güçlenerek tarih sahnesinde yerlerini almaya başlamışlardı. Bunlardan bir tanesi de Orta Karadeniz Bölgesi'nin tek gücü haline gelen Mithradat Krallığı'dır. Greko-Pers odaklı bir politika yürüten krallık kendine has bir yönetsel yapıya sahipti. Hellenistik dönemin diğer krallıklarından farklı olarak Mithradatlar kentleşme politikası gütmemiş, kırsalın efektif bir şekilde yönetilmesine dair bir düzenleme gerçekleştirmişti. Verimli tarım arazileri, bu arazilerden elde edilen ürünü krallık ekonomisi için katkıya dönüştüren köy toplulukları ve bunların içinde bulunduğu vadileri, önemli geçiş noktalarını koruyan-gözeten kaleler ile kült merkezleri, krallığın yönetsel organizasyon şemasını oluşturmaktaydı.

Bu tez çalışması Mithradat Krallık coğrafyasında dağılım gösteren kalelerin askeri ve idari görevlerini ortaya koymayı amaçlamıştır. Bunu yaparken kaleler, içinde bulundukları coğrafi koşulları açısından, yerleşim dağılımı ve tarım arazileri ile olan ilişkileri açısından Coğrafi Bilgi Sistemleri üzerinden sorgulanmıştır. Kalelerin tarımsal aktiviteler ve kırsal yerleşimler üzerindeki etkisi değerlendirilerek krallığın yönetim yapısındaki görevlerine ilişkin tarihsel bilginin de yardımıyla önermede bulunulmuştur. Krallık hakkındaki bilgilerin çoğunlukla son kral Mithradates VI döneminden gelmesi itibariyle çalışma, bu döneme damgasını vuran Roma'ya karşı yapılan savaşı da, kalelerin askeri görevlerine dair bilgi içermesi açısından ele almıştır. Bu çalışma, Anadolu coğrafyasında askeri ve idari ilişkiler ağı içinde Hellenistik dönem savunma birimlerini bütüncül olarak ilk defa değerlendirmekte ve bu yönüyle bundan sonraki çalışmalara karşılaştırma verisi sağlamaktadır.

Anahtar kelimeler: Mithradat Krallığı, Hellenistik Dönem, Kale, Savunma, CBS

To My Beloved Cat, Bicu

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This study has been strenuous during both the collection and the interpretation of data, due to the obscure nature of the subject and the territory. Visits to the studied fortresses were stressful as much as they were enjoyable. The fact that almost all were located on rocky outcrops required difficult climbs. The most exciting parts of the expeditions that sometimes took hours were finding the architectural ruins carved into the rock, marking one more fortress on the map and watching the amazing views that were impossible to convey by photograph. This study has been a long one. Many people were with me in this adventure, and I would like to thank all of them by name.

The seeds of the study were planted in 2007-8, during the Komana Archaeological Research Project that was led by my thesis supervisor Prof. Burcu ERCİYAS. I owe a debt of gratitude to her for encouraging me to study in this topic. I am grateful for her patience and confidence, her efforts in realizing this thesis and her guidance that put me pack on track whenever I started to stagger.

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INTRODUCTION

1.1.The Scope and Objectives of the Study

In the Hellenistic period after the death of Alexander the Great his legacy was shared between his generals as a result of fierce battles in Anatolia. It was a period of political uncertainty and protracted wars. These conflicts created an environment suitable for the birth of local kingdoms. One of them, the Mithradatic kingdom sprouted in this environment and ruled the Central Black Sea region for 200 years. The Mithradatic kingdom pursued a balanced policy and followed a descent political conjuncture until the reign of its last king, Mithradates VI. After a long term planning, the king stated the Mithradatic Wars, which lasted 26 years (89 BCE-63 BCE). In this struggle he claimed to be the savior of Anatolia, a man who had an Alexander-like character, Persian origin and was a protector of Greeks.[1] Although wars between Mithradates VI and the Romans ended with his defeat and death, the king was celebrated for his campaigns against Rome and for a short while, he even put an end to the domination of Rome in Anatolia.

Most information on the Mithradatic kingdom comes from the years 120-63 BCE, the reign of its last king, Mithradates VI. From the beginning, his policy underlined how the Persian origins of the Mithradatids had played a role in designing the kingdom's administrative system. For instance, as we know from Cappadocia (Strabo, XII.1.4),

[1]Alexander's political purpose was not to annihilate the Persians, but rather, to replace them. Instead of acting like Greeks, he and his commanders preferred to act like Persians and maintain Persian administrative power (Mitchell, 2002: 43; Glew, 1977: 254; Worthington, 2010: 133). In a sense, he was the last of the kings of Persians. There is no doubt that Mithradates VI preserved this way of thinking.

strategoi were in charge of administrative units called *strategiai*. This system was considered Achaemenid in its essence and was preferred by Alexander the Great, the Seleucids, the Ptolemies and the Parthians in the war-oriented Hellenistic period (Bengston, 1944: 264). This form of governance divided domains into local administrations and put into power of selected royal family members or close friends (philoi) of the royal family with military backgrounds (Strabo, XII.2.9). This administration was militaristic in nature and made controlling rural populations and collecting revenue easier, as well as recruiting soldiers in wartime. The fortresses that were the residences of the commanders provided control over agricultural activities and protected the cultivated areas that were the basis of the kingdom's economy. Similarly, the kingdom's religious centers (temple states) had administrative power, and the proceeds of their agricultural lands were spent in the name of the cult. The only difference was the lack of a militaristic structure. The fact that fortresses were seen as administrative centers as well as defensive strongholds by the ancient sources will contribute to our partial knowledge of the kingdom's administrative structure. The importance of the administrative aspects of fortresses in the Mithradatic landscape has always been stressed by pioneering scholars who study on Mithradatic Kingdom. However, there hasn't been a comprehensive study concerning it until now.

Magie in his book, mentions about the history of the Mithradatic Kingdom states the following about fortresses:

> "......inland Pontus, remote and mountain-girt as it was, should have remained unaffected by Hellenism. In fact, save for the adjacent Cappadocia, no portion of Asia Minor was so untouched by the influence of the West. Down to the time of the Roman conquest there prevailed the old Asianic system of domain-land belonging to the king or to the nobles on whom he had probably bestowed it. Both king and nobles owned fortified strongholds which they used as residences, and around these were villages which served as economic centres" (Magie, 1950: 179-180).

Olshausen, another authority on this region, believes that these fortresses were the main means of the governmental control by outlying easy access to the agricultural lands and farmers who paid their taxes there (Olshausen, 1987: 190).

While explaining the political atmosphere of the Hellenistic Period down to the time of Mithradates VI, Mitchell, points out the network of fortresses in Central Anatolia with this sentence: “Chain of local defense points, reinforcing the security of the realm” (Mitchell, 1993: 74).

And finally, Højte suggests that fortresses (Taulara, Gazioura, Chabackta, Amaseia, Cabeira and Pimolisa) were administrative centers because they were minting coins. He proposes that these were the divisions named *strategiai* and that minted coins were used for paying salaries of local troops (2009: 100).

Fortresses were always enigmas for scholars studying this area. Attempts were made to acquire information by utilizing data from historical records and coinage. However, a holistic point of view has never been achieved.

The idea for this dissertation took shape during the late years of surveys by the Komana Archaeological Research Project (2008-9). My advisor and I thought that the five fortresses we registered during the survey could be linked to the protection of the temple state of Comana as doctoral research. My research showed that similar fortresses were scattered throughout almost the entire territory of the Pontos. Thus, we decided that the study should not be limited to Comana, and that it would be better to examine all of the fortresses in the Pontos. After more than a year of field study and literature review, I identified 57 fortresses in the region. I examined and listed the works of von der Osten, von Gall and Olshausen, who examined these fortresses before me, and as a result of my studies in the region’s museums, I added some fortresses that were not identified by these researchers. The existence of this number of fortresses led me to ask questions such as whether these fortresses constituted a defensive system and what kind of roles they might have had in protecting rural life and controlling agricultural areas. I started to work on this subject with the idea that these fortresses that I identified in the Pontic landscape, which has been called terra incognita by researchers because of considerably low number of continuing studies and the lack of ancient sources, might provide insight on the defense strategies and administrative structure of the kingdom.

The fortresses that comprise the thesis material were quite difficult to reach and have not been generous with information. Pottery data, which is essential for dating, is hardly accessible because of the nature of their outcrops, and almost nothing can be seen other than the structures carved into the rock. I personally tried to visit the fortresses and did as much observation of them as possible. These expeditions were the most exciting part of my research.

Since the subject of this dissertation is fortresses, I looked into the meanings of defense in antiquity. I gained insights into the roles of these fortresses by examining territorial defense especially in Anatolia and mainland Greece. I was able to do a comparative analysis at this stage, after a study that includes the evaluation the terminological background of the fortresses, in order to understand, based on ancient sources, the role of the fortresses in wars, their administrative functions and their commanders' duties in the Pontic landscape.

In order to achieve a holistic understanding of fortresses and the events related to them, I needed a theoretical background. As the 'why' questions multiplied, a theoretical approach spontaneously developed in my mind. I thought that, since the war against Rome that occupied the kingdom throughout the reign of Mithradates VI, the period we know most about, Mithradates VI's strategy in this war should be examined. The fact that some fortresses played an active role in these wars offered insight into their defense functions. In this context, all the elements (strategy, intelligence, allies, army, and money) of his war against Rome were evaluated within the scope of military theory and brought together with the known roles of the fortresses in these wars.

During my visits to the fortresses I realized that they had different topographical settings. I thought that these differences might be reflected in their functions. Indeed, the GIS analyses, which helped to effectively evaluate the relationships between fortresses and their topographies, supported the idea that the topographical locations of the fortresses determined their functions. This made it possible to develop a GIS-aided approach.

The scope of this dissertation is the identification of the fortresses of Mithradatic kingdom that were central to the reign of the Mithradatids in the Central Black Sea region in the Hellenistic period. The artificial study area that was created for the purposes of this dissertation is the area where these fortresses were distributed. The relationship of the topography where 57 fortresses are located, theHellenistic settlements identified by surveys and road networks are discussed. These fortresses are distributed over the Central Black Sea region. In modern terms, this is the area that encircles Sinop, Samsun, Amasya, Tokat, Çorum, Ordu and Yozgat.

Determining the relationships of the fortresses to each other, storing all this data and transforming it into an interpretable format constitute the backbone of this study. The Geographical Information System is used for this. GIS is increasingly becoming an essential tool in archaeology. Therefore, all the data were collected and organized as sets of information. GIS helped to store, retrieve and analyze all the field data statistically and created smart maps of the region.

This study essentially aims to expose the role of fortresses in the Mithradatic landscape, by exploring their role during warfare and importance in the settlement distribution linked to agricultural lands. To describe the kingdom’s settlement policy requires an understanding of its administrative structure. Here are their underlying purposes:

Table 1.1 Outline of the purposes of the dissertation’s fortresses

Purpose	Hypothesis	Testing
Military	a) Defense unit (watchtower, signaling post), b) limits of the kingdom	Topographical and environmental features of the fortresses (GIS). Historical background.
Administrative & Economic	Guarding agricultural wealth of the kingdom	Location of the fortresses, Visibility Analysis and Agricultural land (GIS). Historical background.

This information highlights the fact that administration of the Mithradatic kingdom was very much based on its military organization. To clarify this implication and shed light on the past, my discussions use modern concepts. The military character of the fortresses, wars during the final period of the kingdom and Mithradates VI’s war policy as king and commander are all discussed within the framework of military theory. Analyses of the role of visibility from the fortresses in the administration of agricultural lands and communities is discussed using the panoptic approach.

This study also aims to determine whether the fortresses were elements of networks. This objective came to light in the wake of earlier analyses. The term, network, implies a designed defensive system, based on the locations and intervisibility of the fortresses. Performing a visibility analysis of the digital elevation model of the study area was considered the appropriate way to provide information about such a network. A close association of the fortresses with agricultural lands was also discovered. The fortresses were situated around the major plains of the kingdom—Dazimonitis, Chiliocomon, Phanaroia and Diacopene—and fully controlled them. This study thus found that the fortresses were distributed so as to create a network for each plain.

This is the first study to assume a holistic approach to the web of relationships of the Hellenistic fortresses in the Mithradatic kingdom of the Central Black Sea region. Some of the fortresses were studied in more detail and described individually. Except four, no archaeological excavations were conducted at the forts, and only limited information was available from survey and museum reports. This research gathers the fragmentary evidence regarding these fortresses puts it into a coherent analytical framework and combines literary evidence with archaeological data. The 57 fortresses, which have almost identical structural characteristics, are discussed within a web of relationships to shed light on the period's political and military structures.

More importantly, this study examines the use of the fortresses for critical administrative purposes, which at times outweigh their utilization in military endeavors. Although fortress as a term has intrinsically military connotations, for the Mithradatic kingdom, which inherited a Persian-type administrative structure, they were also administrative units. The landscape of the kingdom is characterized by agricultural activities, a lack of urbanization and dominated by village communities. By the evaluation of the effects of the fortresses on over the agricultural activities and rural settlements hypothesis are made about functions in the administrative structure in the kingdom. It can potentially serve as a reference for further research on Anatolian fortresses from military and administrative perspectives.

This dissertation has eight chapters. After the introduction, the second chapter considers the kingdom's historical geography, borders and economic background in order to highlight the fortresses' economic and historical context. Since the morphological data used in GIS is based on modern sources, it also presents information on modern geography. The third chapter includes information on the history of the Pontic landscape. It highlights the aspects of Mithradatic dynasty and its cultural identity. It also underlines modern and ancient sources' take on the socio-economic structure. The fourth chapter describes the kingdom militarily, summarizing the wars that took place between Rome and Mithradates VI, war strategy, alliances and armies within the framework of military theory. Numismatic evidence is also considered as wartime expenditure. The fifth chapter examines the fortresses, rural fortifications and the scholarship about rock-cut tunnels, which stand out as prominent features of the fortresses. It includes a discussion of their administrative functions and likely border marker functions. The sixth chapter considers Hellenistic period settlement distribution. It examines the settlement types and distributions derived from the survey reports and use of the GIS database. The seventh chapter includes analyses. With the help of GIS, the landscape in question was analyzed morphologically. The chapter examines the relationships of the fortresses with each other, with settlements and with roads. It also analyzes visibility using least cost path analysis and Voronoi diagrams. The data provided by visibility analysis are studied in the framework of a panoptic model. The fortresses were grouped based on their military and administrative functions. In this chapter, the data provided by SPSS were crosschecked with GIS data.

This dissertation includes five appendices. The first is a catalogue that presents detailed descriptions of the fortresses and analyses. The second presents settlement data on a map, and the third is a transcription of the ruggedness index histograms of Chapter VII. The fourth is a list of possible fortresses locations derived from investigation on a 1/25,000 scale. The fifth appendix has visualrepresentations of the least cost path analyses conducted for the fortresses.

1.2.The Nature of the Evidence

This study derives from an idea suggested by Professor Erciyas as a potential subject for my thesis after the discovery and identification of the Çördük, Geyras, Kücükbağlar and Karagöz fortresses during the 2007-2008 surface survey done for KARP, the Komana Archaeological Research Project (Erciyas and Sökmen, 2009: 291-3; 2010: 357-8). It was initially intended to examine the temple state of Comana Pontica and security for its fertile agricultural lands and population. After realizing during the later stages of this research that fortresses of a similar nature were dispersed throughout the kingdom, the study was redesigned to include the geography of the entire kingdom. Primary data for the thesis were collected under KARP. Scientists who have visited the area since the beginning of the twentieth century have already discussed some of the fortresses in the area.[2] During the 1960s, von Gall compiled a list of all the fortresses in Anatolia that contain tunnels (1967: 504-527).[3] The historical map Olshausen and Biller created for the Pontic region brought together and organized not only the fortresses, but also the topographic features and settlements in the area (1984). Bryer and Winfield discovered the Kurulkayasıand Gölköy fortresses in the region's northeast (1985: 117-20). The fortresses of Osmaniye, Esatlı, Arıkmusa and Çukurhan were discovered by surface surveys conducted in the area.[4] The fortresses of Simali, Hisarkavak, Katırmağara, Kunduz, Basamaklıgeçit, Simeri, Kayrak and Muratkolu were not mentioned by previous scholars. They were included in this study by identification in the inventory records of the museums of Çorum, Amasya and Tokat. Information regarding all the fortresses was compiled in a database. Supplemental and revised information based on observations from personal visits were provided as graphical data and analysis results in the Appendix in addition to this database. Excavations are being carried out only at the fortresses of Cıngırt, Kurulkayası, Amaseia and Tokat out of the 57 Mithradatic fortresses. Reports from the Cıngırt excavations that were started three years ago have been presented annually at the *Kazı ve Araştırma Sonuçları Toplantısı*. They indicate that there is a fortress with a single occupation level located at the top of the outcrop and that it was used extensively during the period of Mithradates VI (Erol, 2016: 561). The architecture revealed by excavation seems to be grid-planned with ashlar blocks leaning against the main rock surface. Its purpose is thought to be storage (Erol, 2016: 562). All the material culture recovered in excavations belong to this period, especially the coins.

[2] Kannenberg, 1895; Cumont and Cumont, 1906; de Jerphanion, 1928; von der Osten, 1929.

[3] The fortresses included on this list are: Gerdekkaya, Sazak, Boyabat, İskilip, Donalar, Yukarı Arım, Amaseia, Arhoy, Çördük, Pleuramis, Gökçeli, Geyras, Kaleköy, Ünye, Kevgir Kale, Tokat, Turhal and Zela.

[4] See Appendix I.

Plenty of arrowheads, ballista arrowheads, cannonballs, spearheads and coarse ware sherds recovered during the excavation underline the fortress's military function (Erol, 2015, 2016). Some artifacts could be signs of the fortress's civic life or administrative function such as red and black glazed *skyphos*, fish plates and some distinguished metal works (Erol, 2016: 565).

The excavation at Kurulkayası is another research research that is yielding archaeological knowledge about Mithradatic fortresses. The findings from Kurulkayası are particularly impressive because the fortress remained undisturbed since it was abandoned at the end of the Hellenistic Period.[5] The fortification wall surrounding the upper parts of the fortress are three meters high with well preserved mud-brick structures in some locations (Şenyurt and Akçay, 2016: 227). The rocky terrain was terraced, and the outcrop is surrounded by two separate walls of inner and outer fortifications. Unearthed storage areas, a plenitude of amphorae, arrowheads and oil lamps are also indications of the military function of the fortress. A moulded bowl from the workshop of Philon in Ephesos has 166-69 BCE as its date of production, suggesting that the fortress functioned during the reign of Mithradates VI. Coins discovered during the excavations were minted between 110-85 BCE (Şenyurt and Akçay, 2016: 236-8).

Excavations of the fortress of Amaseia have been ongoing since 2009. However, the focus of these excavations is the Seljuk and Ottoman periods. The fortress was continuously used from the Hellenistic period until the Ottoman period. Although the current excavation is directed towards the area where the Kızlar Sarayı, a structure from the Ottoman period is located, findings (coins, sherds, etc.) belonging to the Hellenistic period are also being reported (Naza-Dönmez, 2010, 2011, 2012).

Excavations of the fortress of Tokat have been under way for the last four years. Like the Amaseia fortress excavations, their focus is the Seljuk and Ottoman periods.

[5] Şenyurt states that the fortress had been subjected to illegal excavations, but estimates the damage to have had a negligible effect on the archaeological data recovered (2016: 228).

Excavation of the rock-cut tunnel has been intensified and has been the main focus for the last two years. The excavation is being run by the Museum of Tokat. As of yet, there have been no published reports about the project. Although pottery sherds belonging to the Hellenistic period are being found, there no architectural elements from the period have been found.

The Komana Archaeological Research Project conducted a survey in the province of Tokat from 2004 to 2008. Geyras fortress was part of this survey and also contributed to our understanding of the subject. At Geyras, where there is no sign of occupation earlier than the Hellenistic period, the survey recovered a typical Mithradatic coin from the rubble fill of the rock-cut tunnel (Erciyas and Sökmen, 2010: 359).

It is possible that the majority of these fortresses in the Pontos were constructed during the same era. Taking into account the substantial labor involved in excavating most of them, their significant number, the general uniformity of their construction and their concentration in a particular region, it does not seem unreasonable to conclude that their construction was only possible through the concerted efforts, technical abilities and resources of a large, well organized state.[6] As noted by many scholars, the first unified administrative organization in the Black Sea region was the Mithradatic Kingdom (Magie, 1950; Erciyas, 2006). The construction of fortresses in this region can be attributed to the Mithradatic Kingdom of Pontos during the 3rd to 1st centuries BCE.

Information regarding the fortresses during the Hellenistic Period were collected together.[7] Fortresses that are on the Museum inventory records in particular were visited and any lacking data was added. During the onsite study visits to the fortresses, data pertaining to location coordinates were recorded; the structures were documented photographically and registered in the GIS database for spatial inquiries.

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[6] These fortresses may have been built after lengthy investigations by a technical staff who knew the region very well.

[7] Some of the fortresses continued to be used during the Byzantine, Seljuk and Ottoman periods. Middle Iron Age materials have in fact been recovered in some of the fortresses, for instance, at Gerdekkaya.

In order to generate a more comprehensive interpretation by taking into account interrelationships between settlements and fortresses and by considering the system as whole their locations and dispersions were recorded in the GIS database. All settlements listed as belonging to the Hellenistic period in surveys carried out in the area since the early 70s were described topographically. In her dissertation, Erciyas brought together all settlements discovered by all the surveys conducted in order to describe settlement distribution and its evolution in the central Black Sea region through the centuries (Erciyas, 2001). This study takes over where Erciyas left off in 2000 and adds the settlements discovered from then until 2015. It also focuses on settlements that were established earlier, but occupied during the Hellenistic period. The data regarding settlements is not without shortcomings. Erciyas has discussed the problematic nature of both the method and the language used in descriptions and identifications used during surveys (Erciyas, 2001: 43-53). Surveys are designed as site-oriented surveys or exclusively consider specific periods. Out of concern for this issue, a more novel strategy by Özsait, who has surveyed the area for the longest time and most thoroughly, was followed by including information about all periods of use in the survey reports. His report includes the multitude of settlements he discovered, and most of his report comprises information related to subjects he was interested in studying.[8] Özsait conducted surveys in the province of Amasya in 1986-9, 1994-2004, 2006 and 2009. He surveyed the province of Tokat in 1988, 1990-3, 1997-1998, and 2007, and the province of Ordu in 2001, 2005 and 2008.[9] The inclusion of more details and data in his latest survey reports has been helpful with identifying Hellenistic period settlements. More research done within similar time frames in the region was carried out initially by Bilgi and Dönmez and later by Dönmez alone. Together they surveyed the provinces of Samsun and Amasya in 1997, 1998 and 2000. Dönmez carried out surveys in Samsun between 2001 and 2003 and has been conducting excavations in Oluz Höyük in the

[8] The last report by Özsait was about Amaseia and was published in 2011 (2011: 25-40). The last surveys took place in Tokat in 2009. This report also includes notes about the survey in Amaseia (2010: 195-222).
[9] Özsait, 2000: 73-88; 2002: 127-140; 2004: 273-284; 2005, 263-274; 2006, 249-258; 2007, 451-462; 2008, 293-306.

district of Amasya since 2007 to date.[10] More information and detail on settlements in relation to their periods as well as topographical positions were made available by Dönmez's survey reports. Since 1996 another survey project was conducted by Sipahi and Yıldırım. Their surveys conducted until 2010 were intended to describe settlement distribution during the third and second millenium BCE. Their reports help to identify Hellenistic period settlements for the most part. They included the term, Classical period, which was used at times to encompass the Hellenistic period. They state that whenever ceramic data from the Classical and Hellenistic periods was recovered it was recorded as such. Settlements identified by the term, Classical period, in their study were classified by this study as Hellenistic period and their locations were also copied and mapped. Another study in Çorum was carried out by Süel. Its main goal was to establish the locations of settlements in Çorum and its surroundings during the Hittite period, which were recorded. Süel, like Sipahi and Yıldırım, also used the term, Classical period, interchangeably with Hellenistic period.[11] The final survey project was done in and around Sivas by Ökse and later by Engin. These were conducted by Ökse in 1992-1995 and 1997-2000 and by Engin in 2007-2010.[12] The study of Sivas was very comprehensive. A multitude of Hellenistic period settlements were detected in the Upper Halys Valley. Data from the Sivas survey is a valuable and informative source about the region and for this dissertation.

All Hellenistic settlements discovered as a result of these surveys were positioned on a map with a scale of 1/25,000 according to their recorded locations. Subsequently these maps were digitized and transferred to ArcGIS. A database including date of settlement, surveyor and topographical information was made for each settlement. The distribution of settlements and fortresses on rocks, slopes, by elevation and by aspect was mapped using ArcGIS software.

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[10] Bilgi and Dönmez, 1999: 513-536; 2000: 229-244; 2002: 279-296; Dönmez, 2003: 41-50; 2004: 87-96; 2005: 115-124; 2009: 87-106.

[11] Süel, 1990, 1991.

[12] Ökse, 1993: 243-258; 1995: 317-329; 1996: 203-228; 1997: 375-400; 1999: 464-490; 2000: 11-24; 2001: 89-100; 2002: 229-238. Engin: 2009: 73,94; 2010: 129-150; 2011: 81-106; 2012: 173-208.

1.3.Methods

Here is a summary of the methods used by this study:

- Compiling information about fortresses and the Hellenistic settlements over extensive, site oriented, modern surveys of provinces (limited by province borders) and museum inventory reports,
- Preparing a GIS based database and transferring the data in order to interpret the information comparatively,
- Evaluation of historical data,
- GIS analysis.

As noted, the information that constitutes the data of the thesis is based on a detailed analysis of surveys conducted in the area. In order to compile this information, all the volumes of the *Araştırma Sonuçları Toplantısı* reports were examined, and the settlements identified by surveys were located on the map. To examine settlement distribution in the Hellenistic period, data were gathered from the published results of available and related survey projects. Some sites were described according to their distance from modern settlements or environmental features such as hills or rivers. The settlements were located on the map after comparing their locations on a 1/25,000 scale map. Luckily, some of the settlements were published with their coordinates. Each settlement is considered to be represented by a definite point on the map which is most probably its initial location.

Information about fortresses was gathered from notes taken by earlier scholars after their visits to the Pontos, museum inventories and survey reports. These were supplemented with my own notes taken during personal visits. During my visits, I recorded geographical references in UTM with GPS, took photographs and filled out an information sheet for each fortress I was able to visit.

The problem of generalizations made by surveyors when dating settlements and fortresses has been mentioned. Looking at the surveys conducted in this area, it is striking that there is a lack of data for Hellenistic period ceramics. This lack may result from site-oriented or period-oriented surveys. Another issue is the misidentification of Hellenistic period sherds as Iron Age (Erol, 2013: 186). This leads to problems with identifying Hellenistic period settlements. As often happens in archaeological research, the information available is biased by personal research interests or research goals. It is difficult for this study to overcome this problem. Fortunately in recent years, scholars have been conducting surveys, regardless of their backgrounds, and recording all archaeological data with coordinates and full descriptions.

The questioning of data in any archaeological research is of key importance. GIS offered a great contribution to this study during data inquiry and analysis. After the questions of the study were theorized, GIS became a more useful tool, and maximum efficiency the goal for topographical and spatial data. A greater understanding of the physical environment of the Pontic Kingdom was achieved. GIS analyses, a tool for examining the spatial distribution of settlements, were conducted to find out if there was a relationship between the fortresses, whether there was a network of fortresses, or if they were used to watch over and protect agricultural lands. The main source of morphological data that can be examined with GIS is the digital elevation model (DEM). This study used maps derived from DEM to determine the topographic parameters, namely elevation, slope, aspect and ruggedness of the entire study area and the archaeological sites. DEM for this study is from the EU-DEM elevation model provided by the European Environmental Agency. It is a hybrid product based on SRTM and ASTER GDEM data fused by a weighted averaging approach, and its accuracy is 25 meters. DEM is processed with ArcGIS software in order to produce initial elevation, slope, aspect and ruggedness index maps of the entire region. Lithological data was procured from the General Directorate of Mineral Research and Exploration to gather information about the outcrops on which the fortresses sit. Arable land maps were created in order to reveal the relationship between fortresses and agricultural lands, and this data was used in Corine 2006 (17th updated version). Unfortunately, there are no records about the road network of Pontic landscape in the Hellenistic period, and therefore the Roman road network was used to examine the relationship of the fortresses with the road network and to do least cost analyses. This data was digitized from the *Barrington Atlas of the Greek and Roman World*.

This study required the use of GIS since it was built on a spatial database. GIS has accorded not only a great number of sites and fortresses to be investigated, but it has also helped a large-scale spatial analysis which would have been otherwise impossible. Combining methods such as visibility analysis, least cost analysis and other spatial tools provided new insights and better understanding of the Pontic Kingdom.

Although our knowledge of the first kings of Pontos is fragmented, we have detailed information about the rule of Mithradates VI. Thus, the political and military structures of the kingdom will be examined using the reign of the last king, Mithradates VI, as an example in this study. However, it is important to note that the insufficient number of archaeological studies in the area even limit our knowledge about the last period of the Mithradatic kingdom. In this sense, ancient sources offer critical support. War between Rome and Mithradates VI and the Mithradatic landscape were analyzed with the help of ancient sources, particularly the writings of Appian and Strabo. Although both sources were written in the Roman period, they offer a detailed account of the Mithradatic landscape and Mithradates VI's war against Rome. Therefore, there are many references to these sources throughout this dissertation.

Numismatic evidence was taken into consideration as a war-time expenditure. The Imhoof-Blumer sequence, revised by Callataÿ (2009: 88), was evaluated in terms of the dates and the geography of the war. This led us to information about when the fortresses issued coins during the war.

In scientific studies the results of the analyses sometimes confirm your hypothesis and sometimes are added to the database as a meaningless pile of data. It is difficult to predict what the data will show and to plan accordingly, especially with large data groups (spatially and quantitatively). Of course, it was not possible to obtain the desired results from the data in this study (Figure 1.1).

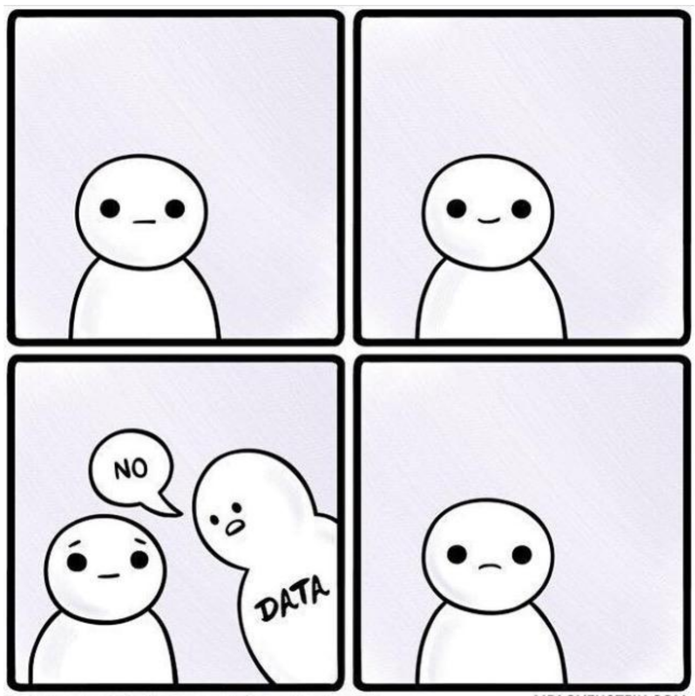

Figure 1.1Sometimes what the data reveals differs from what you think.

For instance, regularly conducted surveys in the Central Black Sea region for over 15 years were expected to detect many more the Hellenistic settlements, while the number of settlements detected, according to my count, is 332. A large part of these are from the most recent studies. I believe that more information on the Pontic Kingdom's settlement pattern, demography and socio-economic structure will be achieved through the systematic studies that have been increasing in recent years. In this study, the available data did not reveal a meaningful fortress-settlement relationship, due to gaps occured by ignored Hellenistic settlements in some areas. However, since the available data contains the settlements detected up to now, I found it worthwhile to evaluate as a potential contribution to future studies.

1.4.Major Sources

The increasing number of publications and meetings about the Mithradatic landscape have begun to lift the curtain of terra incognitaoff the region. Although the archaeological excavations and surveys are still insufficient, the number of scientists interested in the region's history and archaeology, and the amount of information produced is increasing. For now, most of the data on the kingdom is derived from the reign of last king Mithradates VI, although this limitation will be overcome by increasing field-work.

There are few studies on the fortresses that are subject of this dissertation, making it difficult to conduct this research project from time to time. Nevertheless, all the sources about the fortresses were compiled at the first stage. Information about fortresses starts appearing in the monographs and notes of authors who traveled to the area from the 18th century onward. Two sources of great importance, which specifically mention Mithradatic cities and fortresses, belong to Anderson[13] and the Cumont brothers.[14] During their travels to this region, Anderson and the Cumont brothers provided detailed information about some of these fortresses and made suggestions about their possible ancient names. During his travels in 1926, von der Osten, visited and documented many archaeological centers in the Central Black Sea region. He visited some of the fortresses during his trip. He published his notes from this trip in "The Kalehs with Tunnels." Also, some fortresses in the region, Çördük, Gökçeli and Sazak, were visited by von der Osten who drew provisional layout plans of their rock-cut tunnels (von der Osten, 1929: 123-137). Von der Osten also held a discussion on the purposes of these tunnels. He thought that these tunnels could not have been built for religious purposes because some

[13] Anderson, J. G. C. 1903. *Studia Pontica I. A Journey of Exploration in Pontos*. Brussels.
[14] Cumont, E. and Cumont F. 1906. *Voyage d'exploration Archeologique dans le Pont et la Petite Armenie, Studia Pontica II*. Bruxelles.

fortresses have more than one tunnel. They could not have been built for access to water because some fortresses had cisterns for this purpose and some of these tunnels were too monumental for water access. According to von der Osten, these could only be hidden escape routes formilitary tactical maneuvers (1929: 132). There is a detailed evaluation of this issue in the sub-chapter on rock cut tunnels.[15]

Another important source about the region is Wilson's doctoral dissertation on the historical geography of the Pontos. He travelled the entire kingdom and compiled epigraphic, ancient sources and travelers' accounts. This was the first study on the distribution of settlements in Pontos (1960). Elaborate mapping studies, which include the cities and fortresses of the Mithradatic Kingdom, were done by Olshausen and Biller.[16] Bryer and Winfield (1985) documented the late period structures in eastern Pontos and meanwhile, recorded all of the archaeological structures they came across. We owe them the first scientific records of the fortresses in the east. There are specific sources for rock cut tunnels, and the oldest is by de Jerphanion (1928). The first observations, measurements and suggestions about functions of the tunnels in Pontos were built on his arguments. Von Gall made a list of the rock cut tunnels in Anatolia and compiled the arguments about their function (1967). Reinach's monograph on Mithradates VI is a reference guide for everyone who studies the Pontic Kingdom.[17] He wrote a magisterial history about the personality of the king and the Mithradatic Kingdom using epigraphic and numismatic data.

Many works by Saprykin offer guidance in this field, for they elaborate on the issue of temple states in his evaluation of the policies of Mithradates VI in the northern coasts of the Black Sea and offer a historical background for the governmental structure of the Kingdom (2001; 2003; 2005; 2009).

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[15] See Chapter 5.

[16] Olshausen, E., Biller, J. 1984**.** *Untersuchungen zur historischen Geographie von Pontos unter den Mithradatiden* (Historisch-geographische Aspekte der Geschichte des Pontischen und Armenischen Reiches Teil 1, Beihefte zum Tübinger Atlas des Vorderen Orients, Reihe B Nr. 29, 1), Wiesbaden.

[17] Reinach, T. 1975. *Mithridate Eupator: Roi de Pont*. Paris.

Arslan prepared a compilation that evaluates the war between Mithradates VI and Rome using ancient sources and available archaeological data (2007).[18] This is the only reference book on Mithradates' historiography written in Turkish.

McGing's book (1986) touches on Mithradates VI's propaganda by representing himself as Alexander the Great.[19] He examines this issue in coinage and sculptures, imparting knowledge about the kingdom's early history, geography and identity, economy, and emphasizing the military history of Mithradates VI. His study also includes a discussion of the ancient sources that provide details about the Mithradatic wars.

The doctoral dissertation written by B. Erciyas in 2001 was published as a book five years later (2006).[20] She provides an important contribution to the history of the Black Sea. The book offers a good compilation on the Mithradatic Kingdom's Greco-Persian background. The settlement distribution in the Pontos region is evaluated by period, and this project has been continued in my dissertation, only for settlement distribution in the Hellenistic period. She evaluates the aristocracy using tomb finds from Amisus during the Hellenistic period and revealed the significance of the relationship between the coast and the Central Black Sea. She also describes Mithradatic propaganda by evaluating sculptures and portraits on the coins of Mithradates VI.

In addition, publications by the Danish National Research Foundation's Centre for Black Sea Studies, which ended its activities in 2010, can be seen as a reference collection for researchers who are studying this region. They provide online access to their publications and database.[21]

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[18] Arslan, M. 2007. *Mithradates VI: Roma'nın Büyük Düşmanı*. Odin Yayıncılık. İstanbul.
[19] McGing, B. C. 1986. *The Foreign Policy of Mithradates VI Eupator, King of Pontos*. Leiden.
[20] Erciyas, D. B. 2006. *Wealth, Aristocracy and Royal Propaganda under the Hellenistic Kingdom of the Mithradatids in the Central Black Sea Region in Turkey*. Colloquia Pontica 12, Brill, Leiden.
[21] http://www.pontos.dk/publications/books

The primary ancient source for the Mithradatic Wars is Appian's *Roman History*, which narrates all of the Mithradatic Wars with plain description. White's Loeb translation contributed significantly to my understanding of the wars.[22] Strabo from Amaseia provides invaluable information on the historical background and geography of his ancestral lands. He uses dynamic narration in which he talks about history of the kingdom, cities, borders and events moving back and forth in space and time.[23]

Another important source of comparative data for this research is a dissertation prepared by Professor Olshausen's student, E. Kolb, in 1982.[24] This study evaluates the fortresses in Pontos that I am studying in terms of their geographical location and their military and administrative functions. This is also the path I am following. Although the studies' aims are the same, the methods and the interpretations are understandably different. In Kolb's study the fortresses are located on 1/500,000 and 1/800,000 scaled maps as dots and interpreted afterwards (Kolb, 1982: 22). However, it is necessary to note that his smaller scaled maps drawn by hand show topographical differences in the landscapes surrounding the fortresses. Although Kolb claims that he studied a period between 280-63 BCE, archaeologically this period is not defined thoroughly either in the region or for the 69 fortresses he studied.[25] Most probably, the locations suggested by Olshausen are considered to be fortresses on the basis of historical geography. Indeed, a 1984 study by Olshausen and Biller marks all these locations on the map as fortresses.

[22] Appian's *Roman History* II, Books VIII Part II-XII. Translated by H. White. Loeb Classical Library. (1962).
[23] Strabo, *Geography*, Books X-XII. Translated by H. L. Jones. Loeb Classical Library. (1961).
[24] I am grateful to Dr. Vera Sauer and Prof. Olshausen who sent me a copy of this dissertation.
[25] Boyabat, Eğrikale, Pimolisa, Asar, Sagylion, Akalan, Kizari, Amisus, Hüvelenkale, Boğazkesen, Dazimon, Dazmana, Çördük, Geyras, Mürüs, Kainon Chorion, Cabeira, Akıncı, Megdün, Chabackta, Kaleyanı, Kaleönü, Side, Boon, Hypsele, Aşağıkaleköy, Yukarıkaleköy, Eskişar, Coloneia, Pharnaceia, Basgoedariza, Tripolis, Bedreme, Korolla, Ardasa, Kordylle, Hermonassa, Trapezus, Kale, Dadybra, Türkkalehisar, Anniaka, Boğazkale, Karapınarköy, Cemilbey, Büyükçay, Gökçeli, Kaleboğazı, Pleuramis, Akçakale, Ermelik, Skotios, Kızoğlu, Kaleköy, Amaseia, Arhoy, Gazioura, Keykavuzkale, Karamağara, Bedirkale, Yoğunhisar, Sümsük Sivrisi, Alişar Höyüğü, Arapaşılı, Sebasteia, Hafik, Kamisa, Aranda and Akşar.

Kolb's aim is to evaluate the fortresses according to criteria derived from their locations (in a narrow pass, on a rocky outcrop or in relation to a river). The scale of his maps and the relativity of the criteria causes problems (Kolb 1982: 24). In this 161 page dissertation, 120 pages are dedicated to the evaluation of the fortresses on the maps and short descriptions of them. The introduction mentions the geography of the region (3-4), the time limits of 281-63 BCE (7), the characteristics of the fortresses (9-14), the literature used (18-21), the maps that are used (21-22), and the problems and methods of the study (23-29). Kolb's dissertation is based on Olshausen's studies in Pontos and observations during visits.[26] I compare Kolb's classification with mine at the end of this dissertation.

[26] Olshausen, E. 1972. Mithradates VI und Rom. In: Aufstieg und Niedergang der Römischen Welt (ANRW) I. 806-815; Olshausen, E. 1978. Pontos, *RE* 15: 396-442.

CHAPTER 2

THE PHYSICAL AND HISTORICAL BACKGROUND OF THE PONTIC KINGDOM

Geomorphological elements of the Pontic landscape provide grounds to understand how the archaeological and historical backgrounds of the area were formed. These have a major affect on the development of the archaeological landscape. Therefore, this chapter only introduces the physical features directly linked to the Pontic landscape: geomorphology, aquifers, plains and mountains. These features relate to fortresses and settlements in terms of site selection. Mountains and rivers are not perceived as simple physical heights and sources of water, but rather as natural markers. These are features that create the borders of the kingdom. Plains play a role in the formation of districts that are used to define communities. These plains are also foundations of the political structure of the kingdom. The geography of the region influences the socio-political formation of the kingdom. Mountain ranges that separate the coast from the hinterland lead to the evolution of different cultures.

2.1.Geomorphology of the Pontic Landscape

2.1.1. Mountains

The main structural feature of the region is the North Anatolia Fault (NAF), which cuts across the research area and, more specifically, lies along the Kelkit Valley, reaching the Ilgaz Mountains via the Basin (Hubert-Ferrari et al., 2002: 2-7). The Yeşilırmak River flows south of the NAF toward the northeast, enters the Erbaa basin along its southwest rim and then defines a few kilometers long right-lateral offset along the NAF. Tectonic movements led to the creation of the mountains and plains in the region.

The Northern Anatolian Mountains run parallel to the Black Sea coast as an uninterrupted range, and are connected to the Alpine Mountain system. These mountains are the basis of the tectonic structure of the region. The Pontic mountain range is the dominant geographical feature in the Central Black Sea. This range is interrupted by deep valleys that are created by rivers. In antiquity, this range was divided into sections with different names. The Olygassys, Paryadres and Scydises Mountains have corridors that end in large and fertile plains.

As opposed to the high, hard to pass and sharp summits of the Eastern and Western Black Sea ranges, the Pontic range of the Northern Anatolian Mountains are lower in the Central Black Sea Region (Atalay, 1982: 52). This section of the Northern Anatolian Mountains is called Canik (Paryadres). They are located between the Melet River and the lower Kızılırmak, declining towards the east, and the deep Yeşilırmak Valley runs along the south of these mountains. The average height of these mountains is 1,500 meters, and the summits are Aydoğan Tepe at 1,971 meters and Killik Tepe at 1,546 meters. The other range is between Kelkit and Yeşilırmak. This range consists of the Dönek Mountains in the east and the Yaylacık and Sakarat Mountains inn the west, with the major summits, Dönek Mountain (1,815 meters) and Topçam Mountain (1,628 meters) (Atalay, 1982: 60).

West of the Kızılırmak, the Çangal Mountains, which are part of the Küre Mountains, create the relief in the western part of the region with an average height of 1,600 meters. These mountains are morphologically same as the Canik Mountains. The inner ranges of the Northern Anatolian Mountains are called Anatolids, and these are higher than the coastal mountains. This height was named the Tokat Massif by Blumenthal (1950: 81). The easternmost mountain in this range is the Yıldız-Asmalıdağ. It is 2,537 meters high and extends towards Sivas-Zara. South of Tokat, there is Deveci Mountain at 1,892 meters and the Çamlıbel Mountain Range at 1,916 meters, referred to together as the Tokat Mountains (Blumenthal, 1950: 82).[27]

In the Yeşilırmak Basin, the mountains are shaped like fans that open towards the east. The mountains north of Amasya and Merzifon create a range. The highest points in this range are the Tavşan Mountain at 1,900 meters and Akdağ Massif at 2,062 meters. The heights in the west form the Çankırı-Osmancık ranges. Here the mountains reach the Kızılırmak from the west-southwest and the east-southeast (Blumenthal, 1950: 85).

The Canik Mountains can be defined as the Paryadres Mountains. Strabo states that the Lithros and Ophlimos Mountains are located west of Paryadres (XII. 3). Hamilton asserts that these are the Kemer and the Ohtap Mountains (1842: 439). Olshausen and Biller suggest that Ophlimos is the Sakarat Mountain (1984). A mild Mediterranean climate provides a suitable environment for rich harvests of fruits and nuts on the slopes of the Paryadres (Olshausen, 2014: 44).

2.1.2. Plains

The long, narrow valleys that cross the mountains create ideal passageways for streams that develop into major rivers. One of the most important rivers of the area is the Halys (Kızılırmak), which crosses the Cappadocian plateau and flows into the Black Sea. Inside the broad arc defined by the Halys, there is the hydrographic basin of three rivers, the Scylax (Çekerek River), the Iris (Yeşilırmak) and the Lycus (Kelkit River). The Iris and Lycus form fertile alluvial plains.

All of the plains in the Central Black Sea Region (Kargı Plain, Vezirköprü-Havza-Ladik Depressions, Tosya Basin, Suluova Basin, Zile Plain, Tokat Plain, Erbaa-Niksar Plain) arelong narrow depressions that run along the North Anatolian Fault (Ardos, 1968: 135). The Osmancık Plain is also in the same category as a plain that lies along a river and

[27] See also Olshausen, 2014: 43.

was formed by varying levels of erosion along the river-bed (Ardos, 1985: 121). The plains in the region are of tectonic origin. These plains are created as a result of epirogenic movements that took place after the Alpine orogenic movements. Some depressions formed along faults during the Neogene. These depressions were then filled with Neogene sea, lake and river waters. Most of them tended to collapse under this heavy load (Ardos, 1985: 126).

The Dazimonitis Plain is a depression formed during the Eosene (Figure 2.1). The altitude of the plain varies between 535 and 650 meters, and it runs from east to west. The slopes on the north and south of the plain towards the Yeşilırmak consist mainly of metamorphic rocks (Paleozoic schists) and an ophiolitic range. The southern slopes contain metamorphic rocks and upper Permian limestone (Novinpour, 1993). There are three geomorphological units: the Kazova slopes, the deposit plains and the plain base. The deposit plains that reach the plain base with a 3-4% slope eliminate the knickpoint between the slopes and the base. Most of the deposit cones on the Kazova plain overlap and form deposit fans. The plain base is almost flat. The Yeşilırmak meanders in this area due to the slight slope.

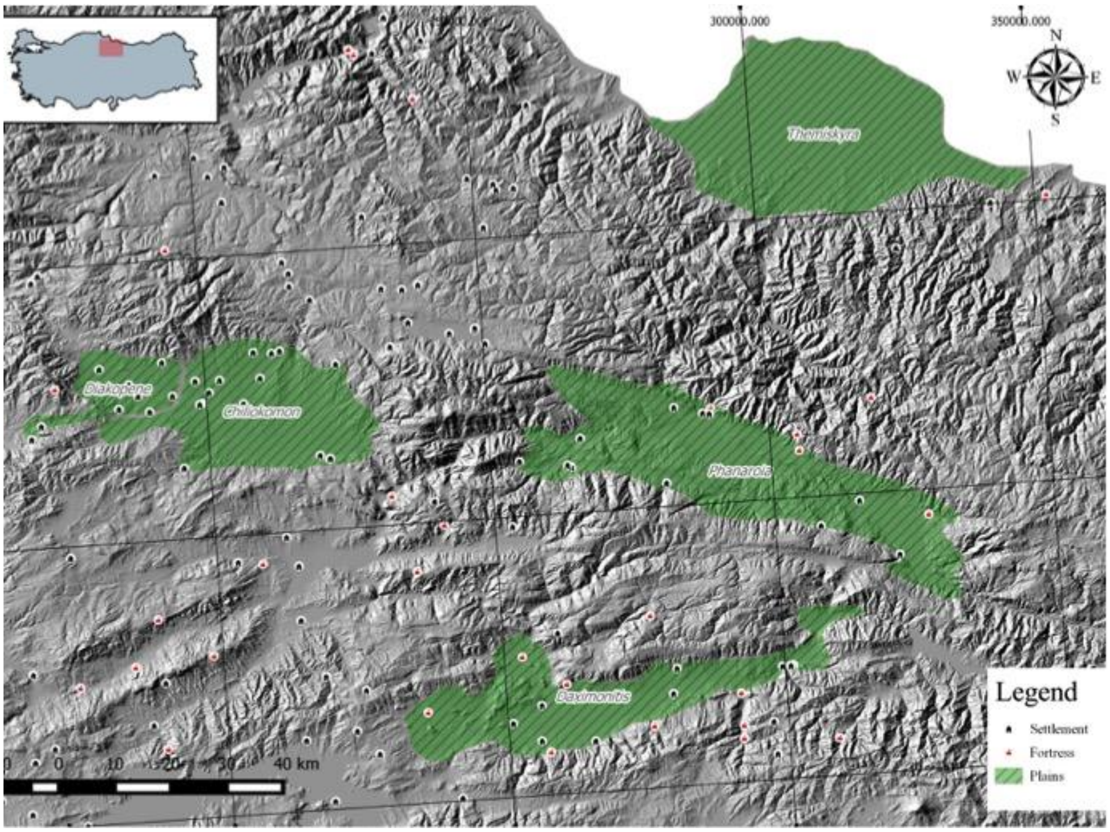

Figure 2.1 Plains of Pontic Landscape

The Phanaroia plain is today completely dedicated to agricultureand possibly was in antiquity, too. The economy of Niksar (Caberia), which overlooks the plain, is entirely based on agriculture. Kelkit River is located in the middle of the plain and is a permanent source of water, with an average flow rate of 527m^3/H calculated in the last 47 years (Aftab, 1989: 19). Precipitation in this area is highest in spring and winter, while summers are temperate with some precipitation (Aftab, 1989: 22). Research on Phanaroia shows that the alluvial deposit is more than 110 meters deep (Aftab, 1989: 60). Underground water sources are mostly fed by the Kelkit River (Aftab, 1989: 101). The substratum of the Niksar Plain has a karstic structure and is therefore rich in underground water sources (Aftab, 1989: 227).

2.1.3. Rivers

The Kızılırmak River flows along the fault. With the southern plate's continuous movement westward, the northern tributaries are unable to erode acute angles (Tüysüz and Erturaç 2005: 29-33). The sharp bend in the course of the Kızılırmak near Kargı is an additional consequence of the seismic offset (Şengör et al., 2004: 32). The Kızılırmak eroded the upper Retaceous and Eosene units and Pliocene sediments, created channels in the higher southern upper Retaceous and Eosene units and led to the formation of Themiscyra (Bafra) by tearing it deeply with its branches. Other factors that were influential in the characteristic delta formation of the Kızılırmak are the large drainage area, the high intensity of drainage, the length of the river, the suitable flow rate and the regime for erosion and transport and ample material generated by rock groups. The development of the Kızılırmak delta happened very quickly in the Quaternary. The large lagoons of the current delta that developed in front of the Pliocene terrestrial sediments had a tendency towards terrestrialization due to heavy alluvial deposit, when the Kızılırmak was transporting ample alluvial material (Turoğlu, 2006: 105).

These rivers that flow in deep and long valleys in the area, where the Iris and Halys rivers and their principal branches are distributed, create the Pontic landscape. The major rivers in the region are the Iris (Yeşilırmak), the Lycus (Kelkit), the Halys (Kızılırmak) and the Scylax (Çekerek). The Iris River adjoins with Çekerek and Kelkit, which pass through Amisus, Amaseia and Tokat, and end at Cape Civa in Amisus. The Lycus River has its source in Cappadocia and pours into the Black Sea, 2 kilometers north of Bafra (Strabo XII.3.15).

The Kelkit Valley is the northern most and longest valley of the Yeşilırmak Basin (246 kilometers), which is historically the northern and southern slope of the Paryadres Mountains. This mountain chain was the barrier between the inner Black Sea Region and the coastal area. Kelkit Valley is part of the Northern Anatolian Fault and a border between the Northern and Central Anatolia tectonic plates. The valley contains limestone and volcanic rocks belonging to the Cretaceous and Tertiary flysches. However, limestone and volcanic rocks are situated on the southern slopes of the valley and flysch formation causes erosion of its northern slopes (Karaer & Kılınç, 2001: 195). There are six major soil groups in the valley, namely, brown forest soils, non-calcareous brown forest soils, chestnut soils, alluvial soils, colluvial soils and grey brown podzolic soils. The most widespread type is brown forest soil (Karaer & Kılınç, 2001: 196).

Hafik is one of the important formations in the Upper Kızılırmak Basin. It is also the formation on which the Hafik, Deliktepe, Kamisa and Durulmuş fortresses were built. This formation extends almost parallel to the Kızılırmak River and consists of prominent gypsum layers of white and light gray color and sandstone, siltstone and conglomerate layers (Kurtman, 1973: 15). The upper levels of the Hafik formation consist completely of gypseous layers, and no fossil traces have been discovered (Kurtman, 1973:18). No fossil traces have been discovered anywhere in the Hafik formation.

The Scylax (Çekerek) is located in the southeastern section of the region. It was roughly formed in the Pliocene (Aylar, 2015: 215). After easily eroding the Neocene soft sediments between İncesu and Kazankaya and between Zile and Çekerek, it was buried in the Jura-Cretaceous limestone. A series of deeply split valleys, İncesu Channel being the most important one, was formed in this way, as an epigenesis split valley. Here, Kazankaya is on a local fault (Aylar, 2015: 215). Kazankaya looks like a narrow and deep split channel. The valley widens in some locations and has an alluvial baseonly in a few spots. It widens where the side branches that join the Çekerek River from the channel meet (Aylar, 2015: 219). Kazankaya was dug into Jura-Creteaous limestone, and its slopes are mostly very steep. This is clearly seen in photographs and topographical maps. The steepness of the scarps is the result of the intensity of sinks as well as the petrographic features of the sandstones. Terraces have formed throughout the Quaternary due to climatic changes and vertical tectonic movements as a result of deep erosion by the river (Aylar, 2015: 222).

2.1.4. Aquifers

Ground water is related to precipitation and rivers. Hydrogeology examines its vertical and horizontal distributions (aquifers). Comprehensive research regarding this subject for this dissertation revealed substantial information about ground water sources. This is crucial for the identification of the rock-cut tunnels that are the main characteristics of the fortresses because they are thought to have been constructed to reach water sources. Although some of the fortresses have major rivers around them, no association has been made between the fortresses and the rivers.

Varying thicknesses of alluvial deposit created by plains are also important in terms of underground water sources (Ardos, 1985: 126). There are high volume aquifers in the research area, which are due to the karstic geological structure of the region. Karst is characterized by large voids with high hydraulic conductivity and water tables (Crouch, 2003: 11).[28] The Gümüşhacıköy Aquifer lies below part of the Chiliocomon Plain and contains water in formations that consist of loose clay from the Pliocene, layers of sand and gravel and alluvial depositsfrom theQuaternary. A balance sheet was prepared for the Gümüşhacıköy Aquifer that covers average ground water flow for the period between 1965–2005. The flow from the volcanic rocks surfacing north of the aquifer is 1,153,352 m^3, while the feeding from the surface of the plain is 10,180,964 m^3. The total feeding value is 11,334,316 m^3 (Ersoy, 2007: 101).

The hydrogeological structure of the Kazova (Dazimonitis) Plain is dominated by limestone karstic structures. This is the case for the area that contains the village of Geyras and the Küçükbağlar fortresses (Novinpour, 1992: 66) In general, Kazova is rich in underground water sources. The water table is 1-3 meters along the Yeşilırmak and drops down to 6-20 meters towards the edges of the plain where the fortresses are located (Novinpour, 1992: 231). There is another water source one kilometer south of

[28] Controlling the waters in the karstic geological environment began in the seventh century BCE by constructing tunnels (Crouch, 2003: 12).

Geyras along the north-south fault (Novinpour, 1992: 144). This source may be the reason for the tunnel in the Geyras Fortress.

The fact that the Katırmağara Fortress, Çördük Fortress, Geyras Fortress and the Küçükbağlar Fortresses are notdirectly associated with a flowing river, but are located in areas that are rich in aquifers suggest that these tunnels were built to access underground water sources.

2.2.Borders

The western border of the Pontic Region under the Mithradatic Kingdom was the Halys River, while Armenia Minor constituted its southeastern border, and Cappadocia defined its southwestern limits. On this side of the border, the Kingdom neighbored the Galatian Trochmoi (Strabo, XII.5.2). The Pontos area contains the entire region where the Iris River and its principle branches are distributed. To the north, there was Paphlagonia and the ancestral territory of Cimistene. The boundary between Cappadocia and Pontos was an unknown mountain range that extended parallel to Mount Taurus from the western extremity of the Strategia Chamanene to the eastern parts of the Strategia Laviansene (Strabo, XII.2.10). Two large mountain ranges, the Pontic and the Taurus Mountains, are the most striking geographical features in the landscape of the region. These mountain ranges are separated by deep valleys. These valleys contain the main historical and contemporary overland trade routes that pass through agricultural lands below the fortresses. These trade routes led to Cilician ports to the south and Northern Mesopotamia to the east (Wilson, 1960: 242).

Olshausen divides the Pontic landscape into four areas (Figure 2.2). These are the high lands situated above Halys, the core area formed by the Iris and Lycus tributaries, the North Anatolian Mountainous Area traversed by the Halys and Iris valleys, and the coastal area stretching from the mouth of Halys to the east of Trapezus (Olshausen, 1978: 438).

The first area is the southern limit of the kingdom. This is called Upper Halys and includes the Camisene and Culupene districts (Strabo, XII. 3. 37). The mountain range called Akdağlar is the boundary between Pontos and Cappadocia, only in a loose and general way. The Halys flows from east to west along the southern side of the mountain range (Olshausen and Biller, 1984: 4; Ramsay, 1890: 315).

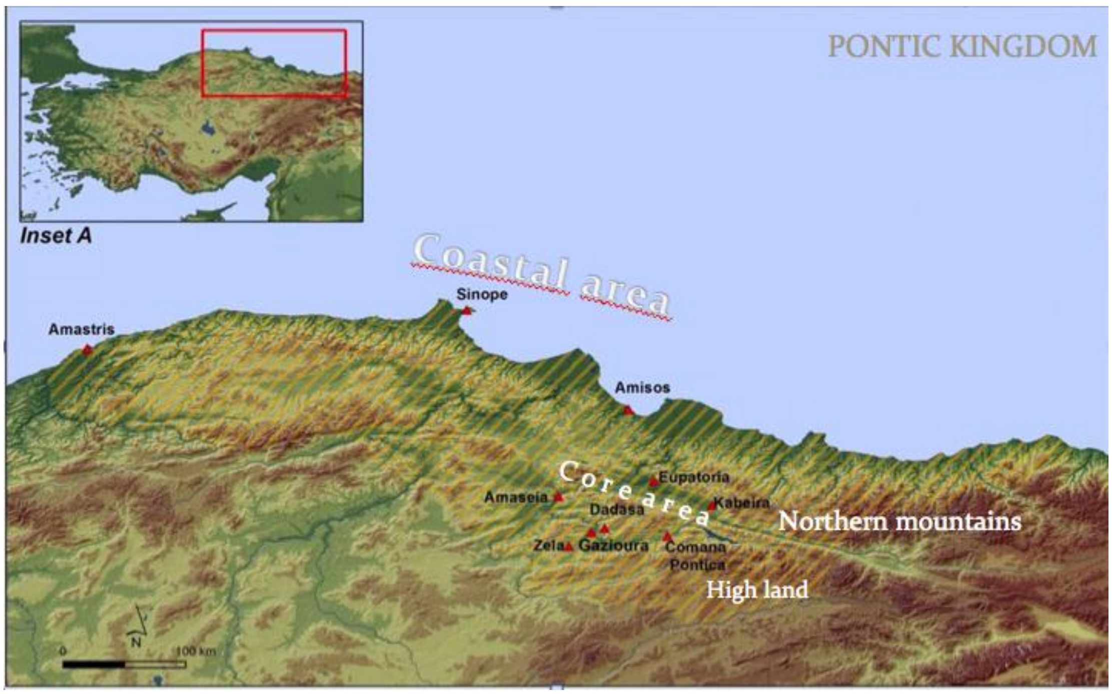

Figure 2.2 Geographical division of the Pontic Landscape based on Olshausen's narration

The second area is the heartland of the Pontic Kingdom shaped by the Iris River. This area used to host the most important plains in the Pontic landscape. Strabo mentions districts when describing this area. These districts were usually named after the fortresses that controlled them and can be associated with the locations of contemporary plains.[29] Phazemonitis is the district that contains Phazemon (Strabo, XII.3.38) and it is located in the inner sections of the contemporary province of Samsun and limited by

[29]The Camisa Fortress situated here given its name to Camisene district.

Tavşan Mountain to the south (Olshausen, 2014: 43). The Gazekene district that contains its capital city, Amaseia, also contains the fertile plains of Chiliocomon and Diakopene. The district that contains Suluova amd Amasya Plain is also home to the precint of Zeus Stratios, Amaseia, Katırmağara and Kaleboğazı fortresses. The Pimolisene District is named after the Pimolisa Fortress and spreads on both sides of Halys (Strabo, XII.3.40). Zela Fortress also gave its name to the surrounding district, and Zelitis is considered to be very fertile (Strabo, XII.3.37). This district extends towards Cappadocia and constitutes the border of the kingdom in this direction. To the east lies the Dazimonitis (Kazova) District, named after the Dazimon Fortress. Another significance of this district is that it contained the Comana, which was one of the most important religious centers in the kingdom (Strabo, XII.3.33). The Phanaroia District (Taşova) was where the Lycus (Kelkit) and Iris (Yeşilırmak) Rivers meet at the foot of the Paryadres Mountains. The plain narrows down towards east where the Cabeira, Basamaklı Geçit and Simeri Fortresses overlook the valley.

The third area is the coastal side of the Paryadres Mountains, which are sliced by deep valleys. North of the region was occupied by the Chalybs (V.5.1), the Tibarenoi (V.5.2-6), the Mossynoikoi (IV.5.34) and the Macrons (IV.8.1-9). The tribe called Leucossyrians settledaround the Iris Basin. Xenophon offers information on the settlements and inhabitants of the Black Sea coast in his Anabasis (V.4.2-5). The Tibarenoi tribe and their neighbors, the Chalybioi, settled east of Thermodon, and the Mossynoikoi tribe was located east of the Chalybioi. Cerasus was probably the border between these two tribes. Metropolis, which belonged to the Tibarenoi and is mentioned by Xenophon, was probably the fortress found in Gölköy (Sinclair, 1989: 116). There was one more tribe east of the Mossynoikoi.

The fourth area extends south through the Pontos Mountains, from the mouth of the Halys to Trapezus. On the coastal area there were the Greek colonies of Sinope, Amisus, Cerasus and Cotyora. These cities and harbors were connected to the hinterlands, linking the inner Pontos to the sea (Olshausen, 2014: 45). Sidene is a fertile plain in this district, and extends to Trapezus (Strabo, XII.3.17).

For this thesis an artificial research area was created within the Kingdom's borders according to the ancient resources mentioned above but determined by the locations of the fortresses. The borders that scholars have drawn based on the ancient sources seem to comply with the distribution of the fortresses that I have identified. Some areas were purposefully kept outside of the scope this study. The reason for this, fortresses are densely located in the heartland of the kingdom. The Sinope promontory is one of these. Sinope lies completely outside of the identity defined by the Mithradatic landscape and the socio-political environment of its geography. The major factor here is the mountain ranges that separated the coast line from the inland (Doonan, 2004: 34; 2006: 49). Another reason for the exclusion of Sinope is the fact that it was established in the late seventh century BCE by colonists from Miletus. Geographical isolation and cultural separation make it difficult to associate Sinope with the core areas of the Mithradatic Kingdom. Sinope was made part of the kingdom by Pharnaces in 183 BCE and became the capital after Amaseia, deeply involving it with the kingdom (Doonan, 2004: 74). However, Amaseia, the capital city in the heartland of Pontos retained its military and administrative significance until the end of the kingdom. The eastern border[30] of the study area is marked by Cotyora (Ordu), although the borders of the kingdom stretch as far as Trapezus. This is because no fortresses have been identified outside of the study area, and no archaeological research has been conducted there so far. On the southern side, the study area exceeds the borders of the kingdom. Strabo notes that the border in this area is marked by the mountain range between Pontos and Cappadocia that lies parallel to the Taurus Mountains and limited by the Chammanene and Laviansene regions (Strabo, XII.2.10).[31] There are numerous claims regarding to the southern border of the kingdom. The map I rely on for this dissertation follows the Kızılırmak river (according to Olshausen and Wagner). Strobel assumes that the south region follows the

[30]This map is derived from Olshausen and Wagner's map, TAVO B V 6.
[31]Reinach thinks that this border should be 800 stadia from Mazaca (1975: 217).

Tecer Mountains (2003: 1077). The distribution of the fortresses studied in this dissertation comprise the southern border of the kingdom. The southwestern and western borders follow the Çekerek River. This is also the border between the Galatians and the Mithradatids. I included tributaries of the Çekerek River and parts of the Kızılırmak River in the study because of the fortresses identified there. In the times of Mithradates VI, land that was conquered and lost repeatedly due to ongoing wars and conflicts is excluded from the study area. No fortresses have been identified outside its borders.

2.3.The Economy of the Kingdom

The economy of the kingdom was mainly dependent on agriculture. The Pontic Kingdom had fertile plains watered by the Iris River. Phanaroia, Dazimonitis and Chiliocomon were the plains where Pontos earned its income. These plains also hosted villages where the Pontic community used to live in scattered settlements. The most fertile part of the Kingdom is the Phanaroia Plain where the Lycus and Iris rivers meet (Strabo, XII. 3.30). This plain is very rich in olives and grapes. Even today, the plain makes a very high contribution to fruit and vegetable production in the Central Black Sea and Turkey in general. Anderson suggested that there used to be olive farming around Gazelonitis and Amisus due to the pressing stones observed during a visit (1906: 15). South of Amisus, the inlands between the Iris and Lycus rivers were used for cereals and citrus, and Zelitis was used for animal husbandry (Magie, 1950: 179). The Mossynoikoi tribe who lived on the Scydides Mountain had abundant walnuts (Strabo, XII.3.30).

Strabo noted that the mountainous areas of the Dazimonitis plain near Niksar were rich in mining resources (Strabo, XII.3.31). The richest mines were found in the Paryadres Mountains. The mountain contained deposits of alum, iron, copper and silver (Strabo 12.3.30) (Figure 2.3). The Chalybes tribe, who lived along the coast east of the Themiscyra, was known as iron forgers. The Kozlu copper mine existed in this area since the Early Bronze Age (2,800 BCE) and is known to have been used uninterruptedly (Giles and Kuijpers, 1974: 824-5). These mines were possibly used to provide raw materials to mint coins and weaponry for the kingdom.

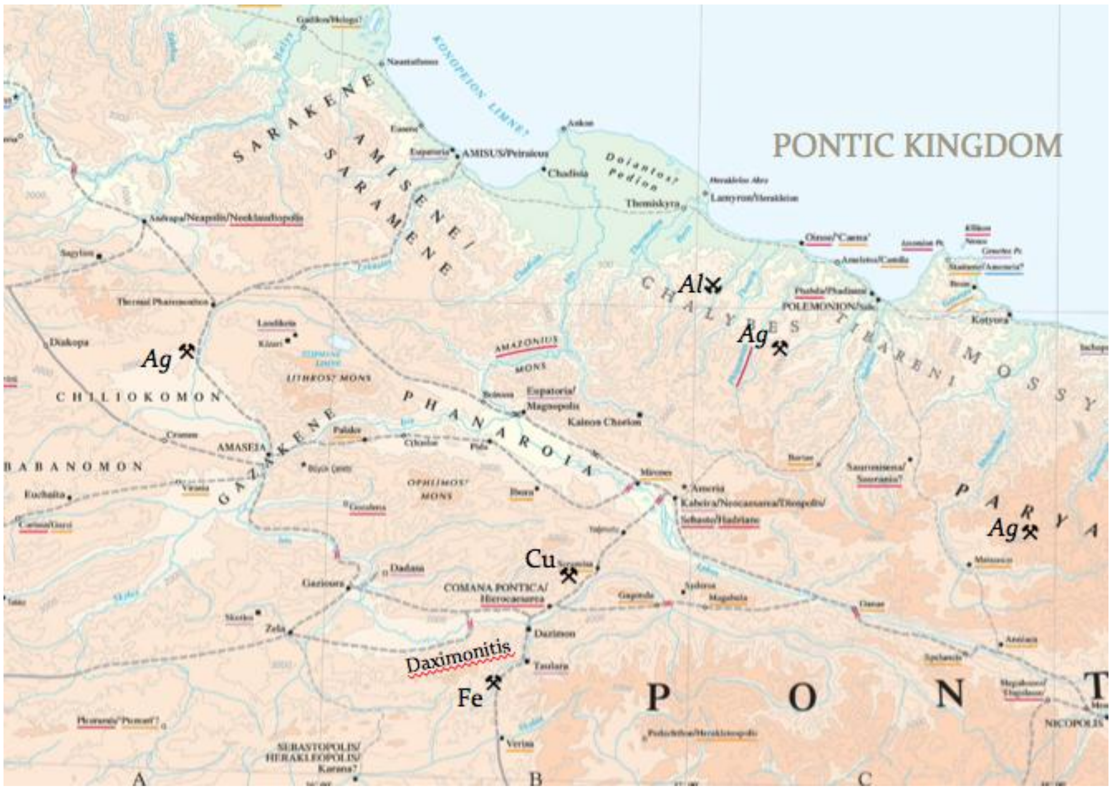

Figure 2.3 Regions and mineral deposits in the Pontic Landscape (adapted from Barrington Atlas, 1997: Map 87).

The Paryadres Mountains were rich in oak, beech and fir trees that are suitable for ship construction. Some of the timber was sent to the coastal cities for the Pontos navy while the rest was exported to the west via Pontos Euxenios' harbors (Magie, 1950: 179). By claiming Colchis, the Mithradatic Kingdom acquired a source of high quality materials for ship-building, such as timber and flax. Especially during Mithradates VI's war against Rome, they procured raw materials for the army from this area (Strabo, XI.2.18). Colchis was also rich in gold reserves, and Mithradates VI was probably smart about using its precious mine during wars (Strabo, XI.2.17; Pliny, XXXIII).

The kingdom was able to export its surplus products to other countries. Especially after Sinope was added to the kingdom and made its capital by Pharnaces I, interregional commercial activities increased. Amphora production in Sinope was an indication of international trade from the Black Sea to various places (Kassab-Tezgör and Tatlıcan, 1997: 355). Sinope had the most efficient harbor in the Black Sea due to its advantageous location, and it had enough forests to provide the timber needed for the kingdom’s ship-building industry. It was also a hub for commercial commodity shipments by connecting the hinterlands, especially Cappadocia, with cities on the northern coast of the Black Sea (Strabo. XII.3.13).

Annual festivals held in cult centers also shaped the economy of the kingdom. The principal sanctuaries in the kingdom were Comana and Zela, and the festivals held in these locations were also market places for commercial activities. People from Armenia Minor would flood Comana and trade there (Strabo, XII. 3.36). It is not difficult to guess that the products from the territories of these temples were exchanged during the festivals.

CHAPTER 3

THE HISTORY OF THE PONTIC LANDSCAPE

This chapter will evaluate the history of the Kingdom's territory where the fortresses are located. Brief information on the Kingdom's position within the political conjuncture of the period, the shaping of its borders, relations with neighboring kingdoms, and the strategy used for the expansion of the Kingdom will be underlined. It is probable that the Kingdom was influenced by the administrative structure of the powers that previously ruled the territories it inherited in creating its own administrative structure. I will try to reveal the socio-political structure of the Kingdom in this sense. Due to the aim of the thesis, the administrative structures of both the Kingdom and the pre-Mithradatic period will shed light on the administrative function of the fortresses that are being examined.

3.1.An Overview of Hellenistic Period

The news of the death of Alexander the Great in Babylon in 323 BCE spread like a shock wave and created an atmosphere of uncertainty, confusion and fear. Lack of an heir or a predetermined successor to follow him began to cause problems for the Kingdom of Macedonia and resulted in struggles between the Diadochi. Alexander had kept the system of satrapy that was inherited from the Persians after a rebellion in Anatolia that had occurred a year after his death. The satraps' lands were taken away and distributed amongst Alexander's generals who were made the new satraps. By this act Ptolemy was granted Egypt, Antigonus was assigned Pamphylia, Lycia and Great Phrygia, and Assander was offered Caria. Menander received Lydia, Leonnatus was assigned Hellespontine Phrygia and Eumenes was allotted Cappadocia and Paphlagonia. Seleucus was placed in the very distinguished office of commanding the *Cavalry of the Companions* (Dio. Sic., XVIII.3.1-5). The governmental system of Persian rule was satrapy. Alexander kept this system in place in order to avoid administrative complications and to prevent problems with tax collection. Alexander's system enabled Persian officers to be incorporated into both the government and the military (Olbrycht, 2010: 345).[32] The organization of administration in Anatolia was preserved by retaining governors already in charge as satraps (Briant, 1990: 47). The Persian influence on Alexander was not only evident in the governmental structure, but was also exhibited in court ceremonies and religious activities. Ancient sources state that Alexander imitated the Persian kings by wearing diadems and Persian garments (Diod. Sic., XVII. 77. 5; Justin, Epit. XII. 3. 9). Alexander created an amalgamation of Persian style and Macedonian ideas (Olbrycht, 2010: 366). After his death, the kingdom was fragmented while his generals fought each other. After the first partition, Ptolemy had Egypt; Antigonus had Great Phrygia, Lycia and Pamphylia, and Lysimachus had Trachia. Eumenes had Paphlagonia and Cappadocia. Antipatros took control of the Macedonian military (Diod. Sic. XVIII. 3) and Perdiccas took over the central command of lands in Asia. The Seleucids did not take part in the partition. Assignments for offices were altered after the death of Perdiccas (Diod Sic. XVIII. 33–6). General government of state was assigned to Antipatros. Antigonus became commander in chief. Antipatros' son, Cassander, was made chief of cavalry. Land distribution was not altered, other than giving Seleucus the Babylonian Satrapy as a reward for participating in the killing of Perdiccas (App. Syr. 53). For having established a strong position in Anatolia, Antigonus earned the disdain of all the others who shortly united in opposition to him. They succeeded in defeating Antigonus in the Battle of Ipsus (Diod. Sic. XIX.105.1), which caused a shift in balance of power in Asia Minor (Magie, 1950: 4). Control of Asia Minor was passed down to Lysimachus after the death of Antigonus. Lysimachus was defeated in the Battle of Kurupedion in 281 BCE, and Seleucus came into power. The only remaining Hellenistic kingdoms after this series of events were Ptolemy's in Egypt, Antigonus Gonatos' in Macedonia and Seleucus' in Syria and influential positions in Anatolia (Magie, 1950: 6, 725-8). Local kingdoms in the area started to take advantage of opportunities that arose due to the conflicts between generals in

[32] During Alexander's campaign in India, 75,000 Persians were incorporated into his army. This figure is ten times larger than the Macedonians in his army (Olbrycht, 2010: 360).

Anatolia. After the death of Lysimachus, Philetairos with the help of Seleucus I Nicator established his kingdom in Pergamon (Strabo, XIII. 4.1). As a result of Attalus I's victory against the Galatians the importance of his kingdom increased (Magie, 1950: 7). In a similar fashion, Zipoites took advantage of the turmoil and declared Nicomedeia the capital of his kingdom (Strabo, XII.4.1). Bithynia kept fighting with the Diadochi while also engaged in war with the Seleucids, but had good relations with the Ptolemies. As the newcomers to Anatolia, the Galatians were a problem for everyone. Their attacks against the Seleucids and the Kingdom of Pergamon won them a place in Central Anatolia under Antiochus I Soter (Magie, 1950: 6).

Mithradates III was from the court of Antigonus. He ran away to escape the fate of his father, Mithradates II of Cius, as a result of being warned of Antigonus' malevolence by Demetrios. He went on to establish the Mithradatic Kingdom (Bosworth and Weathley, 1998; Ballesteros-Pastor, 2013: 185). The Seleucids appeared to be the most significant kingdom in Anatolia. However, they were forced to withdraw eastwards as local kingdoms started to appear and more importantly as Roman influence began to enter Anatolia when the Kingdom of Pergamon was passed on to Rome as an inheritance (Magie, 1950: 32).[33]

The Central Black Sea can be considered to have been in a sort of dark ages before Mithradates according to our knowledge of the region's ancient literature and archaeological material culture. Alexander the Great never marched to the Black Sea area leaving it in the control of the Persian satrapies (Bosworth, 2006: 805; McGing, 2014: 23). Persians were dominant in Anatolia, and they divided Anatolian territories into six satrapies. Each was appointed a governor called a *satrapes.*

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[33]The Seleucid rule in Anatolia ended as a result of the Battle of Magnesia in 190 BCE between Rome and Antiochos. In 188 BCE, the Seleucids began to withdraw from Anatolia with the Treaty of Apameia (Magie, 1950: 18-20).

Herodotus offers information on the first four satrapies.[34] According to his account, the Mithradatic kingdom was in the Daskyleion satrapy's territories. After the satrapy uprisings between 404-359 BCE, most of the area was included in the Northern Cappadocia satrapy. The center of the Northern Cappadocia satrapy was Gazioura, which is one of the fortresses studied in this dissertation. It was governed by Ariarathes Ariourat I between 330-322 BCE (Reinach, 1975: 23, Jones, 1937: 149). The fact that Gazioura coins are named after him is an indication of this.[35] Anatolia can be regarded as an intercultural zone through which much of Greek perception of Persians was filtered until the conquests of Alexander focused Greek attention more on the Levant and Mesopotamia, which maintained a strong Iranian ethno-cultural heritage. The early dynasts of Pontos (Mithradates I Ctistes) and Cappadocia (Ariarathes III) claimed to have been descended from the Achaemenids. The Hellenistic way of life embraced by the Pontic royalty was intended to be blended with Persian concepts, which eventually allowed them to look to both Persia and Greece for their self-definition. Persian influence is evident in Strabo's account. The Pontic landscape housed Persian religious practices and their communities (Strabo, XII.3.37; XII.3.31).[36] It was also occupied by different ethnic groups. According to Strabo, Leucossyrian (XII.3.25), Scythian Mossynoikoi, Chalybes and Tibarenoi (XII.3.18; XII.3.19; XII.3.28)[37] were among the other ethnic groups present in the area. It is likely that the Central Black Sea would have been under control of local rulers.

[34] Herodotus, III. 89-97. He listed twenty satrapies and their financial obligations. This information has been presented in detail by M. Mellink in *CAH* (IV: 213-214). There were six satrapies in Anatolia. The first satrapy included Ionians, Magnesians, Aeolians, Carians, Pampylians and others. The second satrapy included Mysians, Lydians and the Lydian hinterland. This satrapy also included Sardeis. The third satrapy was known as Daskyleion and included the south coast of the Hellespont, the Phrygians, Asiatic Thracians and Paphlagonians. The fourth satrapy was Cilicia and the southeast. The 13th satrapy mentioned by Herodotus, Armenia, and the 19th, the satrapy that includes the territories of Moschoi and Tibarenoi tribes, are also Anatolian satrapies.

[35] These coins have Bal-Gzour on their obverse and a depiction of a griffin with the legend of Ariourat on their reverse (Erciyas, 2006: 31, 32).

[36] They worshipped Anaitis, Omanus and Anadatus in Zela, and the fire cult of Zeus Yassıçal is another example.

[37] Xenophon, Anab. 5.4-5.

3.2.The Mithradatic Dynasty

The kingdom was established in 301 BCE by Mithradates I, titled Ctistes, with six associates in the Cimiatene precinct of the Paphlagonia region (Strabo, XII.3.41).[38] According to ancient texts, this first king came from the lineage of Mithradates I, governor of Cius and Arrhina (Diod. Sic. XX. 3.4). Mentioned as Mithradates III of Cius in the Pontos Kingdom family tree by Olshausen, Ctistes is said to have fled to Kimiatene for fear of assassination and started a new kingdom there according to ancient sources.[39] Mithradates Ctistes followed a fast expansionist policy, taking advantage of the struggles between the Diadochi in Anatolia. He added Amaseia to his territories and established the capital of his kingdom there. He also conquered Zela, Gazioura and their vicinities (Magie, 1950: 189). After liberating the Heracleia Pontica territories from the Seleucids, Mithradates I declared himself King of Pontos in 280 BCE.[40] Later, he fought for control over the important port city of Amastris, which was governed by Lysimachus. The fight with Heracleia Ponticians ended favorably for Mithradates Ctistes and his son, Ariobarzanes. Thus the kingdom gained access to the sea.[41] The Galatian tribes that entered Anatolia in approximately 278 BCE joined Mithradates' army as mercenaries in an alliance.[42] After Ctistes' death, Ariobarzanes took his place (ca 266/265-ca BCE). During his short reign he added another important port on the

[38] Ballesteros-Pastor states that ancient sources identify the persons mentioned in the story of the founding as Seven Persians, and that they could also have been of Parthian origin based on Arrian's account (2013: 187).

[39] App. Mithr. 9; Mitchell, 2005: 135; Olshausen, *RE*, XV, 1978: 401. Also put forward proposals for the dynasty chronology table of the kingdom with the cross-reference evaluations of the Højte *IOSPE* 1² inscription (Højte, 2005: 150). There are various opinions on the current location of the fortress that is called Cimiata by Strabo and was established by Mithradates Ctistes. Strabo stated that the fortress was lying beneath the massif of Olygassys Mountain (Ilgaz)(Strabo 12.3.41; Marek 1993: 123-4). Matthews, who conducted recent surveys in the region, suggested that the Asartepe close to Ilgaz is the Cimiata. The settlement has pottery ranging in date from the seventh century BCE to the third century AD. Asartepe has a quite prominent position in the landscape. It has a viewshed that can control north-south and east-west routes. The fortress was built on a rocky outcrop that was shaped by terracing (Matthews, 2004: 207).

[40] App. Mithr. 9:112, The gold staters (imitations of Alexander's coins) with Athena on the obverse and standing Nike on the reverse with the legend of King Mithradates as the symbol of the kingdom also indicate this (Erciyas, 2001: 165).

[41] While struggles were ongoing between the Diadochi, he saw the chance to march on inner Paphlagonia.

[42] Galatians helped both Pontos and Bithynia Kingdoms in defeating the Egyptian King Ptolemy II Philadelphos' army. As a reward, they were given Phrygian territories (Arslan, 2007: 58). The Galatians were feared warriors and were regularly called for campaigns as mercenaries for local kingdoms (Mitchell, 2005: 136).

coast of the Black Sea, Amisus, to his kingdom. His young son, Mithradates II (ca 250-220 BCE), acceded to the throne and established an alliance with Seleucids by matrimony, eliminating the important threat to the Pontic Kingdom posed by the Seleucid rulers of Anatolia. Mithradates II adopted a friendly policy. He donated to Rhodes after the earthquake in 227 BCE in order to announce the existence of the Kingdom and thus became known throughout the Hellenistic kingdoms in Anatolia, the Greek mainland and islands. Like his predecessors, Mithradates II also attempted to occupy cities that would provide access to the sea. Ancient sources mention that he was about to launch a campaign to Sinope around 220 BCE, but he clearly did not conquer it. When he died in 220 BCE, Mithradates III took the throne of Pontos. The only available information about Mithradates III comes from coins issued during his rule. [43] Unfortunately, we do not have any information about his political stance and actions. Pharnaces I (197-160/159 BCE) succeeded him and adopted a more expansionist and aggressive policy than his predecessors. So much so that he united with the king of Bithynia and the Galatians to fight against the king of Pergamon Eumenes II. After his defeat, he attempted a second attack, this time forming an alliance with the King of Armenia and the Galatians, and started a war against Pergamon. First, he invaded the important port city of Sinope and its territories. Then he took over the Sinope colonies of Cotyora (Ordu) and Cerasus (Giresun). He started an invasion of Anatolia, not only to the east, but in a number of directions. While raiding the inner sections of the Paphlagonia region, he also launched expeditions to Cappadocia and Bithynia territories. He also encouraged Galatians to attack the Pergamon territory. Although some of his campaigns were inconsequential, Pharnaces I had managed to expand his kingdom from Amastris to Cerasus (maybe to Trapezus) along the coast of the Black Sea. He moved the capital of his kingdom from Amaseia to Sinope.[44] Pharnaces also built a settlement

[43] Coins minted during his reign depict Mithradates III as old man, on the obverse there is a depiction of Zeus. On the reverse there is the legend of Mithradates and the standard of the kingdom with a crescent and a star (BMC Pontos 42 no 1. Pl. VIII/2). The portrait of the king with an eastern appearance seems realistic (Erciyas, 2001: 166).
[44] The capital was moved to Sinope and the kings of Pontos began to be buried here. (App. Mithr. 113,)

named after himself, Pharnaceia.[45] He developed alliances and friendly relations with cities on the northern coast of the Black Sea (Chersonesos and Odessos). Matrimonial bonds were continued during the reign of Pharnaces I, in order to sustain friendly relations with Seleucids. Pharnaces' successor was his brother, Mithradates IV Philopator Philadelphos (160/159-150 BCE), who had a more modest foreign policy and closer relationships with Rome and its allies.[46] As opposed to his predecessors, together with the king of Cappadocia, he supported the king of Pergamon who was fighting against the king of Bithynia. Nor did Mithradates IV continue the tradition of marriage with the Seleucids. He married his sister, Laodice.[47]His successor and heir, Mithradates V Euergetes (ca 150-120 BCE), sustained a friendly policy. He supported Rome during the war against Carthage with his army and navy. He helped Rome against Aristonikos, who rebelled against the bequest of his territories to Rome by the king of Pergamon Attalus III. The Pontic kingdom was given Phrygia and Galatia as a token of appreciation for this help.[48] However, his relationships later deteriorated.[49] After Mithradates V was killed in 120 BCE the kingdom was ruled by Laodice and her son, Mithradates Chrestos, for a period. Later, Mithradates VI ended his mother's dominance in the kingdom in 119/116 BCE. He began to rule together with his brother Chrestos, but would rule on his own shortly afterwards.

Mithradates VI Eupator was the last king of Pontos. The kingdom undoubtedly had its live period under his rule. He radically changed the kingdom's policy towards Rome, and like his predecessors, he followed an expansionist policy but in more aggressive

[45] Pharnaceia was described by Strabo as a fortified town. He also stated that the inhabitants of Cotyora moved to settle there (Strabo, XII.3.17).
[46] The best evidence for this is a bilingual inscription at the Capitoline Hill in Rome. The inscription mentions his alliance and friendship (Højte 2005: 143.)
[47]The coins minted by Mithradates IV have himself and Queen Laodice on the obverse and Zeus and Hera on the reverse (*SNG* von Aulock 1. n° 4; 1).
[48] App., Mithr. 11-13, 15, 56-57.
[49] Magie,1950: 154, 196. It could not be determined clearly from Appian's account whether the Phrygia region was added to the Pontic Kingdom by Mithradates V or Eupator. McGing studied this subject comprehensively. He claims that Appian confuses two events in Asia Minor from Manius' period. Therefore, he recorded the wrong time for Phrygia's alleged autonomy (1986: 38).

way. Before taking the throne, he had already begun to plan for the annihilation of Rome in Anatolia.

3.2.1. Mithradates VI Eupator

Although we have very little information about the first kings of Pontos, a lot of detail is available about the rule of the last king, Mithradates VI, between 120-63 BCE. Generally, the aim of Mithradates VI's policy was to expand the territory of the kingdom from the borders of the Bosporus Kingdom on the northern coast of the Black Sea to Western Anatolia and to end Roman hegemony. In order to obtain labor and financial resources for this effort, campaigns were launched north to the Colchis region, which was rich in grain and timber (Strabo, XI. 2.15), and east to Armenia Minor for its rich mineral resources (iron, silver, copper and gold) (Strabo, XI.2.18-9).

In approximately 115-114 BCE, the city of Chersonesos and the Bosporus Kingdom on the north coast of the Black Sea asked for Mithradates' protection against rising pressure from Scythia.[50] As a result, Eupator charged one of his commanders, Diaphantos of Sinope to take control over the territory. He won significant victories against the Scythians, and renowned as undefeatable, he brought Mithradates Eupator significant prestige (Arslan, 2007: 81-88).

Mithradates VI conducted intelligence activities to fulfill his great ambition of ending Roman rule in Anatolia, and he secretly visited the province of Asia and the Bithynia regions to evaluate the situation of the Anatolian people under Roman hegemony (Arslan, 2007: 89; Magie, 1950: 196). In 109-108 BCE he made an agreement with the King of Bithynia, Nicomedes III, and they shared Paphlagonian territory among themselves (Arslan, 2007: 92). Rome was disturbed by this initiative. Meanwhile

[50] The king of Bosporus, Peristalses, volunteered to give his kingdom to Mithradates because of the tributes demanded by the Scythians. By adding the Bosporus Kingdom to his realm, his reign reached as far as Olbia (Erciyas, 2006: 19).

Eupator invaded Galatia as well. To keep Galatia under his control, he had a fortress built in the southwest of the kingdom and named it *Mithradateion* (Strabo, XII.5.2; Magie, 1950: 198).[51] He also took advantage of the death of king of Bithynia, Nicomedes III (App. Mithr. 13). The Roman senate sent a committee led by consul M. Aquillius to the province of Asia in order to get this antagonism under control. At this point, consul Aquillius abused his authority and provoked Nicomedes IV to plunder the coast of Paphlagonia to Amastris. The Mithradatic wars were started when Mithradates Eupator could no longer stand by and watch these attacks. Discontent in the Roman occupied territories also pushed Mithradates to fight against Rome. The war between Rome and Mithradates is discussed in detail in chapter 4.

3.3.The Greco-Persian Background of the Pontic Kingdom

The kings of Pontos attempted to create an entrenched history as their territories and power expanded. The Mithradatic kingdom adopted Persian political and religious organization.[52]Since Pharnaces I, the Pontic Kingdom claimed to exist since Persian times. This claim was intended to embellish the history of the dynasty in the eyes of its subjects especially during the reign of Mithradates Eupator.[53] This Iranian and Anatolian character of the kingdom united different segments of its population.

The early dynasts of Pontos (Mithradates I Ctistes) and Cappadocia (Ariarathes III) claimed descent from the Achaemenids. Although Pontos and Cappadocia existed as politically distinct kingdoms, for Strabo they were the same culture and society and were artificially divided (XII.1.1-4). Gradually the Ponto-Cappadocian dynasties would embrace Hellenism, Hellenistic diplomacy and the Greek language, facilitated by Greek

[51] According to Strobel, this is Gerdekkaya, see Appendix 1.
[52] App. Mithr. 9: 112; McGing, 1986: 13; Bosworth and Weatley, 1998: 155.
[53] The coins of the kings before Pharnaces have similarities with coins from Alexander the Great and the Seleucids. This similarity is lost with Pharnaces when the coins began to become more individualistic and show Persian influence (Hind, *CAH* IX, 1992; 140). Especially Mithradates VI's coins use the depiction of Perseus very often (*BMC Pontos*: 25, 28). Coins are the ideal indicators of the fusion between cultural elements used in dynastic representation. Anaeus Florus, portrays Mithradates VI as, "a great king coming from the lineage of one of the 'Seven Persians'" (Epitoma de Tito Livio, I, XL).

communities.

Coinage from the first period of the kingdom provide valuable information about this since its frequent usage allows it to spread ideas deemed important to and representative of the kingdom within its territories and beyond. The Hellenic culture of the king appears on coins from the Ctistes period. Having Athena on the obverse and Nike and king's name on the reverse suggests that the king was aspiring to represent himself as the successor of Alexander the Great (McGing, 1986: 23). Coins minted during the reign of Mithradates III could be described as Greco-Persian hybrids. On the coins the king is depicted realistically with a beard. Star and crescent symbols are present on this coin as well (Erciyas, 2006: 119-20). This was meant as aPersian attribute while the depiction of Zeusholding an eagle on the back was meant to refer to Hellenic culture (SNG, 1993: 1024). During the rule of the last king, Mithradates Eupator, Greek affiliations were kingdom policy. Examples of this attitude found expression in statues and coins where Eupator is depicted as Alexander the Great (McGing, 1986: 92; Erciyas, 2006: 148). Incorporating hybridized Greek and Persian elements in the royal house tales and narratives[54] during the time of Eupator is an indication of the recurrent employment of this attitude and its becoming commonplace. Using the depiction of the Pegasus on coinage as a reference to the Persian myth[55] was intended to highlight their Iranian background. Depictions of Perseus and the Aegis with Medusa's head were yet another mythological reference in this vein (McGing, 1986: 94).

The dynasty, during Mithradates Eupator's reign, culturally identified themselves as a mixture of Greek and Iranian. Strabo notes the Persian influence in his accounts of Pontos. More directly, Strabo describes Persian religion as an important aspect of Pontic society and its Iranian orientation. The Pontic landscape was home to Persian deities and their temple-communities such as the worship of Anaitis, the Persian Artemis in Zela (XII.3.37), worship of Ma. also known as Enyo, in Comana (XII.2.3) and in Cabeira

[54] Compiled of natural events that took place during the birth of Mithradates Eupator and accounts of his own heroic stories (McGing, 1986: 44).
[55] The winged horse was born from the body of the Gorgon Medusa after she was beheaded.

(XII.3.30-31), a fire cult of Zeus in Yassıçal. Strabo provides information mainly on these temples' socio-political organizations inside the kingdom. He discusses similarities between Persian and Pontic societies by underlining the temples' characteristics such as their possessions of vast number of agricultural lands, temple servants, high-ranking priests and cultic practices (XII.3.32; XII.3.37; XV.3.15).

McGing, states that in addition to cult practices, Persian nomenclature is also evidence of the Persian background in Pontos. Although the period's political conjuncture and the observance of trends may have played a role in shaping the names in Appian's accounts such as Machares, Xiphares, Artaphernes, Pharnaces, Ariarathes, Oxathres and most importantly, Mithradates, they are nevertheless part of the cultural record of Persian influence in the region (2014: 26).

Hellenization and creation of a Hellenic identity was typical of Mithradatic kings. To this end, alliances with Hellenistic kingdoms were sought, especially by marriage. Matrimonial ties with the Seleucids began with Mithradates II and continued (McGing, 1986: 21). In this way, the Mithradatic kingdom attained Hellenistic recognition.

Creating an identity was an imperative method of propaganda for Pontic kings in the war-oriented atmosphere of the Hellenistic period. Local kingdoms emerged as a consequence of the Diadochi wars began with establishing a strong identity for themselves. Bithynia constructed a Hellenic identity and followed a Macedonian pattern of urbanization. Nicomedeia was designed as a Greek city (Cohen, 1995: 62). Similarly the Pontic kingdom created a Greco-Persian identity. It is interesting to ponder what the macro-scale identity projects organized by kingdoms and spread by means of coins meant for the communities living in them and what their implications were at a micro-scale.

According to Giddens, the majority of the population in traditional states were unaware of their rulers. The public did not have any political rights or authority. Only those belonging to the ruling class were part of and loyal to the political community (1981: 183). When considered from this point of view being part of their own communities and the identities that emerge as a result of their ties with family and relatives were more fundamental to villagers in the Pontic kingdom.

As Ballesteros-Pastor noted, in the Pontos where many cultures lived side by side, the term, Pontic, is ambiguous. The main part of Pontos was occupied by the so-called Syrians, or Leucosyrians, who can be identified with those peoples who are called Cappadocians in a general sense (Ballesteros-Pastor, 2005). Mossynoikoi living in the foothills of the mountain of Paryadres, Chalybs (Xenophon, Anab, IV.5.34; 7. 15-18), Makrons, Tibarenoi, Appaites and Scythians (Xenophon Anab. IV. 8. 1-9) as lived in the kingdom as well (Strabo, XII. 3.18). It is very difficult to speak of a culturally unified kingdom when many different groups such as these can be identified in ancient sources. Identification might be more accurately done if we define people living in the Pontic landscape by geography because groups of people were engaged primarily with their immediate surroundings at a micro-scale.

Recent discussions of Pontic identity provide insights into historical use of the term Pontos that constitute the idea of Pontikoi. Mitchell notes that there is no evidence of Mithradatic kings referring to themselves as kings of Pontos. The term, Pontos, is believed to originate from the province *Bithynia et Pontus* established in the area after the defeat of Mithradates VI (2002: 38). Referring to Memnon, Olshausen thinks that this term began to be used with the Mithradatic dynasty (2014: 40). Ballesteros-Pastor thinks that the term, Pontic, expresses belonging and originated during the period of Mithradates VI (Ballesteros-Pastor, 2005). The idea must have been to unite the kingdom in the war against Rome.

Romans knew that a victory in Pontos was not achievable before Mithradates VI's death. The various communities living under the rule of Mithradates VI must have been pleased with the autonomy granted to them. Mithradates offered them the opportunity to live with their own identities intact.[56] Instead of disappearing under Roman rule and taxation, they fought under the command of Mithradates VI with a Pontic identity as well as their own local identities, just as they had four hundred years earlier against the Greeks in the army of Xerxes, the King of Persia (Herodotus, VIII.89).

3.4.Socio-Political Structure

In the interior regions of Anatolia during the fourth century and the Hellenistic period, settlements that could be classified as cities were almost non existent.[57] Anatolia's west coast is an exception. There were groups of communities living in small village settlements in Phrygia, Cappadocia, Commagene and Pontos (Rostovtzeff, 1941: 258). Broughton claims that rural character of the Anatolian landscape with village communities continued through the Hellenistic period (1938: 520).

Since the implementation of the satrapy system by Persians in Anatolia, which was deeply rooted in the history of Anatolia, it was used continuously throughout Anatolia in later periods. This system was quite proficient at taxing and administrating rural communities. This system is known to have been originally designed and implemented by Cyrus and used throughout the empire (Herodotus, III.121). Dareios I, on the other hand, is known to have revised and perfected the system. He formed new provinces that include Cappadocia, Cilicia and Armenia. The liberation of Cappadocia, which had previously belonged to Phrygia, the division of Cappadocia into Pontos and Taurus, the merging of Cilicia, which had been two separate regions after the conquest of Babylon, and its assignment to a single satrapy beyond the Euphrates were the steps taken in this direction (Herodotus, III.90). The satrap became both an administrator and a commander (Briant, 2002: 341). New satrapy regulation was implemented in the era of Artaxerkes I. This time no new satrapies were formed, but the existing satrapies were divided into

[56] Pharnaces I declared the local cult of Men to be the protector god of the kingdom. This demonstrates an act of respect and kinship towards all the various cultures living within the kingdom's territory.
[57] Here this section will describe the kingdom's administrative organization which also taken into consideration in Chapter 6.

sub-units. Arguably, the main reasons for this must have been to facilitate tax collection and improve security. The satrapy system was implemented by relatives of the king or men of Persian origin (Sarıkaya, 2016: 77-8). In some regions, there were satrapies that were in control of the local aristocrats, for instance, in Caria and Cilicia (Sarıkaya, 2016: 79).

Among the primary duties of a satrap were the supervision and improvement of the agricultural activities and the provision of security with the army at their disposal. These troops were deployed around areas that were closer to the satrapy or in critical parts of the province (Sarıkaya, 2016: 82). One of the duties of the army was to collect taxes (Briant, 2002: 67). There were *hyparchies* as assistants to satrapies in order to ensure security and taxation in the region. Persian rulers as well as local elites were assigned to these positions (Sarkaya, 2016: 82). *Hyparchies* were responsible for the sub-units of the satrapy. They played active roles in taxation and security (Sarıkaya, 2016: 82).

As we have seen, the satrapy system survived to the end of the Hellenistic period, but then were replaced with other institutions. Whatever their names may have been, their main objectives, taxcollection and security, remained the same.

Rural organization and tributes collected from these areas played an important part in the governmental formation of kingdoms during the Hellenistic period. Villages (komai) and plots of agricultural land (kleroi) were among types of properties that were required to pay taxes. Small villages could be linked to a larger village for tribute payment. The authorities of the village community and the owner of the *kleros* were obliged to pay tribute to the local *chiliarch* (Billows, 1997: 282). *Chiliarchs* were senior officials and were in charge of utilizing the collected taxes to pay for his and his workers expenditures and to pay the wages of the army. The remaining amount was directed to the central government of the region. *Chiliarchs* were commonly encountered as commanders of a local fortress (Billows, 1997: 269, 283). Chiliarchs were the equivalent in rank to hegemons in Hellenistic military organization and commanded a battalion consisting of a thousand infantrymen in the Ptolemaic and Antigonid armies (Bar-Kochva, 1976: 93). In the Seleucid system of government this system was run by *hyparchs* in separate districts called *hyparchies* (Diod. XIX.58, 1-2). It was not uncommon to find army officials taking part in governmental establishments since military formations lay at the foundation of Hellenistic monarchies (Austin, 2005: 125). Billows thinks that a satrapy-based Achaemenid type governmental organization was the basis for the governmental organization employed by the Seleucids and Antigonus (1997: 286).[58] At the foundation of these systems lay the objective of maximizing the revenue generated from agriculture by increasing its efficiency and production. This would then result in the political and military development of the kingdom. Cappadocia is known to have utilized *strategia* and was in fact divided into ten strategiai[59] (Strabo, XII. 1.4). *Strategia* was the territorial division in the satrapy administration system. This type of governmental structure were continued until the reorganization of Rome. The person in charge of these subdivisions is the *strategos.* Rostovtzeff states that *strategiai* were used to secure the royal possessions such as agricultural lands and the communities (1932: 214). The political administrative design of the Mithradatic kingdom is considered to be identical to that of Cappadocia. Strabo's accounts are used to explore the matter. He indicates that the territory of Zela was an *eparchy* (Strabo, XII.3.37). Saprykin states that in the time of Mithradates VI, Comana and Ameria were also *eparchies*, and that some districts were called *strategiai* and ruled by *strategoi* (1989: 132-4).

Tuplin reasons by following the example in the Cyropedia that the Achaemenids were *phrourarchs* and *chiliarchs*, the officers in charge of governing land and that they constructed fortresses to provide supervision and protection for the area. *Phrourarchs*

[58] The Achaemenids designed a well-organized communications network of roads and sent messengers throughout the empire to protect the interests of the royal administration. Provincial organization was maintained using the satrap model, and the satrapies seem to have been divided into sub units, either under local dynasts or under sub-governors, whose main function was to collect tributes. The lands of the empire were measured, registered, taxed, and sometimes estates were given as fiefdoms by the king to pay the military (Weiskopf, 1989: 35).

[59] Melitene, Cataonia, Cilicia, Tyanitis, Garsauritis, Laviansene, Sargarausene, Saravene, Chammanene and Morimene (Strabo, XII. 12.1.2; II.14.2; XII. 5.4).

were Persian commanders in urban centers, and commanders in satrapy regions outside urban areas were called *chiliarchs*. Both were appointed by the king, and both were under the direct rule of the king. *Chora* garrisons that regulated life in rural areas were positioned at strategically vital locations such as roads, passages and riversides (Tuplin, 1988: 68). Military units positioned in fortresses of this sort could be recruited from both local settlements and mercenaries from far away. They were trained, agile and compact units. These fortresses began to operate during the period of Cyrus and maintained security in Caria and Phrygia (Briant, 2002: 67; Xenophon, Cyr 8.6.7).[60]

Antigonus Monophtalmus, a general of Alexander the Great, was appointed satrap by Alexander to rule the areas of Lycia, Pamphylia and Phrygia using the Persian governmental framework (Billows, 1997: 46). Territories that were under the rule of satraps in the region, especially in southern Phrygia and Pisidia, were dotted with fortresses, each with a garrison and a phrourarchos under the rule of Antigonus. These phrouria are associated with Persian domination throughout Asia Minor and functioned extensively during the reign of Mithradates VI in Pontos. Billows believed that these *phrouria* on rocky outcrops with easy access to water and their *phrourarchoi* were limited to the region under Antigonus' satrapy (Billows, 1997: 281).[61]

The structure of the administration in Pontos was based on this system. The typical form of settlement was the village. The traditional land tenure system in rural areas was widely accepted during the Hellenistic period. The fertile valleys of Dazimonitis, Phanaroia were surrounded by fortresses. Some of them were also centers of administrative districts on royal land. Fortresses were administered by those who gained the confidence of the king or members of the royal family (Saprykin, 2001: 94). McGing states that these fortresses dispersed throughout the landscape are historical signs of the Persian past of Pontos and are characteristic of the Achaemenid culture (2014: 26).

[60] Xenophon distinguishes two types of fortresses: ʹακρα to guard urban centres and χωρα to guard the countryside (Cyr. 8.6.7).
[61] They also kept stock of food and fuel (e.g., corn and wood) in case of emergencies.

The other type of settlements were temple states. Strabo, mentions a number of temple territories around the important cult centers: Comana Pontica (XII.3.34-36), Ameria, near Cabeira (XII.3.31) and Zela (XII.3.37). These temples were governed by priests who, at the same time, were authorities in the royal family. Fertile lands and people living in villages generated income for the temple. Iranian culture was strongly represented in the temples of the Persian deities, Anaitis, Omanus and Anadatus at Zela. The temple to Anaitis, Omanus and Anadatus was established by Persian generals in the sixth century BCE during the reign of Cyrus to celebrate their victory over the Scythians. Under Mithradatic rule, there were increasing populations of priests, sacred slaves and an increase in the number of people of Pontos who made their sacred vows in Zela.

At the core of this administrative structure was its way of ruling communities that were dispersed throughout the landscape. It took the form of a militaristic and religious organization based on the spatial and functional properties of the Mithradatic Kingdom. Fortresses with military functions and temple states with religious functions determined spatial organization. The contact points between the ruling class and the common people who lived dispersed in groups were the temples and fortresses. Priests in these temples who belonged to the royal family or were appointed by it and commanders in fortresses must have been engaged in maintaining relationships between administrators and the common people.

CHAPTER 4

THE MILITARY THEORY OF THE MITHRADATIC WARS

In the human mind, the word “fortress” is associated with concepts such as defense, war and army. It is thought useful to evaluate fortresses that are found in the territory of the Mithradatic Kingdom within the historical background provided by ancient sources on the long-term war atmosphere that the kingdom was occupied with, rather than as entities on their own. The most important reason for this is the fact that the principle function of these fortresses was serving military needs. It is necessary to reveal their role as defense units in the Kingdom’s military operations, the most important and well-known one being the series of wars Mithradates VI conducted against Rome. In this context, we will elaborate on Mithradates VI’s war strategy and the Mithradatic Wars that were designed with a long-term planning.

Introduction

Military theory includes every aspect of military activity: strategy, tactics, administration, military structure and their mutual interactions. It strongly bound to the political, economic, background of states (Parry, 1944: 2). War is an act of violence and a continuation of politics. Every war has one main reason, which is to impose one's own will on the enemy and eliminate the enemy’s willingness to struggle. Any means used to achieve these objectives can be considered in this context. Military theory deals with the thinking of commanders and provides a guide for anyone who wants to understand wars in detail. It provides a broad framework for comprehending the entire spectrum of warfare. Military theory includes wartime resource management and minimizing risks. Historical figures who have influenced military thought have played a significant role in the elaboration of military theory. It is important to understand the strategic thought and doctrines of the period when studying historical military and political conflicts. In this sense, Sun Tzu, Thucydides and Xenophon are the best-known military theorists of antiquity. Sun Tzu, who lived between 400 and 320 BCE, organized and conveyed his strategic thought systematically. War is evaluated in an economic and political framework, and this framework informs decision makers about the strategies they need (Sun Tzu, 2013). This systematic presentation is not found in Thucydides and Xenophon. Strategic and military thought can only be understood by inference from the details of the wars in their accounts. Xenophon documents the events that occurred during the withdrawal of the Greek mercenaries in Cyrus's army in his *Anabasis*. His work informs us about principles such as security, solidarity, unity of command and includes accounts of the duties of commanders, supply and morale. Thucydides' work on the Peloponnesian War gives a detailed account of the Athens-Sparta conflict. Thucydides, who was also a *strategos*, makes evaluations that are informative about his military thought. Thesubject he emphasized most in his works is supply. The supplies needed by armies during expeditions were mostly obtained by looting and purchasing. However, Thucydides focuses on the fact that the soldiers constantly faced the threat starvation (Thuc, III, 10; VI, 18, 19; VII, 21; VIII, 25). Thus, the fact that expeditions overlapped with harvest seasons is not coincidence but strategy. Thucydides' detailed text on the strategies of Athens and Sparta during the Peleponnesos Wars informs us well enough. The strategies of two competing states were shaped by their respective political aims. Athens was not profiting on war and aimed to preserve the status quo. Its strategy of exhaustion showed that Athens had underestimated the power of Sparta. On the other hand, Sparta acted in a quite innovative and aggressive way to attain victory (Platias and Koliopoulos, 2010: 40-45).

Military theory consists of groups of basic concepts such as strategy. The higher levels of strategy are known as grand strategy. Grand strategy involves economic, diplomatic and military strategy. Grand strategy includes military, economic and political mobilization of all existing resources and is formalized by political tendencies. Grand strategy helps a state decide whether it will go to war or not, according to its objectives.

It also combines political, diplomatic and economic strategies—components of war—that are in place during war time, and it is the mechanism that allows these components to work together in harmony (Platias and Koliopoulos, 2010: 6).

According to Liddell Hart, grand strategy should develop the resources and manpower needed to maintain the fighting forces. He also underlines the morale of the people and the importance of exhortation by commanders. Grand strategy utilizes financial pressure and diplomatic pressure to undermine the enemies' will (Liddell Hart, 1991: 322). Grand strategy is supported by military, economic and political strategies. Economy is important because it provides resources for military strategy. The economic abilities of a state give it the opportunity to challenge opponents. Diplomacy helps to adjust relations with other states who can provide aid during such a challenge. Military strategy defines the use of all available military resources under the will of the state. Military strategy emphasizes strategy, militaryorganization, tactics and operational methods. It is the strategy that decides the mission of the country's military forces. It is used to change or defend the status quo. Either way, it is applied using force or threats. In this respect, military strategy divides into branches: extermination, exhaustion, defense and subversion. These are fundamental for military strategy. The strategy of extermination is the ugly face of warfare. It is used to capture territory and eradicate the hated enemy (Platias and Koliopoulos, 2010: 18). The systematic extermination of people has the strongest impact psychologically. The strategy of exhaustion is a strategy that seeks to avoid decisive battle, except when local conditions point to a clearly advantageous situation leading to victory. Exhaustion includes both battlefield and economic destruction. Territorial invasions destroy crops, and sea trade can blocked. This strategy suits the weaker side of a conflict, particularlywhen defending the homeland (Platias and Koliopoulos, 2010: 23). Offensive military strategy aims to alter the status quo using brute force. The strategy of subversion can be defined as carrying out propaganda against another state. Propaganda undermines the policies of rulers. This strategy is based on psychological concepts, seeking political collapse without physical conflict. It involves mass persuasion and ideological assimilation (Clausewitz, 1918: 171-2).

The grand strategy of Mithradates was based on diplomatic, economic and military power. The long-term war of Mithradates VI against Rome involved alliances maintained by diplomacy, economic arrangements for war expenses, military organization and propaganda. Mithradates' wars employed more than one strategy. Initially, an offensive strategy was used to end the Roman reign at Anatolia. This was integrated with extermination and thousands of Roman citizens were massacred, leading to social collapse and psychological demoralization. Propaganda against Rome was used as a subversive strategy. The second war was mostly confined to strategies that were intended to exhaust enemy defenses. This was due to reinstatement of the power of the Kingdom of Pontos and the alliances it had acquired. The third war took up an offensive strategy, although it was initiated to preserve the status quo. The principal aim of the naval and land wars was destruction.

4.1.Assessing of Mithradates VI's Military Policy as Military Theory

4.1.1. Grand Strategy

"O King, either endeavor to be stronger than the Romans, or silently obey the orders of Rome" (Plut, *Mar*. XXXI. 1-3).

The Mithradatic Wars may have been triggered by this warning. The cruel war between Mithradates VI and Rome was ignited by Marius, the Roman general who wanted to liberate Cappadocia from the king.[62] Mithradates heeded the advice of Marius and started the war.[63] The wars lasted almost 30 years and involved grand plans and

[62] The war actually started 10 years after this sentence was uttered by Marius, when he decided to take advantage of the weakness of Rome due to the civil war. However, it may have provoked Mithradates who subsequently waited for the right time to start the war.

[63] Ballesteros-Pastor refers to a similar sentence by Alexander the Great about the Romans, quoting Memnon: "When Alexander was about to cross to Anatolia, he wrote to the Romans that they should defeat him or submit themselves to the stronger." Here he implies that Marius is de imitatio Alexandri (1999: 507-8).

strategies. Even the beginning of the war was the result of strategic timing. The onset of civil war in Rome was the strategic openingfor the First Mithradatic War.

Strategy derives from *strategos*. It is the art of generalship, and refers to the organization of warfare, the art of long-term political and military planning and directing war (Haldon, 1999: 43). Tactics is the art of formations, weaponry and military movements. Strategy is the discipline, study and exercise of the virtues of commanders and the achievement of victories. The aim of tactics is to defeat the enemy by all possible plans and actions (Haldon, 1999: 35). Strategy is the art of controlling and utilizing state resources. It requires the successful integration of policy and arms to achieve political ends. Strategy covers logistical organization, officers and alliances (for Mithradates VI, the Galatians, Parthians and Armenians). As a decision-making process, strategy involves spotting naturally fortified locations and leading the war from them (Braudel, 1993: 214).

Figure 4.1 Summary of Grand Strategy of Mithradates VI

Mithradates had a long-term military policy against Rome. Mithradates had enough territorial state and military power to challenge the Romans, and it should be added that Mithradates' powerful personal profile was also influential. Starting from Sinope, he traveled in Anatolia for a few years to gather information about the economic, social and environmental conditions of the cities and obtained commitments from the fortresses in Central Black Sea. Mithradates' purpose was to rid Anatolia of the Romans and achieve independence. Many cities and communities were being crushed by Rome's heavy taxation. Mithradates took advantage of the distraction of internal conflicts in Rome and gained support from Anatolian cities. As Appian recorded, Mithradates' efforts to seek support from neighboring kingdoms against Rome (Glew, 1977b: 381), to gain support from Cilician pirates, to build dozens of fortresses in the Pontic territory (Strabo, XII.3.38) and to annex resource-rich northern Black Sea territories were all steps in a long term military policy. They were actually a war strategy. Here, the components of this strategywill be elaborated in detail.

4.1.2. Allies

Alliances always bring diplomatic power in wars. Mithradates VI was very successful at acquiring allies. He was almost at the peak of his power in 89 BCE, during the first years of the war. He had good relations with the neighbors and he cooperated with them, securing their place as allies in his war against Rome. The Galatian Tetrarchs were Mithradates' allies in every expedition from 108 BCE to 88 BCE, when he massacred them in Galatia (Arslan, 2007: 93).[64]

He formed alliances and signed treaties with every warrior tribe in Scythia, Tauros, Bastarnai, Sarmatia and Thracia, from between the Tanaïs (Don) and Istros (Tuna) rivers all the way to the Sea of Azov (Arslan, 2007: 94).

[64] He also built a fortress named Mithradateion southwest of the kingdom to control Galatia (Reinach, 1975: 88).

MithradatesVI strengthened his alliances with his actions in the Roman ruled regions of Anatolia. The neighboring kings did not want the Roman presence either. Cappadocia served as a buffer zone that limited the influence of the Parthians (Glew, 1977: 174). The Pontic Kingdom was also between Parthia and Rome. Therefore, it must have been advantageous to support Mithradates VI who served as a buffer to keep the predatory Romans away from Parthia. Sulla's Cappadocia intervention disturbed the Parthians, and they fully supported Mithradates Eupator's military action with Armenia (Olbrycht, 2011: 278). Parthians were rich allies in terms of armies and mines. The best proof of their close relationship with Mithradates is the Delos Monument, where the Parthian king is included in Mithradates' close friends (Kreuz, 2009: 137). When Mithradates left Pontos in 66 BCE, Parthia was dominated by Rome (Olbrycht, 2011: 280).

Armenia was situated in an economically and militarily strategic position and a vassal kingdom of Parthia. Tigranes took the Armenian throne in 95 BCE and tried to improve his ties with Mithradates Eupator by matrimony (Justin, Epit. XXXVIII, 3.2; Mayor, 2014: 110). During the war the king had immense support from Armenia. However, the support Tigranes gave to the king could not save him from Rome's wrath during the Third Mithradatic War (Mayor, 2014: 104). Mithradates VI tried to convince Tigranes and the Parthians to conduct an operation against Rome during the Third Mithradatic War. Although this plan could have been very successful strategically, the Parthian king did not want to take part. Although the twelfth king of the Parthians was an ally with Mithradates during this war, he remained neutral because he had signed a treaty with Rome during the First Mithradatic War.

Mithradates VI retreated toBosporos and Crimea to pull his army together and regroup towards the end of the Third Mithradatic War. He began to prepare a bigger plan to defeat Rome. He would go towards Thrace and Macedonia and attack the Romans by crossing the Alps (App. Mithr. 102). Hisnew allies, the Sirakoi and Aorsoi, would accompany him (Olbrycht, 2001: 437).

4.1.3. Intelligence Activities

Intelligence has always been a key factor in planning and designing strategy (Sun Tzu, 2013: 41). Mithradates VI designed an extensive program before starting his major war against Rome. The first step of his program was to make inquiries and check for feasibility in Anatolian cities where Roman rulers were in charge. Justin provides us with an account of Mithradates' and his close military companions' travels across Anatolia. Mithradates gathered lots of information on the geographical, political and economic conditions of the surrounding kingdom during these visits, which he carried out by leaving his kingdom secretly (Justin, Epit. XXXVII, 4-5). According to Hind, these journeys should be considered intelligence expeditions (Hind, 1994: 141). During his reconnaissance, Mithradates noticed a general hatred towards the Romans. This encouraged him to wage the war he was planning (Magie, 1950: 196). He was also assured of the loyalty of the fortresses in his kingdom.

Another secret operation was executed during the First Mithradatic War. By 88 BCE, Mithradates had gained possession of Anatolia except for the southern parts. A coordinated operation against over 80,000 Romans living in cities under Mithradates' rule began simultaneously on the same day (App. Mithr. 22). The extermination occurred simultaneously in every Anatolian city following "secret orders Mithradates sent to all the cities at the same time" (App. Mithr. 22). Military personnel and the kingdom's administrators in these cities were the key elements in successfully carrying out this plan. The king had initiated a successful military strike with this extermination in the cities with the help of his officers, who could also be called spies.

This extermination may have been carried out as a military strategy with the killing of such a large number of people intended to weaken and intimidate Roman forces in order to make them withdraw from Anatolia. Furthermore, by reducing the number of Rome's supporters, the idea of Roman domination would be impaired. Rome would also be prevented from obtaining resources with the help of these groups of residents in Anatolia.

During the later stages of the war, the aristocrats observing Sulla’s successes in Greece started to think that Rome would soon begin to achieve the same success in Anatolia and were distancing themselves from Mithradates VI. Some were planning assassinations. An assassination was attempted by people who were close to Mithradates VI, but it was prevented because the plot was revealed. The king had become paranoid. At the same time, competition and jealousy among the people drove them to accuse their competitors of trying to assassinate the king. “The king sent spies everywhere who denounced their personal enemies” (App. Mithr. 48). Within a few months 1,600 people in Anatolia were killed for rebelling, planning assassinations or being pro-Roman.

Another source of information in that period of time was pirates. They had the most up to date information on what was happening on all the Mediterranean coasts. Throughout the war, Mithradates received help from pirates who were hostile to Rome (Arslan, 2006: 319, 342). He was able to monitor the course of the civil war in Rome and learn about Rome’s mobility in the Mediterranean with the help of pirates and shaped his war strategy accordingly.

Information gathered by intelligence activities brought power. Constant military vigilance and operations had required gathering information. Some crucial decisions were made after deep intelligence activities. The First Mithradatic War was initiated after gathering intelligence for 10 years. Secret missions were entrusted to specific agents as commanders and officers. The extermination of such a large number of Romans simultaneously must have required a comprehensive and secret operation.

4.1.4. Military Propaganda

Mithradates VI's formal propaganda was based on emulating Alexander the Great (Ballesteros-Pastor, 1996: 403). During the Mithradatic Wars, Mithradates VI was depicted with an Alexander-like presentation on coins (Figure 4.2). Depictions of this kind were part of his grand strategy of war by visually referring to Alexander the Great. These figures also expressed Mithradates' loyalty to his nobility and military. He is depicted as Heracles in the Louvre head portrait (Højte, 2009: 150). Representation of the lion-skin headdress is also linked to Alexander, and it is obvious that Mithradates wanted to be associated with him.[65] Recently, Fulinska compiled all the works of art associated with Mithradates VI and elaborated on Mithradates' propaganda through the heroes and deities represented in them (2012: 61-78). The representations are rooted in ideas of audacity, invincibility and divinity. Velleius Paterculus' (19 BCE-30 CE) accounts of Mithradates mention constant desire for war, bravery and grand success. He goes as far as calling him a general of strategy, a soldier on the battlefield and a Hannibal in his hate for the Romans (Res Gestae Divi Augusti, II: XVIII, 1-3). He had a small kingdom on the coast of the Black Sea in the Hellenistic period that managed to escape Rome's-the dominant power in Asia Minor- notice, while becoming a powerful enough to stand against them (Madsen, 2009: 193). By depicting himself as Alexander the Great on coins, his message was received by both his own subjects and Romans. His main subjects were the mercenaries who fought in his army.

[65] For further discussion of depictions of Mithradates, see Erciyas, 2006: 153-4 and Højte,2009: 145-62.

Figs. 2a-b. Tetradrachms of Mithridates VI. a) early portrait type before 85 BC. b) later portrait type after 87 BC.

Figure 4.2 Representation of the Mithradates VI as Alexander the Great (Højte, 2009. 146).

Another of Mithradates' propaganda techniques was philanthropy, which was intended to gain favor of the people of Anatolia (Glew, 1977: 254) After his victory against Nicomedes, he was kind to the prisoners of war. He supplied each one with a travel allowance and sent them home. Thus, his battlefield fame was accompanied by an awareness of his mercy towards enemies (App. Mithr. 18) This increased his popularity both among the Anatolian peoples and his enemies. By being kind to his prisoners and sending them home with provisions, he made himself known among the Anatolian peoples as a charitable and humane king. Two more examples of his clemency occurred during the First Mithradatic War. The first was the release of the prisoners after Mithradates' 100 Sarmatian cavalrymen defeated 800 Bithynian cavalrymen that they encountered on the way to Aquillius and Nicomedes (App. Mithr. 19). The second was the release of 300 prisoners when he arrived at Manius Aquillius' camp.

He also cancelled the debts of Anatolian cities crushed by heavy Roman taxation and redistributed their assets equitably. He created an environment that supported a social order based on law and equality (Glew, 1977: 255).[66]

Monument is Propaganda: Delos Heroon

The island of Delos had been a place where various Hellenistic kingdoms showcased Panhellenic representations. Honorary statues and monuments were produced for and by royal people. During the period of Athens' control of the island, 125 statues were erected for honorary purposes (Erciyas, 2005: 159). Mithradates was included in the competition of propaganda between the Hellenistic kingdoms of Ptolemy and Seleucus.[67] The most extravagant monument made as a result of this competition was in the name of Mithradates VI. The monument was dedicated to Mithradates by the Athenian priest, Helianax, (priest of Poseidon Aisios and the Dioskuroi-Kabeiroi at Delos) as an indication of his loyalty.[68] The monument was erected during 102-101 BCE on Mount Kynthos and is evidence of Helianax' close relation to the king (Kreuz, 2009: 134).

The Heroon, furnished with Ionic order, opened with a distyle on an anti-facade to the south. It housed thirteen portrait busts inserted in round shields: one of them in the tympanon of the façade, and others along the inner walls of the building (Kreuz, 2009: 134). Possible headless statues of Mithradates depicted him as a victorious commander wearing armor. The portrait sculpture of Mithradates probably stood in the cella (Chapouthier, 1935: 35-36).

[66] To prevent rural populations from coming under the influence of Mithradates VI in Western Anatolia, Roman citizenship was promoted in the mid-80s BCE (Mitchell, 1993: 177).

[67] Erciyas notes that Pharnaces and Mithradates V did so before Mithradates VI, and that they were engaged in such competition with other Hellenistic kingdoms (2005: 159). According to the Delian inscription, Mithradates VI took control of the kingdom in 116-5 BCE. The gymnasiarch at Delos honored him and his brother, Chrestus, by erecting statues of them in 116-5 BCE (McGing, 1986: 43).

[68] Delos had a unique place in the Aegean. It was a center of commerce and a trade port that circulated all sorts of goods from the East and the West. Its economy was constantly active due to the Aegean elites who invested money into it, who themselves became wealthy because of the power Delos held as a place of trade. It was the pillar of the Aegean economy. Whoever controlled Delos would control Athens (Naco del Hoyo et al., 2011: 297).

The individuals depicted on portrait-medallions were close with Mithradates Eupator.[69] Kreuz listed them as: Gaios, son of Hermaios, from Amisus, *syntrophos* (childhood friend) of Mithradates; an unknown person and secretary of Mithradates; Dorylaos, son of Philetairos, from Amisus, nephew of Dorylaios Taktikos[70], an officer at Mithradates' court, synthrophos, commander of the royal bodyguard (?) and supreme commander, a member of the court of the Arsacid king, Mithradates II; another unidentified person; Papias, son of Menophilos, from Amisus, philos and physician of Mithradates; Diophantos (commander), son of Mithares, from Gazioura; Ariarathes of Cappadocia, nephew of Mithradates[71]; the Seleucid king Antiochos, Epiphanes; Asclepiodoros, father of Helianax, from Athens; another unidentified person, and finally, an official of the Arsacid court (Kreuz, 2009: 137).

The king promoted himself within the Greek world by erecting a monument, which can be thought of as a cosmopolitan schema representing the political landscape of the period (Kreuz, 2009: 139). The individuals represented on the monument indicate a lot about the politics of the kingdom. The monument representing him and his allies stood as a challenge placed at the heart of Panhellenism. Although the monument was built 12 years before the king's war against Rome, at the bequest of the King of Pergamon, Rome had easily conquered Pergamon in 133 BCE and established its first Anatolian province there (Magie, 1950). Thus, Rome's plan to conquer Anatolia began to be realized. Could it be that Mithradates constructed this monument with the help of his friend, Helianax, in order to intimidate Rome? The monument's many complicated meanings must have been provocative during a period when Roman power was on the rise. The monument singled out the Parthians in particular as allies. Pontos shared a border with the Parthian territories. Parthia's military power and raw materials made it a beneficial ally to the Mithradatic kingdom, and being represented on the Delos

[69] This information was derived from inscriptions. Dürrbach, F. (ed.). *Inscriptions de Délos.* (1923-37)
[70] Grandfather of Strabo's mother (Lindsay, 2006: 187).
[71] Ariarathes VII was murdered by his uncle, MithradatesEupator, in 99 BCE when war was about to break out between Pontos and Cappadocia. Ariarathes VII was not willing to obey his uncle's orders (Justin, Epit. XXXVIII.1).

monument was a testament to their good relations. The Kingdom of Cappadocia was also a good ally of the kingdom, and Mithradates held dynastic rights over it (Ballesteros-Pastor, 2014: 232).

The monument is located in the sacred territory of the Dioskuri-Kabiri. During the Hellenistic period, the Dioskuri-Kabiri had become the symbol of military success. This iconography was used on bronze coins during the reign of Mithradates VI (Erciyas, 2005: 160). The monument may have been situated in this sacred territory to serve as military propaganda.

The individuals represented on the monument make it apparent that the Delos monument is not a dynastic monument. It seems to have been designed as a provocation. It may be that the monument had a militaristic significance since most of the depictions were of Mithradates' allies and generals.

The monument, miles and miles from Pontos, must have provided international prestige and recognition for the kingdom. There is not much left of its portrait gallery. It is possible that the monument was subjected to damage after Mithradates carried out an attack on Ephesus.

4.1.5. Military Speeches

It is clear that the war that Mithradates carried out against Romans must have required a complex infrastructure. The main requirement was the establishment of military units and having them constantly ready for battle. To strengthen the army's spirit just before the battle, kings gave speeches. As the philosopher, Onasander, (First century CE) thought a general ought to be a good speaker so that he can encourage army before wars (Strategikos, 1.13). The speeches given by Mithradates VI not only encouraged his army, but also offer insights into his policy for this war.

Before the advance of his army towards Nicomedes' army and the Roman armies and before the start of the First Mithradatic wars [72] in 89 BCE, Mithradates gave a long speech. The speech was reported by Justin, It stated that he descended from honorable origins, his ancestors on his father's side came from Cyrus and Darius, the founders of the Persian empire, and those on his mother's side came from Alexander the Great and Seleucus Nicator, who established the Macedonian empire.[73] He also mentioned that he was the leader of a powerful nation to which Rome was not worthy of comparison, that his subjects were people who cherished freedom and that it was against their nature to comply with foreign demands. Mithradates encouraged his troops with his achievements. He believed his accomplishments would make his soldiers support him and hail him a leader and gave the example of the seizure of Cappadocia with no external military support. Mithradates claimed not only the paternal territory he possessed, but also Colchis, Paphlagonia and the Bosporos, which he claimed to have inherited (Justin, Epit. XXXVIII. 9-10).[74] He stated how great it was to serveheroically in an army under his command. He mentioned heavy taxation by the Romans and that their kings were chosen from amongst slaves, exiles and shepherds and that they hated him and other Anatolian monarchs. He stated that Romans were weakened by internal conflict and wars and that this was an opportunity should be taken since it gave them an advantage (Justin, Epit. XXXVIII. 4-5). With this speech the First Mithradatic Wars were begun.

The Bithynian king, Nicomedes IV, left his kingdom to the Romans after his death in 74 BCE, just as the King of Pergamon had (Magie, 1950: 320). However, the successor of

[72] Magie argues that at the beginning of the First Mithradatic War, M. Aquilius and C. Cassius made a tactical mistake when they forced Nicomedes to invade Pontos. This allowed Mithradates to start a war against Roman aggression (Magie, 1950: 209).

[73] Mithradates' generous donations to the cities in Greece and Western Anatolia helped to shape his identity as a Greek. In fact, having high-ranking officers, aristocrats, and scientists of Greek descent resulted in the Greeks' perception of him as one of their own. Furthermore, he was seen as a savior because of his struggle against Romans and standing with the people and protecting them against their corrupt rulers (McGing, 1986: 93-6).

[74] Adler, brought together scholarship on this speech, and according to him, this speech could be the creation of pro-Pontic sources or the invention of Trogus. (2006: 397-8). Trogus'anti-Roman writing is thought to have influenced it (Adler, 2006: 403).

the throne did not recognize the bequest of Nicomedes and asked for Mithradates' help in order to regain the kingdom. Meanwhile, the Romans were reorganizing Bithynia as a province (Arslan, 2007: 307). It was apparent that their possession of Bithynia was going to result in various problems for the Mithradatic kingdom. Romans could intervene with the kingdom's trade activities in the Black Sea area and attack Pontic ships. In order to prevent Roman domination of Anatolia and to protect his kingdom, Mithradates started to prepare his third war against Rome. He gathered an army consisting of 140,000 infantrymen and 16,000 cavalrymen. In the beginning of the spring of 74 BCE, Mithradates made a trial with his navy and sacrificed to Zeus Stratios in the customary manner, and also to Poseidon by plunging a chariot with white horses into the sea (App. Mithr. 70). His navy sailed along the coast and reached Bithynia. Meanwhile, to oppose any Roman attack on Cappadocia from Rome, he sent his troops under Diaphantos' command there. He deployed Eumachos at the entrance to Galatia and marched together with Taxiles and Hermocrates towards Bithynia (App. Mithr. 70). He gave a speech of exhortation for the army under his command.[75]

He gave a praising speech, not only about his ancestors but also himself, emphasizing how his kingdom had grown and how it had never been defeated by the Romans in his lead. He accused Romans of being so greedy that they even enslaved Italy and Rome itself. He also accused Romans of not obeying the treaty and resisting signing it due to the fact that they are biding their time to violate it again. Following his statement about the cause of the war, he also mentioned the composition of his army, his leadership and the preoccupation of the Romans who were at war with Sertorius in Spain as well as civil uprisings throughout Italy. He added, pointing at Marius and the two Luciuses, "Do you not see some of their noblest citizens are at war with their own country and allied with us?"

[75] The Bastarnai were on the side of Mithradates during the siege of Chalcedon (Arslan, 2007: 317), which caused 700 fattalities, 30 of whom were from the tribe of the Bastarnai (Memnon, XXXIX.2).

After he spoke and excited his army, he invaded Bithynia. The third Mithradatic War had begun.

These speeches can be divided into two sections. First section is where he represents himself as a successful commander, his subjects as strong people and the Mithradatic Kingdom as a powerful state, having strong historical roots. Second part is where he mentions the greed of Romans, their fondness of wealth, their injustices and ignobility. He was very successful in conveying the hatred he felt towards the Romans to his army and inspiring similar feelings in them. He mentioned the whimsical practices of Roman rulers numerous times. He was a skillful orator and his speeches were opportunistic and streetwise. According to Plutarch (Sull. XXIV. 2), even Sulla, after hearing his speeches to both armies said that, “he previously had heard from others previously about what a strong orator Mithradates was and that he finally witnessed it for himself.”

Anson compiled a study based on ancient historians’ accounts of commanders’ successful speeches, and found that they were practically infeasible withlarge armies (Anson, 2010: 318). Caesar, in order to be effective, delivered speeches to his armies in smaller units (Anson, 2010: 316). It is not likely that Mithradates made long speeches to his armies. It may be that Trogus' speech by Mithradates is essentially the product of its author (Adler, 2006: 398). Ancient historians may have embellished these speeches and made them legendary. The king did make speeches to his armies. The contents of these speeches and the main topics are very similar because of the discursive model the ancient historians attributed to kings. These historians credibility is diminished by not being first hand witnesses to the events that they describe approximately two hundred years after they took place. Furthermore, it is possible that Appian used Trogus’ work, which was collected and arranged by Justin.

4.1.6. Military Wages

War is an expenditure (Braudel, 1993: 214). The kingdom minted unprecedented numbers of coins during the war between Rome and Mithradates VI (Callataÿ, 2005: 124). This was due to military expenditures and salaries that were supposed to be paid to the soldiers.[76]In 95 BCE, right before the First Mithradatic War, the amount of coin production increased considerably (Callataÿ, 1997: 273). Thirteen different types of mint went into circulation.[77] Callataÿ investigated Pontic coinage and created a new list by taking into account the Imhoof-Blumer sequence and adding the types he had identified himself (Callataÿ, 2005: 124-5). The list includes all the types and mints according to minting dates. Here is a diagram of the correlation between military events and minting coins:

Table 4.1 Events and fortresses minting coins (based on Callataÿ's updated sequence), (2005: 124).

120-111 BCE Amaseia, Cabeira,Chabakta, Taulara-Amisos, Laodiceia, Pharnaceia	• Conquering Bosporos region, Cholcis, intelligence activities in Anatolia
111-105 BCE Amaseia, Cabeira, Chabakta, Gazioura,Taulara, Pimolisa	• Conquering Cappadocia, some part of Paphlagonia and Galatia
105-90 BCE Cabeira, Chabakta, Gazioura, Taulara	• Expeditions to Cappadocia and Bithynia
90-80 BCE	• The First and the Second Mithradatic Wars
80-70 BCE Amaseia, Cabeira, Chabakta, Taulara	• The Third Mithradatic War

[76] These civic coins travelled with soldiers to the northern Black Sea and west.

[77] The types of minting on coins are listed by Erciyas (2001: 177-8).

Callataÿ shows that Amisus kept minting coins without interruption starting from the time when Mithradates VI came to the throne of the kingdom (Callataÿ, 2009: 124-5). As the diagram shows, there is a correlation between minting coins and military events. Fortresses minted the most before the First Mithradatic war, during the kingdom's phase of expansion. During the First Mithradatic War, which took place far from the borders of the kingdom, there was no minting of coins anywhere other than Amisus.

During the First Mithradatic War, payment for soldiers fighting far from the kingdom's territory must have presented a challenge. In 88 BCE, at the time of his military excursions in the Aegean, Mithradates invaded the island of Kos (Arslan, 2007: 174), and afterwards, Kos began to mint tetraoboloi (Naco del Hoyo et al., 2011: 299). It is highly probable that these coins were minted to pay for the costs of the military operation and the wages of the soldiers that Eupator had transported to the West.[8] In fact, no minting is known to have occurred in Pontos during this period. Similarly, a lot of bronze coins were minted in Smyrna, depicting Mithradates on the front and Nike on the back. The obverse of these coins were overstrocked after Mithradates lost his influence in the region (Ashton, 2001: 65). It is possible that Eupator had paid the costs of the war with the resources from the wealthy regions he had seized. Callataÿ made some proposals to fill in the gap between 90 and 80 BCE based on the sequence he investigated. One of these is that, although it cannot be known for certain, the coins from Panticapaion, Phanagoria and Gorgippa were minted during this period (Callataÿ, 2005: 135).

Erciyas, who conducted a study of Pontic coinage, notes that the frequent presence of bronze coins in Pontic hoards and the standardization of types during the reign of Mithradates VI suggest that the kingdom's major cities were engaged in lively commercial interactions (Erciyas, 2006: 177-8). The interactions described by Erciyas were recurrent trading activities created by the war economy. War had created wealth. Striking huge amount of silver coins boosted the economy (Saprykin, 2007: 203). Increased monetary activities facilitated better trading. This economical acceleration should be also associated with the First Mithradatic War. Rostovtzeff claims that the introduction of a great amount of coinage into circulation must have had a revolutionary effect on the markets and economy, which eventually urged lower classes to go out and sell their products in the market, bringing even more coinage into circulation.

A substantial amount of Pontic coins (mostly minted at Amisus) were being shipped across the Black Sea. Gavrilov investigated the settlement in Kurubas and the coins recovered from its fortress and found that most of them belonged to the Mithradatic Kingdom (Gavrilov, 2009: 335). Ares/Sword type coins from Amisus, Sinope and Gazioura, obols of Amisus of the "Athena/Perseus" type and Aigis/Nike type coins of Sinope could have belonged to the Mithradatic army who had stayed at the Kurubas settlement during Diaphantos' Bosporos campaign (Gavrilov, 2009: 335). Callataÿ thinks that coins minted by Pimolisa, Taulara and Gazioura, which are frequently found in Bosporos, were minted to pay soldiers' wages (Callataÿ, 2009: 88). Erciyas points out that the coins function as an indicator of Mithradatic soldiers' travels and finding these coins in northern Greece, Athens and Italy proves their widespread use (Erciyas, 2006: 172).

Wars were costly for kingdoms whose essential income came from agricultural production. During the Roman and Byzantine periods the system of payment was based on an agricultural economy, also linked to soldiers' pay (Haldon, 1999: 36). The Ottomans developed a system based on an agricultural economy after they gained possession of Anatolia from the Byzantines and Seljuk. They carried out a system of registration and accounting called tahrir in order to put in place the timar system which encompassed military, agricultural and administrative functions (Shaw, 1985: 9). After recording estimated tax incomes for their lands, they assigned timarlı sipahis to them.[78] The job of the rural sipahis was to increase the agricultural productivity of the area for which they were responsible, to protect and secure the location in exchange for taxes

[78] Bosworth, C. E. 2000. "Tahrir", *Encylopaedia of Islam*, (Second Edition) Vol. 10. Leiden. p. 112-113.

collected from the villagers and to join the army during campaigns.[79] Ottomans were able to field more than 100,000 cavalry with this system at the end of the 16th century.[80]

Might a similar system have been employed by the Mithradatic Kingdom during the Hellenistic Period? Højte identified theten coin minting centers in Pontos: Amaseia, Amisus, Chabakta, Gazioura, Cabeira, Comana, Laodiceia, Pharnaceia, Pimolisa and Taulara.[81] He also points out that these mints, with the exception of Comana, were in fortresses (Højte, 2009: 98). We can answer our question by taking into account that commanders were in charge of the units of eparchies, the land governing system inherited from the Persians described in chapter 3, and also, when we consider that the fortresses regulated community life and production and were capable of minting coins. Fortresses that are thought to have been issuing in order to pay for the expenses of the army probably also controlled life in the settlements under its protection. Reinach states that eparchies in Pontos should have been linked to *strategoi* (1973: 85). Fortress commanders, as administrative officers, were responsible for resolving any problems. A number of the soldiers who served in fortresses were probably drafted from the surrounding settlements.

Coins seem to have military aspects. Depiction of weapons or weapon-bearing gods, goddesses or kings were commonly used themes on the coins. Seleucid coins for instance, used aggressive symbols of military power. They created heroic, forceful images. From 115 to 90 BCE, when preparations for war were taking place all the fortresses were minting Ares/Sword type coins (Callataÿ, 2005: 124). Mithradates VI represented his aggressive policies by depicting Ares on coins (Erciyas, 2006: 181).

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79 Bosworth, C. E. 1997. “Sipâhî”, *Encylopaedia of Islam,* (Second Edition) Vol. 9. Leiden. p. 656-657.

80 Murphey,R. 2007. *Osmanlı’da Ordu ve Savaş 1500-1700*, Trans. Tanju Akad, Homer Kitabevi, İstanbul. p. 59-60.

81 He also lists three other mints outside Pontos: Sinope, Dia and Amastris (Højte, 2009: 99). See also Callataÿ, 2009: 124-5.

Mithradatic propaganda used coins strategically which can also be described by the study of coins. Coins in circulation were tools of propaganda for the kingdom. The coin minting strategy of the kingdom was designed to impress rival neighbors as well as the Macedonians. Minting gold coins was as a sign of power (Erciyas, 2001: 165). The kingdom's rate of minting coins was substantially low until Mithradates VI. Callataÿ argues that royalty would limit it because it paves the way for trade and interaction (Callataÿ, 2009: 87). Furthermore, considering the fact that civic coins were not in circulation, it is possible to argue that the kingdom did not choose to use propaganda to create a Pontic society.

4.1.7. The Army

Our knowledge of the Pontic army is very limited. However, some information can be read between the lines from ancient sources about the Mithradatic Wars.

The Pontic Army did not have a national identity. Scythians, Taurians, Bastarnai, Thracians and Sarmatians were involved in the army at the preparatory stages of the First Mithradatic Wars (App. Mithr. 15). Soldiers from Sarmatia, Basilidai, Iazyges, Koralloi, Thracians and Bastarnai were also included in his army for the third war (Arslan, 2007: 311). The Chalybs tribe from the foot of Paryadres Mountains was also included (App. Mithr. 69). Mithradates brought many ethnic groups together in his army, and he was able to give speeches in all these languages without needing a translator. This linguistic skill was probably effective in keeping foreign soldiers motivated and faithful (Plin. Nat. VII.24.88; XXV.3.6).

The size of the Mithradatic army differs in the ancient sources. Appian provides some numbers about the size of the Pontic Army. For the First Mithradatic War, he reports that the army consisted of 250,000 infantrymen and 50,000 cavalrymen in 88 BCE (App. Mithr. 17). However, Memnon reports that the Pontic army consisted of 150,000 soldiers at the beginning of the war (Memnon, XXXI). Appian's account thus seem a bit exaggerated, and Memnon’s numbers seem more realistic. Memnon seems more sensible for listing 50,000 soldiers during Archelaus’s expedition to Bithynia, 60,000 soldiers during the Chaironeia War and 48,000 soldiers during the expedition against Lucullus (Memnon, XXXII, XL, XLIII). According to these accounts, the Pontic army during his first war can be estimated at 80,000 soldiers.

The army consisted of local auxiliary troops. Local populations did not have the military skills to be organized into a well trained army (del Hoyo et al., 2009: 42). Therefore, Mithradates’ allies frequently fought in his army. The Pontic Army used the Macedonian system with phalanxes as well (App. Mithr. 65). During the first war, when Bithynia and Cappadocia were invaded, thephalanxes were under Dorylaos’ command (App. Mithr. 17). In the Chaironeia War, 15,000 slaves are known to serve under Archelaos’ command (Plut. Sulla, 18.4). During the First Mithradatic War, a troop of cavalry from Armenia Minor under the leadership of Arcathias enlisted in the Pontic army (App. Mithr. 63). Scythian chariots were first described by Xenophon, and eventually appeared in the Antiochos II’s army in 189 (Baker, 2005: 380). They fought for the Pontic army against Nicomedes under the command of Archelaos by the Amnias River (App. Mithr. 18). Macedonian formations were used during the First and SecondMithradatic Wars, and after they failed against the Romans, the army was retrained to learn Roman army formations and new equipment was issued accordingly for the third war:

> “Mithradates manufactured weapons in every town and enlisted almost the entire population of Armenia. From these he selected the bravest, to the number of about 70000 foot soldiers and the half that number of horsemen and dismissed the rest. He divided them into squadrons and cohorts as nearly as possible according to the Italian system, and handed them over to Pontic officers to be trained” (App. Mithr. 87).

Plutarch confirms this account by Appian and states that Mithradates got his army trained to fight in Roman style and equipped it with Roman weapons, acquiring 120,000 Roman phalanx soldiers (Plut. Lucull, XXVI.6). The Roman, Sertorius, was undoubtedly behind this training project. As a result of his collaboration with

Mithradates, the King’s army learnt how to fight like Romans and a fighting unit was created out of soldiers who had fled from the Roman army.

Another important account about the army comes from Plutarch during the First Mithradatic war:

> “Both the scintillation of the arms exquisitely decorated with silver and gold, and the colorful Median and Scythian clothing mixed with iron and bronze shining like a flame projected a frightening image in its incessant motion” (Plutarch, Sulla 16.2-3).

Except for this description that emphasizes the wealth of the East, we do not have any information about the equipment or clothing of the army.

4.2.The Relationship between the Mithradatic Kingdom and Rome before Mithradates VI

The kingdom had as peaceful a relationship with Rome as it did with other kingdoms. Although Pharnaces I fought wars with Rome’s allies, these wars usually ended with Rome’s arbitration. His successors, Mithradates IV and V sustained good relationships with Rome. Moreover, their loyalties during the war against Aristonikos were rewarded with Phyrigian lands as a gift (Rubinshon, 1993: 9; Glew, 1977b: 382; McGing, 2005: 85). Rome was probably not pleased when Mithradates VI took the throne. Since 98 BCE, Rome had doubts about whether Mithradates had a long-term strategic plan or not (Rubinshon, 1993: 11). The pre-war activities of Mithradates in ancient accounts imply that it was impossible for Rome to ignore his military expeditions (App. Mithr. 10; Justin XXXVII.3.5). These campaigns were part of the grand strategy for his war against Rome. Rome must be taken into consideration since it was the decision maker in controls in Anatolian geography. Thus, Mithradates VI bribed Roman senate members to take Paphlagonian land into its own territory (Diod. XXXVI.15).

4.3.Importance of Cappadocia

Cappadocia was a country stretching along the Euphrates and bordering on Commagene, Armenia, and it was always the main area of dispute in wars between Rome and Mithradates VI. Before the beginning of the First Mithradatic War, Mithradates was struggling to keep Cappadocia under control while Rome struggled to support the existing king. Even Bithynia[82] and Armenia were involved in this struggle (Arslan, 2007: 97, 103).

Mithradates had ancestral connections to Cappadocia and the Achaemenid cultural background bound these two regions. In 116 BCE, Mithradates helped a dynasty member take over the throne in order to gain control over Cappadocia (Arslan, 2007: 96). Actually, the intent to control Cappadocia was a policy Mithradates VI inherited from his father, Mithradates V. Cappadocia, was to play a special role in the development of Mithradates Eupator's kingdom. The Pontic kingdom was not able to become the dominant local power without subjugating Cappadocia, a major state in eastern Anatolia (Olbrycht, 2010: 164) Cappadocia was subjugated to Mithradates by matrimony (Glew, 1977b: 385; McGing, 1986: 38). Before the first war with Rome was began, he tried to secure Cappadocia for himself. He tried to steer and control the policies of the Cappadocian kingdom by matrimony (Glew, 1977b: 383).

Cappadocia was also important to Rome. After the Peace of Apamea, Cappadocia was doted upon and protected from its ambitious neighbors (Ballesteros-Pastor, 2008: 46). Just as Mithradates did, Rome placed people who could be manipulated on the throne and helped them with all their problems. Rome also wanted a vassal in Cappadocia. In fact, king Ariobarzanes would inform the Roman Senate about every intervention by

[82] In 103-102 BCE, the Bithynian king invaded Cappadocia. However, Mithradates intervened in this short-term situation with the excuse that he wanted to help his sister, Laodice, and sent his army to drive Nicomedes out of Cappadocia. Meanwhile, Laodice made a deal with Nicomedes and married him before Mithradates' troops could arrive in Cappadocia. She returned to Bithynia with Nicomedes in a hurry. Mithradates was very angry and drove out all the garrisons Nicomedes had placed in Cappadocia (Ballesteros-Pastor, 2008: 58-60).

Mithradates VI. Every time Mithradates reached over to Cappadocia, Rome would be alerted and intervene. In 99 BCE, a famous ambassador of Rome, Marius, was sent here to stop Mithradates' invasion, but returned to Rome empty handed (Arslan 2007: 100). The wars between Mithradates IV and Rome virtually started when the final warning from the Roman Senate in 96 BCE failed. Mithradates' decision was influenced by the fact that Rome was struggling with civil war and that Rome had never before intervened in Anatolian wars with military force (McGing, 2005: 86). Cappadocia was a very effective location for Rome. Especially during the Mithradatic Wars, Cappadocia was a base for Roman expeditions to Pontos as well as a supply area for the army (App. Mithr. 81).

4.4.The First Mithradatic War (88-85 BCE)

This war was the manifestation of an emerging military power in Anatolia that Rome underestimated. The Romans were dealing with serious upheaval in both inside and outside Rome. Therefore, Mithradates did not refuse a war that came up at a strategically perfect time, when it was difficult for Rome to fight effectively in Anatolia. The seeds of the war were planted by the Roman general, Aquillius. He succeeded at provoking King Nicomedes of Bithynia to attack Pontos (App. Mithr. 11). Although the war began as a defensive war, Mithradates would impose his strategy of offensive.

Mithradates Eupator had an advantage over the Romans with the support of the northern Black Sea peoples and income from Armenia Minor. At the beginning of the war, he sent his son, Ariarathes, to invade Cappadocia in 89 BCE. Then he sent his general, Pelopidas, as an envoy to the Romans to intimidate them. In return, the Romans began to gather up their legions in Anatolia in three groups in order to fight against Mithradates VI. These armies soon took positions on the borders of Pontos. The first army under the command of the governor of Asia, Gaius Cassius, was positioned on the border of Bithynia and Galatia, the second army under the command of General Manius Aquillius was positioned on the Pontos–Bithynia border, and the third army commanded by

Quintus Oppius was positioned on the Cappadocia–Lykaonia border. Thus, Cassius controlled the road to Galatia and Phrygia Epiktetos through Pontos, Aquillius controlled the main road to Pontos and to northern Anatolia through Bithynia, and Oppius controlled the eastern road on the border between Lykaonia and Cappadocia (Arslan, 2007: 129). Mithradates Eupator himself had approximately 250,000 infantrymen, 40,000 cavalry, 130 chariots and a full-fledged navy with 300 ships with decks, 100 of them double-banks of rowers. The main part of the Pontos army was commanded by the brothers, Archelaos and Neoptolemos, who were generals with Mithradates as their commander-in-chief. The Armenia Minor cavalry of 10,000 men consisting of auxiliary and allied forces was commanded by Mithradates' son, Arkathias, phalanx legions of well-trained heavy infantry were commanded by Dorylaos, and 130 chariots were under Krateros' control (App. Mithr. 17).

The first battle was fought in Paphlagonia near Taşköprü with the Bithynian army (Strabo, XII. 3.40).[83] Commanded by Nicomedes, the army was defeated by Pontos' legions, and the news alarmed the Roman legions waiting at the Pontos-Cappadocia border. Meanwhile, after hearing about the victory of his generals against Nicomedes and allied forces joined him, Mithradates broke camp in Amaseia to march towards Paphlagonia. He invaded Paphlagonia and moved towards Bithynia. This advance met no resistance, and he easily conquered Bithynia. Meanwhile, his navy set out to the Aegean Sea. As a result of the news of consecutive defeats, the Roman army, including the Roman envoys and Cassius, retreated to one of the strongest fortified settlements in Phrygia, the Heads of Lions (App. Mithr. 19).[84] The Roman armies under Gaius Cassius and Quintus Oppius' command did not even dare to stand against the Mithradates and retreated to South Phrygia, discharging most of their soldiers. As a result, Phrygian cities and fortresses were surrendered to Mithradates, Cassius fled to Rhodos and Oppius was defeated by Mithradates after short-lived resistance in Laodiceia. Thus, the king had

[83] Arslan, 2007: 131.

[84] Arslan, 2007: 138. The location of this Phrygian settlement, which is also mentioned by Appian, has yet to be determined.

conquered all the Roman territories in Anatolia. He organized these territories according to the Persian administrative system, because, although the Pontos had a cosmopolitan structure, the Persian administrative system was dominant in the socio-cultural and socio-political structure of the lands (App. Mithr. 48).

After dominating Western Anatolia, Mithradates turned towards the islands. He was welcomed by the King of the Island of Cos who gave him the son of the Egyptian king, Ptolemaios I Aleksandros, valuable art works and significant amounts of money. He also confiscated 8,000 talents that were hidden in sacred temples on the island (Arslan, 2007: 175).[85] Mithradates' first defeat was the failure of his siege of Rhodes. His military infrastructure was not sufficient to breach the city walls. This was a big disappointment for Mithradates, after which he steered his navy towards Anatolia. There were two failures in Mithradates' Hellas expedition as well (Chaeronea and Orchomenus). The Chaeronea War (87 BCE) was perhaps the first actual battle between Rome and Mithradates. As opposed to the 40,000 people commanded by Sulla, the king's commander, Archelaus, had an army of approximately 120,000 men. As a result of these battles, Sulla signed a treaty first with Archelaus and then with Mithradates himself in Dardanos, ending the first war.

Ephesian Vespers

In 88 BCE, by order of Mithradates, all Romans were killed in the cities where Mithradatic dominance had been established. This strategic extermination is euphemistically referred to as the Ephesian Vespers (Magie, 1950: 216). Few Romans escaped Anatolia, and 80,000 are estimated to have been killed.

According to Arslan, in the cities of Anatolia, any reminder of the Romans was destroyed or eliminated. The Anatolians hated the Romans due to the high taxes they had continuously imposed. Most of the people in Anatolia were exhausted by the

[85] This wealth was possibly used to pay the soldiers' wages.

avaricious Roman governors. Perhaps, therefore, they volunteered to submit to the hegemony of Mithradates who provided better conditions based on rights and law. He also erased all debts of the cities and exempted them from taxes for a certain period. Another reason was economic. Mithradates also promised that by banishing Romans, their goods would be distributed equitably among the citizens (Arslan, 2007: 164-5). It is possible to say that Mithradates, with his Anatolian roots and adopted Greek identity, was more popular and had more support. The extermination was not a spontaneous decision. It occurred in one day as a well-coordinated action. As Magie notes, "He had a programme, and to one of his nature violence seemed the easiest method of putting it into effect. From one point of view, his action was a political blunder, for any reconciliation with Rome was henceforth out of the question" (1950: 217).

With this tragedy, an important threat in Anatolia for Mithradates VI was, at least temporarily eliminated. In fact, except for a small group who wanted to ingratiate themselves with Rome, in Roman dominated cities, people who paid taxes to Rome were discontent with the Roman presence (Rostovtzeff, 1941: 937). After this massacre, Rome grasped the size of the threat and realized that it has to consider negotiation, which was previously out of question.

While the war with the Romans continued, Mithradates sent his commander, Archelaos, to meet Sulla for peace talks. At the end of the summer of 85 BCE, Sulla crossed the Hellespontos with Lucullus' ships. He met Mithradates, who came from the city of Mitylene on Lesbos, in the city of Dardanos (Maltepe/İntepe) in Troas (Arslan, 2007: 241). According to the treaty, Mithradates would withdraw from the territories he had occupied, give part of his navy to Sulla so that he can return and also pay 2,000 talents of war compensation.[86] Sulla endorsed Mithradates in his ancestral kingdom and gave his word to vote for him as an ally of the Romans in the senate.

[86] App. Mithr. 57, 58; Olshausen, 1978: 429.

The treaty that Rome proposed after the extermination of its people in Anatolia is an insignificant treaty signed after a war. However, it was a good deal for Mithradates who had exterminated thousands of Romans. The First Mithradatic War could be thought as a violent storm that ruined both Greece and Anatolia, and with the peace of Dardanos cities and their inhabitants gradually recovered. However, it did not last long.

4.5.The Second Mithradatic War (83-81 BCE)

When Mithradates stayed true to the Dardanos Treaty by leaving the invaded lands and returning to Pontos, his kingdom was in disorder. The tribes in Cholcis and Bosporos, which had a significant contribution in the resource base of the kingdom, had revolted. Since these two problems had to be resolved first, the Second Mithradatic War was actually a defensive war. Meanwhile, Mithradates was sending spies to areas under Roman rule to keep his knowledge up to date. He was also employing people to spread propaganda about the unfair administration of Rome, trying to keep people’s hate for Rome alive (App. Mithr. 92-3).

The person who paved the way for the second war between Mithradates and Rome was the Roman commander, Murena. He was encouraged by Mithradates’ old general, Archelaos, and started to move towards Pontos and despite the lack of any provocations there he attacked Comana Pontica.[87] Mithradates complained about Murena to the Roman senate but took no action against the ongoing pillaging (App. Mithr. 65). The king probably took this course of action because he was still not able to suppress the uprising of the tribes in Cimmerian Bosporos yet and had not completed his preparations for a new war against Rome (Arslan, 2007: 275). Murena’s plunder of Pontos continued. He invaded and looted 400 villages that belonged to Mithradates VI and marched towards the capital city, Sinope. Quiet up to this point, Mithradates VI would now replace the defensive approach with any attack. Mithradates sent his light infantry and cavalry under the command of Gordios after Murena to retaliate and ordered them to

[87] App. Mithr. 64; McGing, 1986: 132.

attack villages (App. Mithr. 65). He probably intended to prevent Murena from getting supplies from these villages. Mithradates marched towards Murena with his army to hammer Murena. Murena and Gordios met on opposite sides of the Halys (Arslan, 2007: 279). Murena knew that the battle order of his army would be disrupted if soldiers tried to cross the river, making them vulnerable. This situation was first described by Sun Tzu as a military strategy. Crossing rivers is risky for armies. They should only do so in safety (Sun Tzu, 2013: 15). Therefore, both Murena's army and Pontic army kept watching each other on both sides of the river for days. The Pontic army crossed the river to fight when Mithradates' troops arrived. The Roman army was hammered, and Murena fled to Phrygia. The war ended with the help of Sulla's ambassador and Mithradates not only won the war, but also regained his reputation. Many cities that were ruled by Rome were returned to the king. Most importantly, Cappadocia was under his control once again, through matrimony. After Mithradates secured Cappadocia, he sent his son Machares to Bosporos and established order there as well (Arslan, 2007: 285). In 79 BCE things were stirred up again, and Sulla ordered Mithradates to give up Cappadocia. Although Mithradates said that he would obey this order, Sulla then died, and Mithradates raided Cappadocia with Tigranes (App. Mithr. 67). Meanwhile, a new alliance was emerging. With suggestions from the deserters, Lucius Magius and Lucius Fannius, whohad opposed Sulla and fled to Mithradates from Fimbria's ranks, Mithradates decided to support the movements against Rome in Spain. This way he could go beyond his borders and threaten Rome in its own territory. He sent ambassadors to the commander of this movement, Sertorius, and offered help, which was welcomed. In 75-74 BCE Sertorius offered him Bithynia, Galatia, Cappadocia and Paphlagonia in exchange for 3,000 talents and 40 ships. Sertorius sent one of his most important commanders, Marcus Marius, with a group of soldiers, as the Asia Minor Proconsul of Rome, to Mithradates to sign the treaty (Arslan, 2007: 287-9). However, Sertorius would later be killed, annulling the treaty, and Mithradates' only gain in this treaty would be using the soldiers Sertorious sent to him to give his army Roman training in preparation for the Third Mithradatic War.

4.6.The Third Mithradatic War (73-63 BCE)

Mithradates had been fighting the Roman army for a long time. This time he prepared for a more extensive war. He began the construction of war ships and started to recruit supporters. Pirates had helped him during the first war. The pirates of Crete continued to support him by supplying Cilician pirates as mercenaries (Arslan, 2007: 303-310). Mithradates stockpiled large amounts of grain in cities on the coast of the Black Sea to be able to supply his armies (App. Mithr. 69). He also raised an army of 140,000 infantrymen and 16.000 cavalrymen (App. Mithr. 69).[88] Meanwhile the Bithynian king Nicomedes IV, who died in 74 BCE, bequeathed his territory to Rome (App. Mithr. 71). Nicomedes IV's son asked Mithradates to help him get his throne back. He agreed to so and saw this is a reason to go to war with the Romans. He moved into Bithynia through Paphlagonia.[89] By now two generals, Taxiles and Hermocrates, were commanding his army. [90] Here, Mithradates gave his famous speech about his ancestry and his achievements against Rome. In naval battle, the fleet sent by Cotta was defeated in Chalcedon. However, the supplies of the Pontic navy and army had run out and because of this Mithradates' forces moved to besiege Cyzicus. Despite all efforts by Mithradates, Cyzicus did not fall because of help received from Lucullus' legion. Losing part of his navy in battle, Mithradates lost another part in a storm on his way back to Pontos (App. Mithr, 72-4). Meanwhile, part of the army was sent back to Bithynia, and Lucullus started to surveil it. The Pontic army was trying to reach the Rhyndakos (Kocaçay) River. They were worn out from hunger, cold weather and physically exhausted. When they realized they were being followed by the Roman army they panicked and broke formation. While a group of cavalry kept formation and advanced, more than half of the army had scattered. They were attacked while crossing the river with arrows and spears

[88] According to Arslan's compilation of information from ancient sources, Mithradates had a 300,000 army of 120,000 infantrymen, 16,000 cavalrymen and 100 Scythian chariots pulled by four horses each. Plutarch says he had 150,000 infantrymen, a substantial cavalry and 400 ships, and Memnon says 12,000 cavalrymen and 120 Scythian chariots (Arslan, 2007: fn. 1419).

[89] McGing suggests the spring of 73 BCE as the starting date for the war based on his investigations of ancient literature and research on Bithynian coinage (McGing, 1984: 14-18).

[90] App. Mithr. 70. While Mithradates was attacking Cyzicus, his other forces invaded other parts of Anatolia. His general, Eumachos, entered Phrygia, Pisidia, Isauria and Cilicia (App. Mithr. 75).

coming down on them. Sun Tzu's advice to cross rivers only when certain of safety was not heeded (2013: 14). The Pontic Army had made a strategic error. They were caught unprepared and unable to respond to the attack of Romans and were decisively defeated. Most of the army was killed on the river's edge, and others were killed while trying to escape. Of the soldiers, 15,000 were taken prisoner, and 6,000 horses and much plunder were confiscated (App. Mithr. 75). Lucullus was following a farsighted strategy until this point in the war. In fact, he decided to render the king's army ineffective by blocking the roads to cities where the king had stockpiled supplies when he foresaw that one of the biggest problems of Mithradates' large army was going to be to keeping lines of reinforcement open. Instead of directly engaging an army of this size, he waited until Mithradates made a mistake. The siege of Cyzicus and insistence on the matter was one such mistake. Mithradates found himself in a disadvantageous situation accompanied with problems of reinforcements. Lucullus had employed a tactical strategy described by Sun Tzu where supply lines are cut off, rendering the enemy ineffective without actual combat (2013: 7).

The king was establishing a new army in order to defend his kingdom when Lucullus invaded Pontos and besieged Amisus and the nearby Eupatoria. Another section of his army besieged Themiscyra, located on the bank of the Thermodon River.[91] In 71 BCE, he left the siege to a section of the army, and with the rest he marched against Mithradates, who was waiting at Cabeira with 40,000 infantrymen and 4,000 cavalrymen. Cabeira was the fortress that controlled the Lycus valley. Diophantus and Taxiles commanded Mithradates' newly established army.

Getting through winter was not easy task for large armies. During the third war, Mithradates established a camp in Cabeira to spend the entire winter. To secure access to

[91] App. Mithr. 78. Appian also provides details about this siege. He reports that the besiegers raised towers, built mounds and dug tunnels so large that great subterranean battles were fought in them. The inhabitants cut openings into these tunnels from above and thrust bears and wild animals and swarms of bees into them to repel the workers. The use of animals during warfare was quite common and has recently begun to be taken into considerations by scholars (Lockwood, 2009).

regional lines of communications, the camp had to communicate with the villages around Phanaroia to get news about the Romans.

Appian provides an important fact about Lucullus' march to Cabeira in his detailed account of the third war:

> "When spring came Lucullus marched over the mountains against Mithradates, who had stationed an advanced post to hinder his approach, and to signal continuously with beacons whenever anything should happen. He appointed a member of the royal family, named Phoinix, commander of this advanced guard. When Lucullus drew near, Phoinix gave the fire signal to Mithradates and then deserted to Lucullus with his forces. Lucullus now passed over the mountains without difficulty and came down to Cabeira but was beaten by Mithradates in a cavalry engagement and retreated back to the mountain".[92]

Phoinix then joined Lucullus' army with his soldiers as deserters. Lucullus' legions advanced through the valleys without difficulty and camped near Phanaroia in front of the Lycus River. Mithradates marched against the Romans without waiting for them to come to besiege Cabeira. This unexpected attack by Mithradates defeated the Roman army, and Lucullus was again forced to retreat back to the mountains. Mithradates has taken control of the entire plain. Lucullus thought that it would be a mistake to advance across the plain, and he had to find another way. With the help of a hunter, Artemidoros, who was familiar with the paths on Paryadres Mountain, he made a circuitous descent on the rugged paths above Mithradates (Arslan, 2007: 352). Lucullus had once again used good strategy. With the help of a local guide, he had managed to turn unfamiliar field conditions to his advantage (Sun Tzu, 2013: 20).

The next day, Mithradates was surprised to see the Roman army on top of a hill that oversees Phanaroia. The Pontic legions were also situated on a hill across from the Roman legions, but they had to wait for weeks because the topography was not suitable

[92] App. Mithr.79. The information provided by Appian is a reference to the positioning of the fortress or units returned as guards and uses of signalling stations. Moreover; Plutarch, Luc. 15:2. Arslan suggests that Phoinix might have sent signal either from Magnopolis/Eupatoria which was located 3 km north of Boğazkesen fortress or from the slopes of the Paryadres Mountain (Arslan, 2007: fn. 1593).

for the battle. During this wait the Roman army could not get food supplies because of its location in the mountains near Cabeira. The Roman army sent a legion to the allied Cappadocian King Ariobarzanes I to get grain. Lucullus' commander, Sornatius, who had gone with 5,000 soldiers to get grain, was attacked by a group of Pontic horsemen. The Romans won the battle and inflicted heavy damage by routing the enemy.

Later, Hadrianus, another commander, was attacked by a force of 4,000 men and 2,000 horsemen in a canyon, where Mithradates had already stationed forces to guard the road. On such ground, the Pontic cavalry was useless, and the legate, hastily arranged his men in battle-array, charged the infantry as well as the dismounted horsemen and gained a complete victory, pulverizing the entire opposing force. The impact of the news substantially escalated when Hadrianus flauntingly marched past the royal camp, displaying his wagons laden with grain and war booty.

While Roman soldiers were dealing with rich booty, Mithradates managed to escape to Comana Pontica. From there, after gathering the remnants of his cavalry, approximately 2,000 men, around him, he went on southward, probably to the neighborhood of Sivas and thence to the Euphrates. Finally, Lucullus assigned Marcus Pompey to track the runaway monarch, and it turned out that he had taken refuge in Armenia where Tigranes allocated him one of the royal estates as a residence. With Mithradates' escape from the Pontos in 71 BCE, all opposition, except those in isolated places, collapsed at once. Cabeira surrendered, and the other royal fortress hastened to follow its example. Treasures had been stored in many of them, which the Roman commander seized, everywhere ordering the legionaries, greatly to their discontent, to refrain from pillage. Lucullus marched along the coast as far as to the border of Armenia where he was greeted with slight resistance.[93]

[93] App. Mithr. 84; Plut. Luc. XIX.1.

The Greek cities on the coast, however, still held out, largely because of the presence of the garrisons stationed in them, and perhaps also because the citizens knew of the cruelty suffered under Roman rule and had no desire to experience it themselves. Thus, Amisus did not surrender to Lucullus' legate, Murena. The defense of the city was ably carried on by Callimachus, the commander of the garrison, whose engineering skill enabled him to employ every device for withstanding the siege. He could not, however, hold out against Lucullus and his army. After his demand for surrender was declined, the Roman general, retreated for a while to Eupatoria, and then, in a surprise attack at night, captured Amisus.

Around 71-70 BCE, Lucullus returned to the province of Asia where he was the governor and left his army in Pontos to rest. When he got back to Asia, he made arrangements on taxes and offered a solution for people who had been treated unjustly during the war. Meanwhile, he did not forget about Mithradates who fled to stay with Tigranes and sent an envoy to Tigranes to obtain Mithradates' return, although Tigranes rejected this request.[94] As a result, in 70 BCE, Lucullus came by sea from Ephesus to Sinope, which was resisting the Romans (Arslan, 2007: 383).

The wheat from Crimea was cut off because the king's son, Machares, was allied treacherously with Lucullus. This allowed Sinope to be seized by the Romans. After Amisus, Heracleia and Tieos, with the loss of Sinope, almost the majority of the Pontos had been taken over by Lucullus towards the end of 70 BCE.[95]

Tigranes, who was careful to stay out of the Mithradatic wars, despite his alliance with Mithradates, invited Mithradates, who had been in exile at an Armenian border garrison, to his palace after the Roman envoy's visit (Arslan, 2007: 389).

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[94] Plutarch, Luc. XXI. 6-7.

[95] Plutarch, Luc. XIX. 2; App. Mithr. 82.

Meanwhile, Lucullus marched into Armenia with 12,000 foot soldiers and 3,00 cavalrymen in 69 BCE (Arslan, 2007: 392). He assigned his legates, Sornatius and Hadrianus, and 6,000 soldiers to protect the territory of the Pontos, and he commissioned Triarius of the Roman navy to secure Anatolia's Bithynian and Pontic coasts (App. Mithr. 88). Tigranes directed one of his generals Mithrobarzanes with 3,000 cavalry and many infantry toward Lucullus. During battle, Tigranes' legions were defeated due to Mithrobarzanes' death (App. Mithr. 84). The Roman army under the command of Sextilius proceeded to the strongly fortified city of Tigranocerta, and the Romans tried in many ways to pull its fortifications down. When Lucullus arrived in Tigranocerta, he took over the siege and sent Sextilius and Murena to follow Tigranes who drafting legions. In 69 BCE, Tigranes gathered a large amount of soldiers and went back to Tigranocerta. He sent about 6,000 horses to Tigranocerta, which broke through the Roman line to the tower. Tigranes marched with the rest of his army against Lucullus. Mithradates, who was now for the first time admitted to his presence, advised him not to come to close quarters with the Romans, but to circle round them with his horses only, to devastate the country and to cripple them by famine if possible. The battle of Tigranocerta ended unfavorably for both Armenia and Mithradates VI (App. Mithr, 87). It should be noted that the warnings of Mithradates VI to Tigranes II to avoid a battle with Rome were neglected and played a part in this defeat. Lucullus was the victor of this battle. He pursued Mithradates VI, but failed to capture him due to geographical factors of the Armenian terrain and difficult winter conditions (Mayor, 2014: 114-117).

After this defeat Mithradates and Tigranes embarked upon raising a new army. Although they demanded help from Parthians, the Parthians remained impartial in this war as they had promised Rome. Mithradates collected around 70,000 soldiers and half as much cavalry from Armenian villages and divided this new legion into the Italian system of squadrons and cohorts (App. Mithr. 87). The legions under Tigranes' command were scattered by the Romans and were positioned somewhere near Mithradates' camp. Meanwhile, Tigranes started to retreat towards the inner parts of the kingdom.

Mithradates, however, returned to the Pontos in 68 BCE with his legion of 4,000 men and the remaining legions of Tigranes. The return of the king was celebrated by the people, who immediately sided with him. Many Romans in the kingdom were killed when he returned. The commander of the Roman legion in Pontos, Hadrianus, tried to stop Mithradates, but his efforts resulted in the extermination of the Roman camp surrounded by moats and the soldiers inside. However, when Mithradates got injured during this battle his army began to panic. Taking advantage of this panic, the Roman soldiers took refuge behind Cabeira's walls and survived.[96] As Mithradates recovered, another general of Lucullus, Triarius moved towards Cabeira with his own army. Mithradates had recuperated and lifted his siege on Cabeira to retreat to Comana Pontica.[97] Meanwhile, Triarius followed Mithradates to Comana. In 68-67 BCE, Mithradates' army passed through one of the two bridges on the Iris River that connect the two banks of the city, attacked the Romans unexpectedly and scattered them. The Pontic cavalry legions that planned to attack the Roman army from the left by passing through the second bridge could not help their king because the bridge could not bear their load and collapsed. After the unresolved Comana battle, the Triarius legions in Gazioura[98] and Mithradates in Comana, waited for winter to end and prepared for war.[99]

Meanwhile in Rome, a proposal was offered to the senate about Lucullus due to his activities in Anatolia, and it was decided to end Lucullus's long command and to reassign the provinces under his rule.[100] Thus, command of the war was given to Gaius Calpurnius Piso in 67 BCE.[101] However, Lucullus, who was on an expedition, heard that Roman legions camped in Gazioura needed help and convinced his tired army to move to the Pontos one last time to help their compatriots. Meanwhile, Mithradates crossed the

[96] App. Mithr. 88; Plut. Luc. XXXV.1.
[97] Dio Cass. XXXVI.10.1-2.
[98] Gazioura was one of the important garrisons of the kingdom. Greek inscriptions found there indicate that the official language of the state was also Greek (Studia Pontica III, p. 251; Mc.Ging 1986: 11).
[99] Dio Cass. XXXVI.10.3; App. Mithr. 88; Plut. Luc. XXXV.1; Dio Cass. XXXVI.12.1.
[100] With this proposal, Lex Gabinia, Lucullus would be removed from Anatolia. App. Mithr. 90; Plutarch, Luc. XXXIII.4.
[101] Plutarch, Luc. XXXIII.5.

Iris River and moved towards the Roman forces under Triarius's command. Triarius camped on the plain across from the Gazioura fortress, which was surrounded by natural protection. Triarius's army did not leave the fortress, and Mithradates sent part of his army to the Dadasa fortress where the Roman army kept their provisions.[102] This made Triarius act, and he came across Mithradates' legions in front of Scotios Mountain, approximately five kilometers from Zela. The Pontic army with strong cavalry split the Roman army into pieces and defeated them. A Roman who managed to escape, a centurion, injured Mithradates' leg, and the king was carried from the battlefield to the camp by his soldiers (App. Mithr. 89). After a short rest, the king got up again in order to reassure his soldiers and sent his legions to the Dadasa and Gazioura fortresses. Mithradates' legions eliminated the Romans in these fortresses as well. The Roman army was defeated badly. Triarius left for Lucullus's camp with a small group (App. Mithr. 89). Learning that Lucullus's camp was only a few days away, Mithradates set out with a large army to meet Tigranes. Mithradates, fortified the Taulara fortress where the provisions and valuables were stored and began to wait for Tigranes there.[103] As he advanced, Tigranes attacked Lucullus' scattered soldiers, too, and those who escaped carried the news that Tigranes was approaching with a large army. This news led the defeated Roman soldiers to rebel. Meanwhile, the fact that Lucullus was dismissed from his positions prevented him from forming a legion. According to Appian, most of the soldiers that heard that they were discharged and that Lucullus did not have any authority to command deserted the camp. Lucullus was left with a very few soldiers (App. Mithr. 90). This helped Mithradates to return to his kingdom. The king retook control of the fortresses in his kingdom and rid the Pontos of Romans. Then, they started to plunder Cappadocia with Tigranes. Lucullus retreated from his camp on the Cappadocia border to Galatia in 67 BCE and in 66 BCE he left the command of Roman

[102] This is thought to be Maden Kale, located five kilometers south of Tokat (Arslan, 2007: 425); Cumont and Cumont, 1906: 244 ff.; Magie, 1950: 1070 fn. 10. Olshausen and Biller suggested that Dadasa is Arhoy (1984, 67). I followed this suggestion because of its geographical relations with Gazioura and Arhoy.

[103] App. Mithr. 90; Plut. Luc. XXXV.2; 115; Dio Cass. XXXVI.14.2.

legions to Pompey.[104] The Lex Manilia of 66 BCE allowed Pompey to command the war against Mithradates and Tigranes.

Pompey first went to Mithradates with a peace offer.[105] After Mithradates realized that neither Armenia Minor nor Parthians would help him, he sent an envoy to Pompey to ask about his terms. Meanwhile, the Pontic army was deployed on the Galatia border. However, the number of deserters in the Pontic army started to increase due to lack of sufficient provisions in the region and fear of the Romans. The army regained some order when Mithradates started to catch and punish them (App. Mithr. 97). Pompey started to march towards Mithradates while he was slowly retreating towards the highlands of the Pontos to the territory of Akilisene (Strabo, XII.3.28). After a series of battles on the borders of Armenia, the king's army was badly defeated in a sudden night attack. The weakened Pontic army could not be recovered. The remaining legions tried different methods to stop the Roman siege. Together with cavalry legions, they had put all their efforts into creating gaps within the Roman army and started to escape to Armenia Major through them. During this journey Mithradates gathered 3,000 infantrymen and around 1,000 cavalrymen, and they reached the Sinoria fortress, which hosted royal treasures on a fortified outcrop on the border between Armenia Major and the Pontos.[106] Here he assigned one of his commanders, Menophilos, as the fortress and treasure guard and continued his journey to Armenia Major with his soldiers. However, when he realized that Tigranes had closed the doors of his kingdom to him, there was only one destination left: north of the Black Sea. So he began marching to Colchis on mountain roads.[107] Chasing the enemies he came across towards mountains and plains, he advanced towards the center of Colchis. He passed the plain of Phasis and marched north. He decided to spend the winter of 66-65 BCE at the old Miletus colony of Dioskurias on the coast, where the western tip of the Caucasian Mountains approaches

[104] App. Mithr. 91.

[105] Anderson discusses the route Pompey followed in pursuit of Mithradates VI in detail. His argument is based on accounts by Appian, Plutarch and Dio (Anderson, 1922: 99-105) (Anderson, 1922: 99-105).

[106] App. Mithr. 101; Strabo, XII.3.28; Magie, 1950: 355.

[107] App. Mithr. 101; Strabo, XII.3.23.

the sea. The king intended to cross the Caucasus, enter Scythia, and then cross the Maiotis (Azov) Sea to Cimmerian Bosporos (Arslan, 2007: 465). Here he was going to take back the kingdom he once granted to his treasonous son, Machares, and thus continue his war with the Romans. He was planning to cross the Bosporos and invade Italia with a sudden attack though Thracia, Macedonia and Hellas while the Roman armies were in Asia (App. Mithr. 101-102). With these plans in mind, he made it all the way to Panticapaion safely and took Bosporos back from his son. Then he sent envoys to Pompey for peace talks. He declared that the Pontic Kingdom should be given back to him, and that he would pay taxes to Rome. However, this attempt was inconclusive. Pompey was following Mithradates, trying to catch him by using the roads that he had used. Even so, it was very difficult to follow Mithradates. Pompey gave up this chase and conducted a seaborne siege and went to Amisus in 64 BCE to make governmental arrangements in the Pontos. However, Mithradates had started to gather his army and work towards fulfilling his great plan to invade Italia (Dio Cass. XXXVII.11.1).

His final plans were interrupted by a revolt. Pharnaces, son of Mithradates, did not want to provoke another war against Rome. There was discontent in the army about Mithradates. Pharnaces was proclaimed king by the army. Mithradates sent messengers to Pharnaces to ask permission to leave in safety. Seeing that none of his messengers returned, he feared that he would be delivered up to the Romans. He praised those of his bodyguards who remained faithful to him and sent them to the new king (App. Mithr. 111). However, the army killed some of them under a misapprehension as they were approaching. Mithradates then took some poison that he always carried in his sheath of his sword. It did no harm to him since he had inured himself with other drugs to protect himself against assassination by poisoning. These are still called Mithradatic drugs. He asked Bituitus, an officer of the Gauls, to save him from the danger of being captured by Romans by taking his life. Bituitus rendered the king the service he desired.[108]

[108] App. Mithr. 111. There are several versions about the death of Mithradates. The version of Appian is thought to be far from accurate. Other versions involve Mithradates' committing suicide without assistance. Dio claims that Pharnaces was responsible for King's death (Dio Cass. XXXVII.11.1).

Mithradates, who was the sixteenth in descent from Darius, lived 68/69 years, and of these he reigned for 57 years.[109] He was able to fight against Rome for almost 30 years. He was a major threat to Rome. His body was treated with respect by the Romans who ordered that he be buried in his ancestral cemetery (Dio Cass. XXXVII,13,4).[110]

The legate, Manlius Priscus, had begun to plunder fortresses in the Pontos. Although the Sinoria was very well defended, it fell because of one of Mithradates' wives, Stratonice, who was responsible for managing it, collaborated with the Romans (App. Mithr. 107). Moreover, Kainon Chorion (Mahalle Kale), where important treasures of the kingdom were hidden, was seized by Pompey and the walls of the fortress were destroyed. The cisterns (possibly rock-cut tunnels) were filled to make them unusable.[111] Another important fortress, Taulara, was also conquered by the Romans. Its storage room for dishes, furniture and harnesses ornamented with precious stones and gold inlays was so big, it took Pompey a month to send to Italia (App. Mithr. 115). The Romans conquered a lot of fortresses like this in Pontos. The fortresses and garrisons that were difficult to conquer due to their fortified locations in the Pontic Mountains were demolished by order of Pompey, so that they would not be used by bandits or rebels or against the Romans. Their rock cut tunnels to secure water sources were filled with rocks.[112]

[109] Mithradates Eupator is called the sixth in line from the first of that name, which is probably true (footnote provided by H. White). App. Mithr. 112.
[110] Højte, provides two possibilities about the burial place of Mithradates VI. He may have been buried in Sinope in a tomb constructed in connection with the royal palace there or in the older royal tombs at Amaseia (2009: 128).
[111] According to Strabo (XII.3.31), this was a naturally steep and sheltered rock and was less than two hundred stadia from Cabeira. On top there was a spring with plenty of water and on its skirts there was a river and a steep cliff. The rock where the fortress was built was so high that it was impossible to reach. Moreover, the area around the fortress was covered by forest, so mountainous and arid that enemies could not possibly camp in a hundred and twenty stadia area. This is why Mithradates' most precious treasures were kept here.
[112] Strabo, XII.3.38. Højte notes that in the reorganization of Pompey, the fortress had no role connected with urban structures during the Roman period (2009: 103).

In 88 BCE, the Bithynian king, Nicomedes, began invading the land of Mithradates during the First Mithradatic War. During this invasion, the Bithynian army probably reached the Pontos by passing through the Amnias Valley. Mithradates had gathered his army in the valley of Chiliocomon. He defeated the Bithynian army under the command of Archaelaos and Neoptolemaos in the passageway at valley's exit. It is probable that the two armies met at the junction of the road that leadsthrough the Amnias Valley to Sinope (Munro, 1901: 56). There are no records about the roles the fortresses in the region may have played during the war. The Second Mithradatic war took place in the west of the kingdom on the western border of Halys. There is no information regarding the involvement of any fortresses. The Third Mithradatic war occurred in the heartland of the Pontos. In 72 BCE, Mithradates arrived in Cabeira to raise another army against Lucullus. The Lycus Valley was used by both armies as camp locations. In the meantime, Lucullus reached the plain of Chiliocomon through Galatia probably by entering from the border protected by the Gerdekkaya and Murat Kolu fortresses and traveling along the Scylax Valley. From there, after traveling through the Lycus Valley, he laid siege to the city of Amisus.[113] In 71 BCE, Lucullus left the siege of Amisus to Murena and arrived at the road through the Paryadres Mountains where Eupatoria was. The information about his route comes from the records of an officer named Phoinix who may have served at the Boğazkesen fortress. The officer notified Mithradates who was at the Caberia fortress of the approach of Lucullus with a beacon.

The Mithradatic Wars can be described from two points of view, that of Mithradates and that of the Romans. Mithradates fought to preserve control over the ancestral territories of the kingdom and to end Roman hegemony in Anatolia. Rome’s objectives were to repel Mithradates from land that Rome had inherited and from the coast of western Anatolia as well as to defeat it’s most important enemy. Another motivation was that the person who successfully eliminated this enemy would be rewarded enormously. Sulla, Lucullus and Pompey were all eager to fight against Mithradates. Lucullus, the

[113]Lucullus looted wherever he passed. He took advantage of the abundance he found in the interior of the kingdom and acquired copious amounts of reinforcements (Arslan, 2007: 347).

commander of the third war was pursuing the fame and political success a victory against Mithradates would bring to him (Plut. Pompey XX). He was disappointed when the mission was reassigned to Pompey in 66 BCE. After defeating Mithradates, Pompey gained significant political prestige and reputation and celebrations were held in his honor in Rome. Pompey achieved the dream of all commanders who fought against Mithradates by defeating him and acquiring the prestige of having done so.

Mithradates VI gained popularity in Anatolia during the First Mithradatic War when he achieved swift victories and conquered territories that even included areas in mainland Greece. An extermination committed in Ephesus spread fear in both Greece and Rome. However, Mithradates' efforts against Rome generally consisted of weak attacks and ended mostly in defeat. Therefore, his rapid ascent quickly turned into a descent, and his popularity was diminished.[114] These defeats were the result of employing outdated Macedonian military formations that were no match for Roman military tactics and formations. Mithradates' adjustments of tactics in the third war were not enough to help him escape defeat. Mithradates was not only a military danger, but also a diplomatic threat to Rome. He was aware of this, and he used it to his advantage. His relations with Sertorius, the pirates of Cilicia and especially the regional powers of Armenia and Parthia represented diplomatic risks for Rome. This was felt to be especially perilous since it came at a time of upheaval in Rome. Although the alliance with Sertorius was promising for both of these anti-Roman powers, it was rendered ineffective by his assassination. The nature of the Armenian alliance based on marital relations was not an agreeable one. Tigranes saw it as an investment for his own prestige. He pragmatically avoided direct conflict with Rome. Mithradates did not have reliable and resolute allies, and it was impossible for him to win the wars.

[114] This is similar to Western Anatolian states switching to the Roman side after the campaign in Greece was unsuccessful.

4.7.The Reorganization of the Pontos

Having been assigned by Lex Manilia and the senate of Rome, Pompey took over the mission from Lucullus in Galatia in 66 BCE (Strabo, XII.5.2.).[115] He started to reorganize the kingdom. The Pontic kingdom's peculiar administrative pattern and centralized monarchy made it very difficult to urbanize. First, he assigned territories to the local dynasts: Armenia to Tigranes, Bosporus to Pharnaces and Cappadocia to Ariobarzanes. Regulations that were implemented during Lucullus' term were also continued in Pompey era. These included granting autonomy to cities of Amisus and Sinope and the continuation of the good relationship with Machares, the king of Bosporos (App. Mithr. 83). Pompey also exempted these cities, which had been badly damaged during the war, from taxation. Named *Lex Pompeia*, these regulations were finally revised in Amisus in 63-62 BCE and merged part of the region with Bithynia, allowing it to become a province. This province was initially referred to as Bithynia, but as *Pontos et Bithynia* after the Nero era (Marek, 2003: 63).

The Pontos appears to have been less urbanized when Pompey took over. By *Lex Pompeia*, he had administratively reorganized existing settlements and communities rather than founding new cities or poleis (Madsen, 2009: 30-5). The existing rural districts were grouped together as part of the *poleis*' territories.

The Pontos was divided into 11 *politeia* (Strabo, XII.3.1). These new, autonomous and scattered settlements, which were established as a strategy to facilitate its administration, were called *eparchia* by Strabo.[116] Under the new regulations, Amisus, Sinope and Amastris on the coast and Amaseia and Zela in the interior retained their original names. In the hinterland, where urbanization was low and populations were scattered, synoceism was chosen to be practiced by which cities of Pompeiopolis, Neapolis, Magnopolis, Megalopolis, Nicopolis were established (Rostovtzeff, 1941: 978). Marek

[115] App. Mithr. 91, 97.
[116] For detailed discussions, see Mitchell, 1993: 91; Erciyas, 2006: 177; Mitchell, 2002: 58; Marek, 2003: 40.

notes that Pompey's reorganization of civic institutions initiated urban development in the Pontos. How well the rural population was integrated into these structures is still unknown (Marek, 2009: 39).

During his initiatives toward building cities, Pompey rebuilt and populated the unfinished city of Eupatoria under the name Magnopolis, which had initially been established at the intersection of the Lycus and Iris rivers during the reign of Mithradates VI (Strabo, XII.3.30). The strategically important fortress, Cabeira, was named Diospolis by Pompey (Strabo, XII.3.30). Nicopolis was established in the southeast mountains of the kingdom in 66 BCE (Strabo, XII.3.28).[117] Soldiers discharged from the Roman military were sent to this city, which flourished rapidly due to its location on the trade network with the eastern provinces. Another city, Neapolis, was established in Phazemoitis (Strabo, XII.3.38). Megalopolis was also established by the unification of Culupene and Camisene. Owing to the fact that Zela hosted the highly respected Anaitis cult, it was one of the very few settlements that retained its name and its administrative structure. Another example of this was Comana Pontica.

Pompey also established an eponymous city, Pompeiopolis, in the north of the Amnias Valley (Strabo, XII.3.40). Pimolisene and the area to its northeast were left to local rulers. The southwest of the Mithradateion was left to Brogitaros (Mitchell, 1993: 91; Strabo, XII.5.2). The son of former general Arhelaos, Arhelaos, was assigned the priesthood of Comana, which held great influence over the region (Strabo, XII.3.34-35). Pompey assigned Aristarchos to rule Colchis (Strabo, XII.3.1). He also left Pharnaceia, Trapezos and a part of Gazelonitis region to the Galatian Deiotaros who stood with him during the Third Mithradatic War (Strabo, XII.3.13).

Attempts to create a Pontic identity were initiated as soon as it came under Roman rule. As discussed in Chapter 3, the degree of integration of the identities of communities in the kingdom with the superordinate Greco-Persian identitypromulgated by the kingdom

[117] See also App. Mithr. 105.

is unclear. During the Roman period, the Province of Pontos was established in order to create a Pontic identity. Mitchell thinks that a Pontic identity was the building block for the creation of a new identity as well as the basis of the idea of citizenship after Rome started its provincial system of governance (2002: 40-48). Vitale notes that sources from the imperial period began adding the word, Pontica, to the names of cities such as Herakleia, Comana and Apollonia (2014: 60). This can be seen as an expression of these cities' Pontic identity. It is also due to the effect of Roman history and administration (Vitale, 2014: 60).

CHAPTER 5

THE FORTRESSES OF THE MITHRADATIC LANDSCAPE

Defense refers to the prevention and response to physical attack. It is related to minimizing risk and maintaining the status quo. Defense is instinctual for human beings, stemming from basic human needs such as shelter, nutrition and reproduction in safety. The instinct to protect human communities led to the shaping of natural landscapes for the sake of defense and the establishment of defensive structures. Defensive systems required particular features and abilities, which led to the creation of social groups specialized in defense. The emergence of the state in human communities is closely related with the development of defensive technologies and the formation of armies. The process of institutionalization ended up with well-organized military troops specialized in war technologies.

Defense is intended to protect populations, soldiers and their supplies and equipment, to provide as refuges for people in times of need, and to provide safe bases for soldiers from which to protect the surrounding countryside or a particular route or crossroads of strategic value, as well as to serve as a deterrent to hostile attack and to warn of invasion and perhaps to delay enemy advances. In war- oriented environments, wars are manufactured according states' and kingdom's political and economic objectives. Fortifications are physical manifestations of this phenomena. They were built both in urban and rural areas. Urban defense was completed by surrounding cities with fortification walls. However, as Aristotle noted, enemies must be eliminated before they reach the city. Territorial defense is therefore fundamental. The territoria of cities, as Aristotle wrote, had to take defensive precautions to repel invasion attempts (*Politics*, 1326-7). Aristotle's main intent in this statement is to stress the necessity of safe guarding the territorium on which the economy of the city-state is based as well as to prevent the enemy from reaching the city (*Politics*, 1328). Standard procedure in warfare was in fact invading agricultural lands first (Rostovtzeff, 1941: 90-91). A city-state's main difficulty is providing enough food for its citizens. The agricultural system of the polis meant that it required territorial defense (Graeves, 2007), and the protection of agricultural areas was crucial.

Defense is a vital issue for all types of settlement. It can be taken into consideration in two dimensions, urban and rural. Urban and rural types of defenses are discussed below.

5.1.Urban and Rural Defense

With the development of the Greek concept of the polis, defensive networks comprised of fortifications, walls, towers, strongholds and so on were formed to protect cities' and political and economic assets in both urban and rural areas (Akarca, 1987: 118). Fortification was essential for all major urban settlements. The strong, durable and grandiose fortification walls that surround cities are among the best-preserved features of the past that have survived to the present.

An ideal Greek polis had a modest physical size and population, which could be controlled easily by its state. Therefore, Aristotle suggested that the parts of its chora should be mutually visible (*Politics* 7.1327a). Most polis settlements made use of topographic features, particularly hilltops and hill ranges to keep their territories safe. Mountains and hilltops were used as settings for forts, which were the main features of this defensive system, which included forts, watchpoints, strongholds, phrouria, strapedons and fortified rural settlements. Greek polis fortifications served not only as defensive precautions, but also as features of Greek identities. An indication of this can be seen in an inscription from Colophon, which shows that the people of the city asked for fortifications to be built to provide security as well as to serve as a connection to their ancestors, past and memories. Building this fortification would reinforce their local identity (Ma, 2000: 341).

During the 5th century BCE, the term ‘phrouria’ was used for describing fortifications located in *chora* and functioning to protect areas within *chora* that are outside of urban locations. They have extra urban characteristics and are structurally and functionally different.[118] Defensive units were being assembled within the territories (chora) of cities. This was made possible by the system of fortresses. *Chora* of cities were being guarded by surrounding them with defensive units. As a result rural life was and agricultural activities were protected and early warning systems for polis were being established. Earliest example of this are the border fortresses of Attica. Since the 5th century BCE city of Athens and its *chora* reaching up to the area of Euboia in the north was protected by the fortresses of Eleutheria, Oinoe, Panakhton, Lepsidrion, Dekeleia, Afidnai and Rhamnous (Akarca, 1987: 118). Best example of this in Anatolia comes from Smyrna. *Chora* of this polis was protected by fortresses in Nif, Karabel, Belkahve and Karabel (Akarca, 1987: 119). These fortresses were located in strategic points on roads, valleys and passaged leading to Sardeis and Aiolis (Ma, 2000: 341). Fortresses were tasked to guard passageways as well as protecting agricultural activities (Ma, 2000: 342). Miletos was organising and protecting its *chora* similarly with the help of fortresses. After Miletos’ annexation of its neighbour Pedesa, a garrison of commanders were sent to establish fortresses within the newly added territory. Ordinary citizens of Miletos are observed serving as watch-men in the fortresses (Ma, 2000: 341-3).

Fossey notes that rapid development in building fortification networks in Eastern Central Greece began in the second quarter of the fourth century BCE. An increase in threats to an area where agriculture-based economies such as that of Boiotia made territorial defense a necessity (Fossey, 1992: 129). There were several networks in this region. One is situated in Palaiothivai in northern Boitoia. The fortresses in this system are linked by being mutually visible. This helped the Boiotian army under the command of Epameinondas (364 BCE) by providing them instantaneous information about a possible Spartan invasion. This system of fortifications based on the principle of

[118] Thucydides provides many examples for the positioning of the phrouria, See terminology section.

intervisibility controlled passes in mountainous territory and served to protect both military and civilian sites (Fossey, 1992: 112-9). Another such system is in Anaphorites. It consists of fortresses established in mountain passes between the coast and the interior (Fossey, 1992: 122).

Fortresses served as small links in defensive chains that guarded the transportation corridors through territories. The earliest examples of such fortresses were probably the Spartan forts in Messenia. In Attica, there was a network in the Argolid that included Hysiai, Mycenae, Katzingri, Kasarma and Asine. Such fortresses, are of great value in the study of structural details to determine their functions because in some cases they also served as the acropolis of a small town or village in this region. The chief purpose of these fortresses was to surveil and protect a road, a particular strip of land or a stretch of vulnerable coastline (Winter, 1971: 43). Another example comes from the northern coast of the Black Sea. Settlements established in the sixth century BCE during the Greek colonization reshaped the Bosporan landscape. All the farmstead and local villages that had popped-up beside each other were covered with networks of fortresses and roads (Alcock et al., 2005: 360). The primary element of Mithradates'administrative policy in Bosporos was the employment of fortresses. In Taman, 203 rural sites have been discovered. The chora of Gorgippa is also known to contain rural settlements dated to the late second to early first century BCE. Large fortresses such as the Raevskoe and Semibratnee are present in this area. It is possible to observe control of rural areas by the fortresses by the time of Mithradates VI. After the transfer of the rule of Bosporos to his son, Machares, rural settlements came under control of fortresses and were converted into fortress-oriented *katoikiai* (Saprykin, 2003).

During the Hellenistic period, rural life was controlled and protected with fortresses and watchtowers (McNicoll, 1997: 208). Fortresses were needed to ensure the safety of agricultural economies. Ober suggests that during the Hellenistic period, defensive networks began to be constructed and that this was the strategic policy that defines the period (1985: 75). There has been no studies of the defensive strategies of Hellenistic kingdoms in Anatolia in rural areas. The available information suggests that the Seleucids established defensive and military units in Anatolia. Military settlements occupy an important place in their settlement patterns (Billows, 1997: 303; Bar-Kochva, 1976: 84). Egypt's system of military settlements is well known (Chaniotis, 2005: 85). The Seleucids' mercenaries were settled as military colonies (Cohen, 1995; Chaniotis, 2005: 86). This type of settlement was unknown in mainland Greece and is not mentioned in the ancient sources. Other than these, in order to provide security and control *phrouria* were spread across rural areas at the ridges' of valleys (Captedrey, 2007: 160). Stretching from Eastern Anatolia to Eastern Syria, Zeugma and Apamea, Jebel Khalid and Dura-Europus are the important phrouria of the Seleucid period. A nearby settlement suggests that supplies and recruitment might have been got there (Napoli, 2000: 122).

The terms, territory and fortress, are often used together because fortresses determine the limits of territories under their protection. The components of territories include agricultural fields and rural communities. The function of the fortresses was to protect the territory and serve a base for military action to protect agricultural activities (Ma, 2000: 342). Inscriptions make this clear. An inscription from the fortress of Rhamnous indicates that the security of the farmers in its area of influence and their crops was the responsibility of the generals in its command (Ma, 2000: 342). In addition, Xenophon provides insights about the Achaemenids' defense of agricultural lands. The last chapter of Anabasis says that Xenophon and his commanders could not conquer the fortress of the Persian commander, Asidates, after its defenders sent out signals and reinforcements arrived. They pillaged neighboring agricultural lands instead (Anab. VII.13). There is also information that indicates the participation of the inhabitants of settlements protected by fortresses in battles. Villagers as well as soldiers from the village of Selge are known to have protected their territories by participating in battles and returning to their lands afterwards (Polyb. 5.72.6). Village communities and agricultural lands suffered the most damage during wars; however, there is only a single account of the plunder in the Pontos by Strabo (Chaniotis, 2005: 126). Strabo mentions the fertile valleys of Chilicomon and Diacopene and describes the effect of the Mithradatic wars on them: “There are several demolished strongholds in my country, and also much deserted land because of the Mithradatic wars. However, it is well supplied with trees; a part of it affords pasturage for horses and is adapted to the raising of other animals; and the whole of it is beautifully adapted to habitation” (XII.3.39).

When investigating Anatolian geography, first thing we can see that an urban concept is not developed contrary to Western Anatolia and Mainland Greece and rural life is densely fortified. Earliest example comes from Urartians who lived in Eastern Anatolia and Transcaucasia during the Iron Age. Here is a system where fortress states regulate dispersed rural communities (Kleiss, 1994). Some of these fortresses are centers of the governmental structures and some are constituents of the defensive network.

In Hellenistic period, on the western border of the Mithradatic kingdom, Galatians were dominated Central Anatolia are with three tribes, the Tektosages, Tolistoboi and Trokhmi. After migrating to Anatolia they did not necessarily developed city life.[119] They lived in settlements designed as forts and dominated the major part of the region (Mitchell, 2005: 283). These were located in naturally defendable sites on rocky out-crops dominating large agricultural territory. These fortresses not only function as fortifications but also served as core of the agricultural settlements scattered around the landscape (Mitchell, 2005: 291). This pattern indicates that the settlements with large populations was organized as village communities rely on agricultural activities for their subsistance (Mitchell, 2005: 292). Blucium (Karalar), Peium, Ancyra, Gorbeous, Tavium and Mithridateion primarily along with those who could be identified as fortresses by researachers constituted a defensive network in Galatia (Mitchell, 1993: 84).

The Galatian fortesses were aristocratic residences and can be seen as physical manifestations of the pattern of aristocratic control imposed on the region by the

[119] The Galatians were possibly influenced their predecessors of the region, when establishing settlements and combining native settlement characteristics with their way of life (Strobel, 2002: 32).

Galatians (Darbyshire et al., 2000: 92). According to Darbyshire and et al., the Galatian examples have no similarities with better known hilltop forts in Europe. The Galatians may have assimilated the Anatolian style of fortification since they had to adapt to the particular conditions and resources of the local environment (2000: 94).

Vardar conducted surveys of the region and identified 35 fortresses.[120] Ulusoy's master's thesis used visibility analysis to determine the connections between the Galatian fortresses. She notes that the fortresses were not positioned at higher elevations, but were in fact situated on low hills where they are less discernible in the topography. The fortress of Tabanlıoğlu is an example of this (2006: 104). According to her visibility analysis, the visibility of the fortresses is quite limited. Some fortresses form clusters on the topography. This is interpreted as a result of the Galatian tribes living in small groups (Ulusoy, 2006: 106).

The administration of the Mithradatic kingdom was formed in relation to the settlements and agricultural lands that its fortresses controlled. Since the Mithradatic kingdom came into existence in the Central Black Sea region, the definition and protection of its hinterland was a politically and economically important issue. McGing states that some of the fortresses dispersed throughout the landscape were the heritage of Pontos' Persian past, and that they have characteristics of the Achaemenid culture (McGing, 2014: 26). Satraps commonly appear as *strategos* (commanders) during the Persian period where

[120] For all the studies by Vardar of Galatian fortresses, see: Vardar L., (2000), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara ve Kırıkkale İlleri, 1999' XVIII. Araştırma Sonuçları Toplantısı I, 237- 241; (2001), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara ve Bolu İlleri, 2000', XIX. Araştırma Sonuçları Toplantısı I, 297-302; (2002), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması:, 2001', XX. Araştırma Sonuçları Toplantısı I, 203-210; (2003), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara ve Eskişehir İlleri, 2002', XXI. Araştırma Sonuçları Toplantısı I, 117-126; (2004), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara ve Kırıkkale İlleri, Anadolu Medeniyetleri Müzesi 2003-2004 Yıllığı, Ankara, 315-330; Vardar L. & Vardar N. A., (1997), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara İli 1996', XV. Araştırma Sonuçları Toplantısı I, 245-264; (1998), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara İli 1997', XVI. Araştırma Sonuçları Toplantısı I, 287-292; (1999), 'Galatia Bölgesi Kaleleri/Yerleşmeleri Yüzey Araştırması: Ankara İli 1998', XVII. Araştırma Sonuçları Toplantısı I, 163-165.

the system of satrapy is prevalent and fortresses are established as administrative centers. This tradition was continued in the Mithradatic kingdom.

There is fragmentary information about the kingdom’s fortresses. Although some information has been acquired as a result of archaeological studies carried out in 4 of the 57 fortresses, it is still difficult to postulate their functions at a macro-scale. The fortresses in the Pontos can be assumed to have similar functions to those described above. Their relationships with agricultural lands are in fact very strong as Chapter 7 will show. The physical characteristics of fortresses are almost identical. They are built on morphologically similar locations, namely, on isolated rocky outcrops. Their designs follow a terrain dependent layout. Some sections are supported by fortification walls depending on the topographical properties of the outcrop. For most, the only structure belonging to the Hellenistic period are rock-cut tunnels. In some ashlar masonry wall remains are also present.[121] Some traces of cuts in rocks probably belong to the wooden structures that are observable in most fortresses. All the fortresses except three (Kaledere, Muratkolu and Boğazkesen) have rock-cut tunnels. This feature is discussed below in detail. Some fortresses include rock tombs on one side of the outcrop on which they stand. Interconnections between fortresses with their surroundings are discussed in detail in the following chapters. The fortresses’ relationships with topography and amongst themselves will be discussed in detail in Chapter 7. Inferences about fortresses can be made by using information from primary and secondary sources.

5.2.The Terminological Settings of the Pontic Fortresses

Languages are shaped according to the needs and accretions of different societies, and the terms in a language evolve in time. Therefore, when languages are translated into each other correspondence can become a problem. The terminology in question here has been handled as they are expressed in ancient resources. The terms for military elements

[121] Vitruvius claims that for fortification walls, in order to provide maximum stability and endurance, ashlar masonry built from big blocks of stone is used (Vitruvius 1.5.1, 1.5.8).

in the ancient sources about the Pontos have been compiled in this section. Although identified in the modern literature as fortresses and strongholds, these structures are defined with different terms in ancient Greek terminology.[122] Hence, the terminological framework plays a crucial role in being able to contextualize them. Admittedly, similarities in both form and order do not necessarily preclude functional differences, but most structures can still be classified in accordance with ancient terminology.

Phrourion (φρούριον)

The term, *phrourion*, is usually translated as fort or military base. It refers to a permanent base established for offensive military purposes. Many scholars also take *phrourion* to mean garrison town or fort. On the other hand, Nielsen points out the correlation of this term with the term, polis, in Diodorus Sicilus and some other classical sources (Nielsen, 2002:51). In spite of the fact that Diodorus uses *phrourion* as a military term, and in some texts he distinguishes polis from *phrourion,* he repeatedly links *phrourion* with settlements that were poleis and not military bases. Nielsen discusses this issue and concludes that unless supported by evidence from Archaic and Classical sources, the settlements mentioned in Diodorus' texts should not be identified as phrouria (Nielsen, 2002: 62). Terms used in specific historical texts should be evaluated in the context of a more general and better understanding of a wider array of literature.

There are several examples in which the term simply refers to garrisons. It is also used so as to indicate boundaries of city-states. Xenophon mentions the *phrouria* along the frontier between Medes and Assyrians (Cyropaedia, 1.4.16). Furthermore, in the same source, he states that Cyrus the Younger considered building a fort on the heights between the land of the Armenians and Chaldeans (Cyropaedie, 3.2.1).

[122]To define fortress, ancient resources use the specific words: phrouria, ischuria, khoria and erumna. These terms are generally used to describe naturally defensible places (Hanson, 1998: 112).

Writing of his own city, Amaseia, Strabo reports that it has the advantages of being both a city and a fortress. Here the term, πόλις, for city and the term, φρουρίον, for fortress are used separately to define different concepts (Strabo, XII.3.39). Pimolisa, whose location is not agreed upon, was a royal fortress termed as φροὺριον βασιλικου and was a part of a settlement called Pimolisene lying on both sides of the Halys River (Strabo, XII.3.40).

The term, *phrourion*, was also used for a temporary military camp during the siege of Chios by a commander of Mithradates named Zenobios, a military official, in 86 BCE. According to the text, he established a phrouran (garrison) at the city gates (App. Mithr. VII.46). After Mithradates seized the Ionic city of Stratoniceia he established a garrison here. Appian called this garrison a φρουράν (App. Mithr. XII.21). This can be considered a temporary camp. Moreover, Sulla took advantage of the famine in Athens during the First Mithradatic War and built forts around the city in order to worsen the famine. φρούρια was used here as well to indicate the fortifications used for blocking entrances to and exits from the city (App. Mithr. 35).

After the failed invasion of Greece by Mithradates, Sulla ordered Mithradates to remove all of his garrisons and pay war compensation in accordance with the treaty terms. The text uses Φρουρίων for these garrisons, which indicates that they were temporary installations (App. Mithr, 55). Another usage of *phrourion* can be seen in Plutarch's *Life of Pompey*. Here, it describes a pirate fortress, referring to the hilltop forts that were beginning to be used by pirates (Plut. Pomp. XXVIII.1).

Royal military officers were the leaders of the fortified towns (*phrouria*). All these fortresses absolutely had to be supplied with water and food in order to be able to withstand sieges. The main function of these Hellenistic forts, as in the Persian period, was the defense and security of the territory, but they were also a way to assure the payment of royal tributes. Similarly, *phrouria* served to reduce fraud by taxpayers simply by their presence. This form of land control also permitted kings to manage a large territory with fewer troops. Another of the *phrourarchos'* duties was the payment of his troops' salaries through a direct relationship with the royal financial officials. These payments were made not only in coin, but also involved land in the regions the troops were to protect.

A *phrourarchos* also obtained some economic power. To maintain defensive installations they could recruit workers from the villages (Baker, 2000: 187). Bauschatz underlines role of phrourarchoi as military officials in law enforcement in Ptolemaic Egypt. In the immediate vicinity of the phrouria where they commanded, phrourarchoi were supposed to resolve conflicts, arrest and interrogate suspects and collect taxes (2005: 92). In his *Laws,* Plato underlines the importance of the protection of the territory b*y phrouarchoi.* According to him, a chora is divided in to twelve units, and each of the twelve communities assign five *agronomoi* or *phrourarchoi*. Each group of five agronomoi or phrourarchoi chose twelve young men to help them with their duties (6.760b). Each group of officers spent one month in each unit by rotating monthly through the year to learn the territory thoroughly in the different seasons (6.760c-e). Their main duty was to defend the territory and build a fort when needed. In order to fulfill these duties they could employ rural inhabitants.

5.2.1. The Phrourarchoi of the Pontic Kingdom

Bacchides (70 BCE)
He fought against the Romans as the garrison commander of Sinope (Strabo, XII.3.11). As Strabo states, Bacchides was unpopular among the citizens of Sinope for being a poor governor.

Damophiles (72-70 BCE)
He was Heracleia Pontica's phrourarchos, and he opened the doors of the city for the Romans during the siege. Damophiles had less influence than Kannakorix, another

phrourarchos. In Heracleia Pontica, the phrourarchos was also involved in civic government (Portanova, 1988).

Kannakorix (72-70 BCE)

He was assigned as phrourarchos of Heracleia Pontica by Mithradates, and around 4,000 soldiers were put under his command (Memnon, XLII). He shared his title with Lamachos and later with Damophiles. During the war, he cooperated with the Roman, Triarius, and surrendered Heracleia Pontica as well as the cities of Tieon and Amastris to the Romans in order to leave the city safely with his army (Memnon, LII; FGrH 35: 7).

Metrodoros

The capital city of the Mithridatid dynasty was Amaseia, whose citadel was held by a garrison under the command of the phrourarch, Metrodoros.[123] He made a dedication an altar and a flower bed for the king Pharnaces to the gods (Fleischer, 2009: 117). An inscription is situated just above the tomb of Pharnaces in the Amaseia fortress. It stipulates that no man was allowed to enter the royal fortress without permission from the phrourarchos (Ammianus Marcellinus, XVI7.9).

5.2.2. Katoikoi (κάτοικοι)

Katoikia is the term for a collective village community. During the Hellenistic period, the term was used for military settlements (Polyb. 5.77-8). These types of settlements occur in the time of Alexander (Billows, 1995: 146). *Katoikoi* were settlements in an intermediate stage between the polis and the kome. It has generally been considered that katoikoi were military settlements, established primarily to control vulnerable regions (Debord, 1976: 46). Military personnel were given plots of land (kleroi) by the king and settled them with their families (Sherwin-White and Kuhrt, 1993: 167). At the beginning these settlements situated along the West coast of Anatolia, and the settlers were used in military services in return of lands and civic rights by Seleucids (Fingerson, 2007:

[123] OGIS, I 573-575 no: 365.

109).[124] According to Bar-Kochva, military settlements can be classified regarding to their municipal status: rural settlements called *katoikia* in Lydia and Phrygia; komai or villages of Iranians in western Media; choria or phrouria, fortresses garrisoned by soldiers in active service who were granted large land allotments instead of pay, and finally, cities organized as regular Greek poleis (Bar-Kochva, 1976: 37).[125] In the document about the former Magnesian *katoikoi* mentioned by Dittenberg,[126] the term was reserved for farmers serving in the reserves, and not used for active soldiers in permanent garrison as those in palai-Magnesia seem to have been, even if they did own land.

Fingerson believes that the Macedonians inherited *katoikia* from Achaemenids to raise manpower in rapid way for warfare (2007: 120). During the urbanization movement, these regions were intentionally populated andsynoecism was used to transform them into larger settlements. Akalın notes that katoikoi were established near temple states to be able to control them (Akalın, 2006: 72). During the Roman Empire, these *katoikoi* survived in the territory of the polis under the rule of katoikountes.

Saprykin mentioned that the research by Maslennikov in the Kerch peninsula revealed that most significant part of the resident population of former peasants who had lived in unfortified villages, moved to the coastal zone and settled around the newly established forts as semi-dependent ploughmen similar to the Hellenistic *katoikoi* (Saprykin, 2006: 280). The type of settlement identified as *katokoi* belonging to Hellenistic period has not been discovered in the Pontic landscape although it has been observed north of the Black Sea. It is discussed here because it is analogous to the governmental scheme of the kingdom.

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[124] These colonies were mainly established by Seleucids in Lydia and served to protect the region against Galatians. Phrygia and Lycia are other locations where military colonies have been identified (Cohen 1991: 43). Stratoniceia, Hyrkania, Magnesia and Sipylos are identified as katoikoi.

[125] Bar-Kochva's detailed investigation notes that the term, katoikoi, does not only represent military settlements, but is sometimes used to describe self-contained settlements (1976).

[126]*SIG* 97-98, (167-168).

5.2.3. Eruma (ἔρυμα)

To define isolated fortresses, ancient resources use specific words as *phrouria*, *ischuria*, *choria* and *erumna*. These are generally used for naturally defensible locations (Hanson, 1998: 112). ἔρυμα is defined by the *Liddell-Scott-Jones Lexicon of Classical Greek* as a defensive barrier, stronghold or strong position.[127] Let us take a look at forts identified with this term in the study area. Strabo, for instance, used the term, έρυμνον πόλισμα, meaning fortified town to describe Pharnaceia (Strabo, XII.3.16). Here, έρυμνον indicates that the Pharnaceia is fortified.

The word έρυμα, used in relation to an important stronghold, Sagylion, should be paid close attention:

> "Above the country of the Amaseians are situated the hot springs of the Phazemonitae, which are extremely good for health, and also Sagylium, with a stronghold situated on a high steep mountain that runs up into a sharp peak" (Strabo, XII.3.38).

Here we see that Sagylion is not only a fortress, but a settlement as well. According to Ober, fortresses needed the presence of a regular army and infrastructures such as garrisons (Ober, 1985: 75). These structures may have recruited from the nearest settlements. Therefore, it can be suggested that the term έρυμνα is used for a fortress including a settlement. Another suggestion would be that these fortresses were a part of a settlement from which they recruited.

Furthermore, Strabo also called Kainon Chorion an έρυμνον. Here is a massive rock in an impregnable position (Strabo, XII.3.31). Strabo stated that Kainon Chorion was surrounded by forests, which provide it enough natural fortification to keep enemy armies from camping within 120 stadia of it (Strabo, XII.3.31). Here, the name of the

[127] Its meaning may derive from its use with the word, τειχους, to mean defensive barrier of the wall (Herodotus, VII. 223).

fortress itselfmust be considered. The word, *chorion* (Χωριον), in Anabasis, refers to a fortified place or stronghold (Xenophon, Anab. 4.2.1).

Side (called Sidene, Chabakta and Phadba in later times), a fortress built next to the sea in the Sidene Valley that comes after the Themiscyra Valley, is described as χωρία έρυμνά by Strabo (XII.3.16).

5.2.4. Phylakeion (φυλακεῖον)

This term indicates the permanent or temporary guard-post or watch-tower. *Phylakeia* built in a commanding view and provide place for soldiers for accomodation. Diodoros give details about the arrangements of the unit (Diod. Sic. XVII.84.5). During the Third Mithradatic War, Appian mentions the commander of the advanced post (προφυλακαι), Phoinix who was assigned by Mithradates warned the King about Lucullus' approaching with a fire beacon (App. Mithr. 79). After giving the signal, Phoinix deserted to the Romans with all his forces.

An inscription from Gazioura in the Hellenistic period, we learn that the commander of the fortress is identified as *φυλακος*, and that entry to the fortress was under his strict control (Anderson et al., 1910: 278). It can be deduced from this that Gazioura was identified as Phylakeia.

5.2.5. A Later Term: Aplekta

The term as used for defining Tokat (Dazimon) Fortress in Byzantine times. In the '*de Ceremoniis of Constantine Porphyrogenitus*' written in the mid-tenth century, it is described the system of aplekta bases where the army was gathered on its way east (Foss, 1996: 162). The first of these was Malagina, where the generals of Thrace and the Opskian theme joined the imperial expedition, that is, it was gathering point for troops from the Europe and Bithynia; the rest joined the emperor at Dorylaeum (the second aplekton) and later stages.

5.2.6. Officers

Generals (Strategoi)

Strategos denotes the commander of an army. *Strategoi* in the Greek army could be assigned by the king as well as elected by the people. Therefore, it is possible to interpolate that generals also actively took part in political life. They proposed decrees to the council and the assembly.[128] They were supported by the phrourarchoi (Chaniotis, 2005: 32). An inscription from Olbia dated 78-77 BCE, stated that a curtain wall dedicated to mother gods was donated under the administration of Mithradates VI by a general who was the son of Thaias and the city governor, Diogenes (Krapivina and Diatroptov, 2005: 169). The duty of the *strategoi* described in it includes administrative tasks as well as commanding the military. This is common for Hellenistic monarchies and was implemented by the king with the assignment of the *strategoi*. In this instance in Olbia, Mithradates assigned Diogenes as governor and commander of the Pontic troops (Krapivina and Diatroptov, 2005: 170).

Archelaos and Neoptolemos

They were commanders in Cappadocia in the campaign against Sulla. During the First Mithradatic War, Archelaos and his brother, Neoptolemos, were generals of the Mithradates' army (App. Mithr. III.17). Archelaos fought in mainland Greece during the First Mithradatic War. He delivered the terms of the Treaty of Dardanos to Mithradates. He fought alongside Rome in the third war and was rewarded with Comana priesthood by Pompey (Strabo, XII.3.34).

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[128] A decree from Rhamnous reveals that the strategos has not only military, but also civic features (*SEG*, III.122)

Diaphantos

Diaphantos, who was identified by Strabo as a strategos, was sent by Mithradates VI with an army to stop the revolt and protect the cities and the chora of Bosporos from the Scythians.[129] An inscription at Chersonesos states that the city awarded him with a golden crown and a bronze statue on the acropolis (Pritchett, 1979: 38). As a well-trusted general, Diaphantos also acquired a title within the dynasty.

Menandros

Menandros was one of Mithradates' generals. It is recorded that he was eliminated by Sornatius near Cabeira in 71 BCE (Plut. Luc. XVII.1).

Menemachos and Myron

Their names are mentioned as participants in the third war near Cabeira. In Plutarch's accounts, Menemachos and Myron were the *strategoi*, Menandros was the commander of the cavalry, and Myron was the commander of the infantry (Plut. Luc. XVII.1).

Eumachos

Eumachos was assigned by Mithradates as governor of Galatia and was the commander of one of the fortresses there. Murat Kolu and Gerdekkaya were possibly components of this unit.[130] Eumachos also took part in campaigns to Phrygia, Pisidia, Isauria and Cilicia during the Third Mithradatic War.

[129] Magie, 1950: 195, 324; for the inscription honoring Diophantus, see: Ditt. *Syll.*^{3}ii. 709.

[130] Eumachos was defeated by Deitaros in Galatia during the Third Mithradatic War and had to withdraw back to Pontic lands after the loss of his military units (App. Mithr. 75).

Kallimakhos

He is the general who defended the city of Amisus using various mechanical contrivances during the Roman siege. He set the fire to Amisus when he abandoned the city (Plut. Luc. XIX.2).

Taxiles and Hermocrates

Taxiles and Hermocrates were two of the king's important commanders. Taxiles fought under the command of Archelaos during the Khaironeia war. His name was mentioned during the struggle against Fimbria in Mysia. Later, he was sent to invade Paphlagonia with Hermokrates (App. Mithr. 70).

Dorylaos

Dorylaos (son of Philetaerus) was a general and good friend of Mithradates VI. He was a general during the war against Sullaat Orchomenos (Panichi, 2005: 208). He was also assigned as the priest of the Comana Pontica (Strabo, XII.3.32). He was the leader of the phalanx named *epi ton dunameon*, one of the most important ranks in the Pontic administration.

Dorylaos Taktikos

Strabo's maternal grandfather held control over 15 strongholds. He was also known as the φιλος of Mithradates V. He organized an uprising against the king shortly before the end of the Mithradatic rule. He must have been important because he commanded 15 strongholds (Strabo, XII.3.33).

In general, there were very few terms in the language that indicated military officials. Since they were generally named as strategoi as a large category of officials, information on their duties and authorities and their ranks within the kingdom is insufficient. The ancient sources by Strabo, Plutarch, Appian and Memnon were reviewed, and the terminological analysis compiled the names of the fortresses, the administrative military officials and military events in the Pontic region. It seems that the authorities and titles given by the kingdom's institutions and assigned to officials varied with conditions.

According to Olshausen, there were three main types of forts in the Pontos (Olshausen, 1980: 188). The first and most common types are fortresses that function as administrative centers. The fort of Gazioura is an example of this type. It oversaw distant districts and could easily access them. The fort is under the responsibility of the garrison commander. He guards and protects the area and the king's interests. The other two types have military purposes such as the treasury, which was heavily fortified and difficult to access (Olshausen, 1987:189). Olshausen's classification was guided by descriptions of fortresses in ancient sources. As the table shows, the fortresses mentioned by Strabo are noted with their descriptions (Table 5.1). The fortresses of Gazioura and Pimolisa are identified as βασιλικου or royal. This suggests that along with their defensive duties, these fortresses also functioned as governmental units. Amaseia was the capital of the kingdom until Pharnaces I housing the royal cemetery as well. Strabo's description of Amaseia includes the vicinity of the fortress. The term, *ἔρυμα* was widely usedin the account because it was located on rocky outcrop, and this term underlines its impregnability.

Table 5.1 Definition of the fortresses in Strabo's accounts

Site	Ancient term	Definition	Source
Amaseia	πολεως ερυμνοτατης, πολεως φρουριου	City and fortress	Strabon, XII.3.15 Strabon, XII.3.39
Pimolisa	φρουριου βασιλικου	garrison town, fort	Strabon, XII.3.40
Sagylion	΄έρυμα	Royal fortress	Strabon, XII.3.38
Kainon Khorion	΄έρυμα	fortress	Strabon, XII.3.31
Kamisa	΄έρυμα	fortress	Strabon, XII.3.37
Khabakta	χωριά ερυμα	stronghold	Strabon, XII.3.16
Gazioura	παλαιὸν βασίλειον, νυν δ' ἔρημον'	Ancient royal resindence	Stabon, XII.3.15

In addition to their defensive duties, the fortresses appear to be administrative centers since the kingdom, which was mostly rural and had an economy based on agriculture, was ruled using them.

Very few of these fortresses (Caberia, Durulmuş, Kümbet, Terelek and Salarköy) were occupied during the Roman period. We also know that during the Pompey's reorganisation, most of themwere demolished completely to prevent their use. Then there was the *Pax Romana*, which may explain the reason for their use.

Some of the fortresses in this study were occupied for political and military purposes in the Byzantine period. The importance of these fortresses may have increased, especially because of the Turkmen raiders who entered Anatolia during the Battle of Manzikert.[131] In the Byzantine period, the fortresses were used intermittently between the first Arab

[131] Matthews suggested that the fortresses in Paphlagonia documented during their surveys were possibly used in the mid-Byzantine period (2004: 200-11).

invasion and the arrival of the Seljuks. While strategic and regional defense was the main purpose at the beginning, security against outside threats lost its importance when the Byzantine assumed an aggressive policy towards the Arabs after the second half of the ninth century. In this process, some were occupied by Anatolian elites, and they started to play a role in internal affairs and regional military policies. The suspension of security on the eastern borders by Byzantine and following threats towards Pontic lands from raiding nomads caused these fortresses to regain their security and refuge functions (Crow, 2009: 35). Some were used in the Seljuk period and were named Karahisars. The Seljuks readapted the Byzantine defense units that they took over in Anatolia in accordance with the unstable military and political conditions of the period. These units were given operational base functions, making them military-political strategic organization centers for the Seljuks (Özcan, 2008: 91). A *vakayiname* from the Seljuks recorded that a fortress is located on an outcrop, is naturally fortified, contains a cistern and cellars and is a unit that has military functions such as security and protection (Özcan, 2008: 92). The fact that the Karahisars regulated commercial activities on the road networks that they guarded shows that they had more than just military functions. They were used as refuges by insurgents and kings who revolted against the Seljuks as well as to imprison them, and even as hiding places for treasures by emirs (Özcan, 2008: 91). The best example of these fortresses is the Osmancık (Pimolisa) Fortress. The fortress appears as a Karahisar in this period. It was used as an assembly place for the army as well as to control the road to the east (Özcan, 2008: 92). Unfortunately, there are no Seljuk records about the fortresses that are studied here, but the Seljuk occupation of the Tokat, Çördük, İskilip, Zile, Niksar, Amaseia and Boyabat fortresses was determined using ceramics data.

5.3.Rock-cut Tunnels

The rock-cut tunnel constructions that are present in almost all the fortresses, which can be described essentially as singular monumental structures have garnered scholarly attention. de Jerphanion suggests that considering the strategic locations of fortresses in the topography, these tunnels could have served as hidden passages that were used as exits during sieges (de Jerphanion, 1928: 28). According to von der Osten, these tunnels were deep through the rock to reach safe and secure water supplies for the fortresses (von der Osten, 1929: 130-132; von Gall, 1967: 504-509). Strabo also supports this idea by giving an example from Amaseia (Strabo XII.3.39). He identified these tunnels with the term, *hydreia*. His description of the *hydreia* says that they extended to the rivers. Another of his accounts states that the tunnel of Sagylion was blocked by Pompey in order to deny access to a water source (Strabo, XII.3.38).

von Gall studied the tunnels in considerable detail. He also thinks that the tunnels function to provide access to water sources based on his observations on location at the fortresses and tunnels in Amaseia, Gökçeli, Sazak and Çördük (von Gall, 1967: 507). He seems to be correct. Cleaning work done in the tunnel of the Amaseia fortresses in 2010 demonstrated the existence of a large reservoir at the end of the tunnel, although it did not extend to the river (Doğanbaş, 2010: 67).[132] It was reported that the tunnel's angle of descent is 35 degrees. It is 250 meters deep and has a 360-step stairway that leads to a water tank at the end of the tunnel. Its function was apparently water storage. It was very generally dated to 301–47 BCE by the team (Doğanbaş, 2010: 69). In the cases of Gerdekkaya, Sazak, Tependeliği and Kevgir, the tunnels do extend to the rivers that flow by them (Appendix 1). The Cumont brothers described their visit to the tunnel of Amaseia:

> "Near the summit there opens the entrance of a tunnel, cut into the live rock, descending to the right to a vast cistern, which collects the water filtered through the limestone. This is one of two impregnable cisterns mentioned by the geographer, reached by narrow passages formed one at the end of the mountain - this is the one preserved - another near the river" (Cumont and Cumont, 1906: 160).

[132] It is unfortunate that there was no data recovered during the excavation to be used in order to date the tunnel. Pottery sherds from the Roman and Ottoman periods and a few pieces of pipes and Roman coinage were all that were found (Doğanbaş, 2010: 70).

Dating a rock-cut tunnel which is cut into bedrock is no easy task. The pottery and other objects found in it can only suggest when it went out of use, not when it was originally constructed. However, there is an approach to dating the structure. Perrot states that comparing the craftsmanship of the tunnel in Amaseia fortress with that of the royal tombs hosted by the fortress established a connection due to the similarity of cleanly finished barrel vault entrance of the tunnel to the tombs, which dates it to to the Hellenistic period (Perrot, 1872) (Figure 5.1).

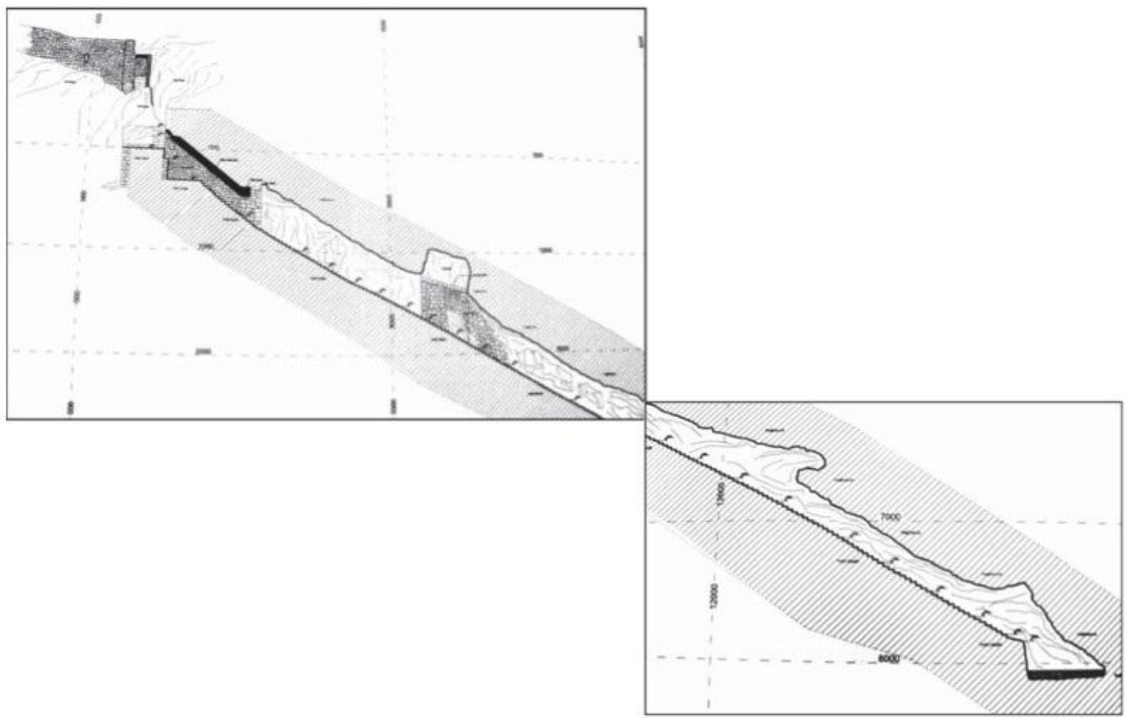

Figure 5.1Section plan for the Amaseia fortress' rock-cut tunnel (Doğanbaş, 2010: 71).

The earliest examples are found in eastern Anatolia and belonged to the Urartians, who are considered masters of stone masonry. The Urartians employed a sophisticated system of irrigation and were highly effective in utilizing underground water resources (Burney, 1957: 38). The Urartian landscape was densely fortified, and this points to the fort-settlement type (Burney, 1957: 40) Fortresses with rock-cut tunnels are quite common here (von Gall, 1967: 518), and this reflects the prevalence of the tradition of building this type of fortress in Anatolia. There are copious amounts of fortresses that have rock-cut tunnels in Erzurum, Erzincan, Elazığ, Iğdır and Van, which were areas occupied by the Urartians. Işık, Ceylan and their team from Atatürk University, Urartian experts who studied the area,[133] indicate in their survey reports that there are at least as many fortresses in this regionas there are in the Pontos.Hundreds of fortresses have been identified in surveys since 1998. There are 14 fortresses with rock-cut tunnels according to the reports that have been published to date.[134] The fortresses that were identified in this lengthy survey have been dated very generally to the Early Bronze Age, Iron Age or the Medieval period and very rarely to the Chalcolithic period in the light of survey materials and architectural ruins. This is very surprising since, it is almost impossible that these fortresses were not used, at least during the Hellenistic period, and we know that the Romans dominated the area in the first century CE. However, the abandonment of these fortresses might be related to the *Pax Romana* by the Parthians who lived in this area and were important allies of Mithradates VI (Olbrycht, 2011: 276). The Parthians were the most powerful kingdom in the East during the Mithradatic period, and Armenia

[133] Ceylan, A., "1998 Yılı Erzincan Yüzey Araştırması", 17. *Araştırma Sonuçları Toplantısı* II 2000, Ankara, 181-192; Ceylan, A., "1999 Yılı Erzincan ve Erzurum Yüzey Araştırması", 18. AST, 2001, Ankara, 71-82; Ceylan, A., "2001 Yılı Erzincan ve Erzurum İlleri Yüzey Araştırmaları", 19. AST-II, 2002, Ankara, 165-178; Ceylan, A., "2001 Yılı Erzincan, Erzurum ve Kars İlleri Yüzey Araştırmaları", 20. AST-II, 2003, Ankara, 311-324; Ceylan, A., "2002 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 21. AST-II, 2004, Ankara, 263-272; Ceylan, A., "2003 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 22. AST-II, 2005, Ankara, 189-200; Ceylan, A., "2005 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 24. AST-I, 2007, Ankara, 163-182; Ceylan, A., - Y. Topaloğlu, A. Bingöl, "2006 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 25. AST-III 2008, Ankara, 129-148; Ceylan, A., - Y. Topaloğlu, A. Bingöl, "2007 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 26. AST-II, 2009, Ankara, 133-150; Bingöl, A., - A. Ceylan – Y. Topaloğlu – Y. Günaşdı, "2008 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 27.AST-II, 2010, Ankara, 375-398; Topaloğlu Y., - Y. Günaşdı, A. Bingöl, A. Ceylan "2009 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 28.AST-II, 2011, Ankara, 1-21; Günaşdı, Y., - Y. Topaloğlu - A. Bingöl - A. Ceylan "2010 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 29. AST-III, 2012, Ankara, 49-70.; Özgül, O., - A. Ceylan - A. Bingöl - Y. Topaloğlu - Y. Günaşdı, - İ. Üngör "2012 Yılı Erzincan, Erzurum, Kars ve Iğdır İlleri Yüzey Araştırmaları", 30. AST-II, 2013, Ankara, 277-292.

[134] The fortresses with rock-cut tunnels are listed as follows: **Karakaya** (Erzincan) (Ceylan, 1999: 184), **Ozanlı** (Erzincan) (Ceylan, 1999: 185), **Pekeriç (Çadırkaya)** (Erzincan**)** (Ceylan, 1999: 186), **Pasinler (Erzurum)** (Ceylan, 2003: 314). **Harami (**Ceylan, 2003: 316), **Çağdariş (Erzurum)** (Işık, 1987: 514), **Şirinlikale (**Erzincan**)** (Işık, 1987: 508), **Kalecik** (Erzincan) (Ceylan, 2016: 453), **Hasanbey** (Üngör et al, 2014: 62), **Dellal Kaya** (Topaloğlu et al, 2011: 4),**Yiğitoğlu** (Erzurum) (Bingöl et al, 2010: 378), **Üçpınar Fortress** (Ceylan, 2007: 165), **Toprakkale** (Van) and **Bağın** (Burney, 1957: 39,52).

was under Parthian domination. Mithradates VI's close relations with the Arsacid king, Mithradates II, appears to have made the latter a source of troops during the First Mithradatic War (Olbrycht, 2011: 278). It is unfortunate that this period is not well documented in terms of its material culture. As mentioned in the introduction, the background of the surveyor may have biased the survey data.

The other example of the period in the Central Black sea is the Karalar Galatian settlement located near Ankara. The Galatian and Tolistobogian King Deiotaros gained control over the whole of Galatia in the mid-first century. He had a fortress residence in Karalar with an identical tunnel structure. It could be argued that the Galatians inherited the Anatolian type fortress structures because of this tunnel and its location on an outcrop (Darbyshire, 2000: 80).

The theory that argues to assign religious function to the rock-cut tunnels should also be mentioned. The monumental dimensions of some tunnels ruled out any thoughts of their purpose serving as water storage and led into the assumption that a religious objective must have been the motivation behind them. This consideration originated based on a cult inscription (nomos) *dexiosis stelae*, on the upper side of the tunnels located in Arsameia am Nymphaios in Commagene and Eski Kale in Nymphaios (Leonhard, 1915: 239). The inscription mentions *Hierothesion* dedicated by Antiochos to gods and paternal ancestors, assigning priests to this location to honor the name of his father's cult, his wishes for prospective festivals to be held here and works and services he conducted for Arsameia (Brijder, 2014: 248). Dörner also excavated the tunnel during the few years after he started excavating Arsameia in 1953. He tried to identify the function of the tunnel. The tunnel was excavated for three seasons, extending to 158 meters in depth where the work stopped without reaching the end due to lack of air circulation and the threat of carbon monoxide poisoning (Dörner and Goell, 1963: 139-45). Although this excavation did not provide any information about the function of the tunnel, Dörner argued that due to the location and positioning of the tunnel, which was at the central point of the *Hierothesion*, the construction must have had a religious motivation (Dörner and Goell, 1963: 142)[135]. The general consensus, however, is that the tunnels were built to provide secure access to water.

Examples from outside Anatolia support the theory of the water access function. Hydraulic engineers in the fortress of Gezer in Israel realized that they can utilize the water table as a source without having to leave the area encompassed by the walls of a fortress (Cole, 1980: 23). The construction date of this tunnel is not known. It is estimated to have been built and used between the Late Bronze Age (15th-14th centuries) and the ninth century BCE. The function of this tunnel was certainly securely reaching groundwater (Dever, 1969: 77-78).[136]

Building a rock-cut tunnel was a massive engineering project for providing fresh water to fortresses. There is a similar example at the Athenian Acropolis, a rock-cut tunnel situated on the eastern part of the city reaching to the water table inside the city walls. Broneer believes that the tunnel was built to provide sufficient water supply to the fortified city in times of siege (1939: 319). A Mycenaean tunnel built by Mycenaean engineers led from the Acropolis through the cleft in the rock to a copious underground water supply at a depth of roughly 40 meters below the Acropolis. Cuttings into the rock in this tunnel's walls were the proof of its wooden steps (Broneer, 1939: 326).

For fortresses located on an a rocky outcrop, reaching water sources is achieved by constructing tunnels. Tunnel construction in Greece is extensive. There are many tunnels connecting to water sources in Corinth, and they have been used as reservoirs collecting water from streams since the fifth century BCE (Crouch, 1993: 84, 140).[137] Crouch's studies of water management in ancient Greek cities dated the construction of the

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[135] Dörner believed that the tunnel was related to the cult of the god, Mithras, who was born from the rock according to mythology (1963: 143).

[136] For water tunnels in Israel, see: R. Amiran, 'Water Supply Tunnels,' *Eretz Israel* (1951) p. 35-38; Jonathan Kaplan, 'The Mesha Inscription and Iron Age II Water Systems,' J*NES* (2010) p. 23-29; Dan P. Cole, 'How Water Tunnels Worked,' *BAR* 6.2. (1980), pp. 8-29.

[137] Unlike those found in Anatolia, there are horizontal rock-cut water supply tunnels found in Greece. The most important example was constructed in Samos in the sixth century BCE by the engineer, Eupalinos (Crouch, 1993: 334).

tunnels to the eighth-sixth century BCE and described them as forming long distance water supply lines (1993: 338). The closest similarity to that of the examples in Anatolia is the tunnel structure in Mycenae. The 104 step rock-cut Perseia tunnel provided water to the fortress of Mycenae. It was built during the Archaic period and more extensively used and restored during the Hellenistic period. The entrance of the tunnel was constructed in the Cyclopean style and vaulted, unlike those in Anatolia where the rock is cut. The steps in the entrance were made with block stones, and the interior of the tunnel was made by cutting into the rock (Karo, 1934: 124-126) (Figure 5.2).

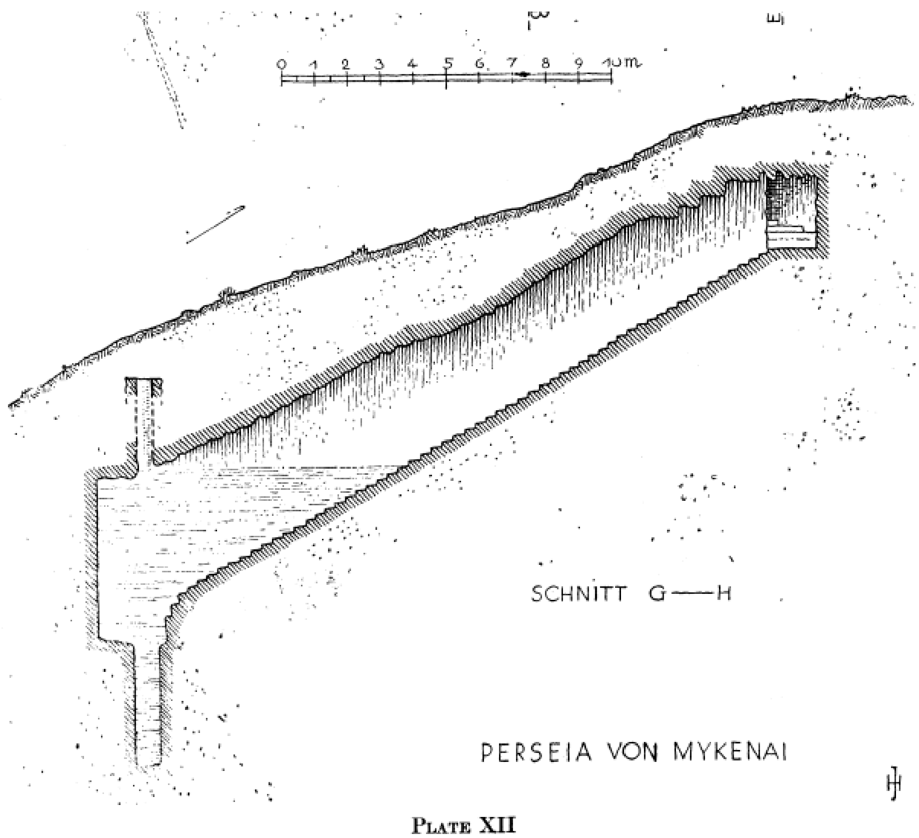

Figure 5.2 Section plan of the Perseia Tunnel (Karo, 1934: 126).

These tunnels played an important role in providing soldiers with safe and hidden access to water, especially during wartime (von Gall, 1967: 522). The tunnels also served to prevent excessive evaporation and provided clean and cool water. The same aspects were considered in different regions, for instance in Israel, when building underground canals.

Situating these fortresses required critical decision-making. Technically, the fortresses would not be effective if they were not located at a point where large amounts of water were not naturally available. Theoretically, topography was important in terms of deciding to deploy the fortress in the landscape. Determining the relationships of the locations of the fortresses dispersed throughout the Pontos with water sources, rivers and streams, will help to identify and clarify the function of the tunnels as providers of water. The analysis chapterexamines the distances of fortresses' to water sources to this end.[138]

5.4.The Fortress-Border Relationship

Territorial boundaries may have had a political function by implying ownership such as presence of a king or government. Boundaries are defended against aggression and control border traffic. Mountains and rivers have often served as natural boundaries in history. Hirst claims that the idea of borders basically denotes zones of control. Roman *limes* (frontiers) can be a good example of this. Together with wars, creating borders was the way states and kingdoms legitimized their changing territories. In today's sense, borders exactly define the territories of nation states. The modern concept of frontier, which is a clearly demarcated line marking the external boundaries of internally coherent and adjacent state territories, did not really exist before the 16th century (Hirst, 2005: 36). In ancient times, fortresses set the boundary between a community and the next neighbor, a potential enemy (Ma, 2000: 341). Fortresses were located near strategic routes and roads, on the top of hills and mountains, near natural frontiers or near agricultural settlements. They were usually manned by young men, sometimes by mercenaries, but also by soldiers from their environs. The forts imposed unity in the territory of a city, linking its most remote sites with the center (Ma, 2000: 342). At the

[138] See chapter 7's distance to rivers section.

same time, network of forts articulated the frontiers that separated cities more visibly than natural landmarkssuch as rocks, rivers, springs, caves, mountain peaks and forests. Forts thus became the visible proof of the integrity, independence and identity of communities (Chaniotis, 2005: 28).

In antiquity, political borders tended to follow topographic borders such as mountains, rivers and landmarks. This means that sovereignty limited itself as predetermined by nature. Within natural borders, the process of creating territories requires some mode of territoriality. Fortresses placed at strategic locations on the borders in a defensive network intended to guard the integrity of the chora were common in antiquity (Koparal, 2009). Strabo mentions topographical limits when writing about borders of the Pontos. For instance, he says that the southern border of the kingdom consists of the Laviansene and Chammanene regions and a mountain that lies parallel to the Tauros (Strabo, XII, 2.10). Chammanene was a Cappadocian strategiai under the Dasmenda Fortress' control. Laviansene is also a strategiai (Strabo, XII.2.10). After these regions, you enter Pontos and here there is the Camisene region under the Camisa Fortress' control. The Mithradatic kingdom had its fortresses in the south, exactly where Strabo indicates (Figure 5.3).

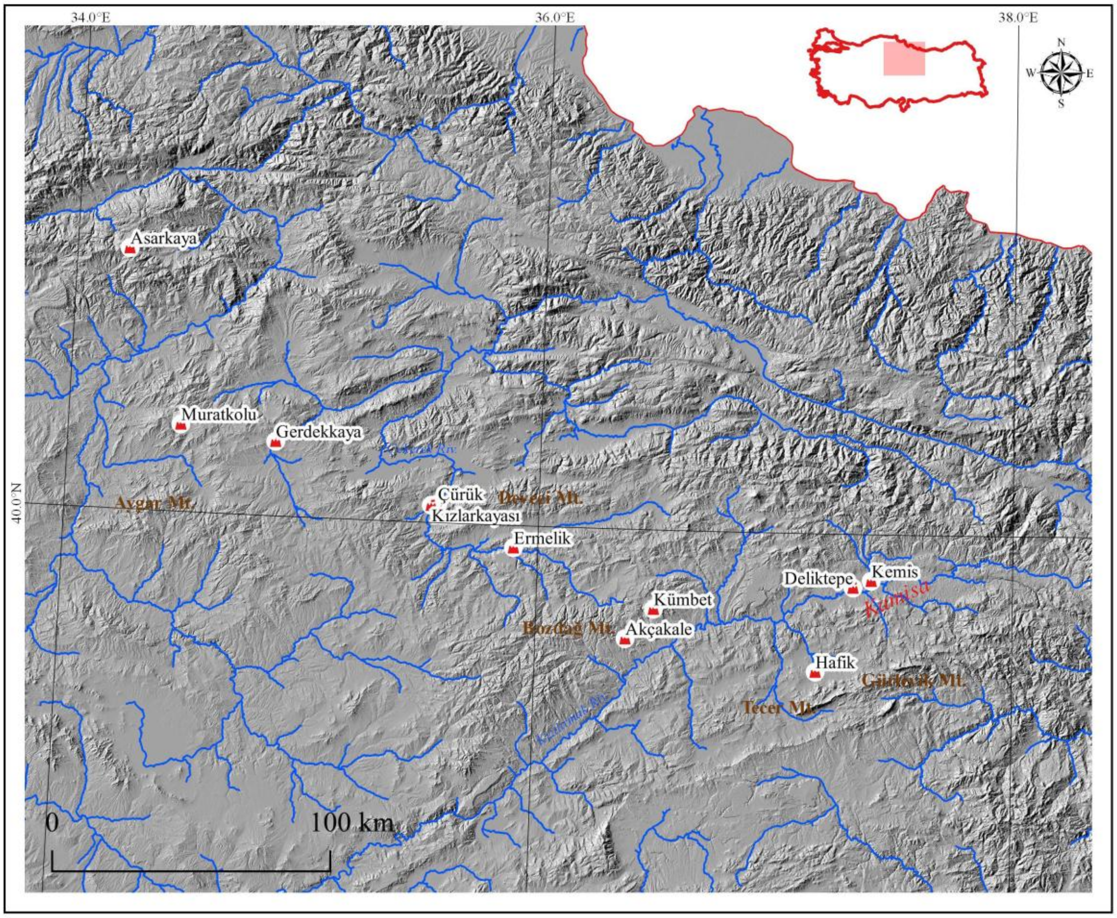

Figure 5.3 Fortresses Distribution in the Southern and Western Side of the Pontic Kingdom

The locations of the Deliktepe, Hafik, Kemis, Akçakale and Kümbet fortresses form a line that confirms Strabo’s account. These locations make it possible to say that there is a frontier that follows the Halys (Kızılırmak) in the south and the Scylax (Çekerek) in the west. Olshausen and Biller revealed a more extensive border with their studies of the historical geography of the Pontos (1984).

Ancient sources inform us that Mithradates VI established a fortress named Mithridation to control Galatia after his invasion (Strabo, XII.5.1; Magie, 1950: 198). Strobel states that the southern end of the Mithradatic kingdom reached the area where Gerdekkaya is found (Strobel, 1997:146-48). The fortresses found along this border are Gerdekkaya, Muratkolu and Asarkaya. This border defined the zone between the Galatian tribe of the Trocmi and Mithradates. Strobel associated Gerdekkaya with Mithradation, an important fort-settlement that was established by Mithridates VI (Strobel, 1997: 142-48; Strabo XV.5.2). The fortresses in this direction follow the Scylax. Therefore, these fortresses indicate that the Scylax River was the western border of the kingdom.

5.5. Locating Fortresses in the Landscape

As the only prevailing power in the Central Black Sea region, the Mithradatic kingdom was engaged in conflict over dominance with the Romans during most of its history. The Mithradatic kingdom's struggle against the Romans involved expansion at times, and at other times it took the form of a conservative political struggle. There are multiple aspects of the conflict between the Mithradatic kingdom and Romans. Among the various forms of conflicts such as political, military and so on, another form of conflict could be described using the concept of contested landscapes.

According to Bender, landscapes are political, dynamic and contested (Bender, 1993: 276). On the other hand, Tilley draws attention to the relationship between space and power (Tilley, 1993: 81). Bender proposed the term, contested, for landscapes where power relations dominate (Bender, 1993: 278). Accordingly, landscapes are contested when there is a conflict between groups of people because of their different concepts of, and ways of engaging with, places and landscapes (Bender, 1999: 308).

Establishing defense mechanisms either against other people or nature have long figured prominently in the shaping of landscapes. Remains of walls, ramparts and fortresses, are designed out of a need to protect communities from their enemies. They are also designed to defend the interests of imperial powers, or to help to establish a presence and create an image of power that can impress populations or rivals (Gold and Revill, 1999: 231). In fact, the idea behind the construction of these fortresses may have been to claim ownership of the landscape. Although it cannot be known whether these fortresses were used to delineate borders, we can be safe in assuming that they stood as symbols representing the presence of the Mithradatic kingdom. Strabo mentions that Armenia extended its borders all the way to Trapezus and Pharnaceia, which were Pontic territories, and that Mithradates VI was not indifferent to this. He built 75 fortresses in this region that borders Armenia Major to show his domination of the area, and he kept his treasures in them. Strabo provides the names of some of these fortresses, such as Hydara, Basgoedariza and Sinoria (Strabo, XII.3.28). The locations of these fortresses were Mithradates' attempts to clearly symbolize his presence and represent his power in invaded territories.

Furthermore, the rock-cut tombs encountered in most of these fortresses can be read as manifestations of power. These tombs, which were carved on a visible surface of the fortress to be on display, could be interpreted as functioning as a symbolic link of the kingdom with the past and as an evidence of its presence and continuity. This in turn legitimizes the kingdom's claims on the landscape. Serving as such, fortresses and rock-cut tombs appear as symbolic manifestations throughout this geographical area of conflicts and power struggles.[139]

During the Hellenistic period, this region played an important role in the complex socio-political changes that occurred. Right after Rome's first possession of an Anatolian precinct by the bequest of the king of Pergamon in 133 BCE, Roman dominance started to exert itself from west to east. An intensifying and expanding opposition against Roman dominance took place spanning over 26 years. During this conflict, constant changes in the borders of the Kingdom of the Pontos took place. The conflict ended with the death of Mithradates VI in 63 BCE, after the Mithradatic kings' reign of some 250 years in the region. Afterwards, the Romanization of Anatolia with the establishment of the Pax Romana began in both urban and rural landscapes.

[139] Fortresses with rock-cut tombs: Çördük, Tokat, Zela, Chainon Chorion, Amaseia, Kaleköy, Pimolisa, Gerdekkaya, Muratkolu, Bükse, Kızlar Kayası, Akçakale, Cıngırtkaya, Chabackta, Tependeliği, Terelek, Salar, Kapıkaya, Yukarı Arım, İskilip and Gavurkayası.

Fortresses served not only as a reinforcement of imperial control over the region, but also affected imperial as well as rival claims over contested territories. Placing fortresses in the landscape may reflect an expansion of political spheres and directly controlled territories. In fact, it may have played an active role in that process. Changes in political stability and control over the landscape may have affected the situation of fortresses. The purposeful destruction of fortresses built by the Mithradatids after a change in governance was a common practice in the historical context,[140] for instance, Pompey's demolition of most of these fortresses. However, fortresses that were difficult to access may have been an ignored element of the political landscape.

5.6. Power and Surveillance: Panoptic Approach *(the concept of control)*

Fortification can be considered a technique of power, not just military power, but also surveillance, intelligence and control (Hirst, 2005: 180). The panoptic approach refers to a state in which a small number of observers control a large number of people. This approach is often revealed through the combination of explicit monitoring of landscape and closed-circuit television (CCTV) systems in modern times (Oc & Tiesdell, 1999: 272). The idea originates in Foucault's discussion of Bentham's panopticon, “an all-seeing architectural form,” designed to keep prisoners under constant surveillance (Foucault, 1977: 195). According to Bentham, the panopticon was the idea of a new principle of construction applicable to any sort of establishment in which persons of any description are to be kept under a watchful eye (Bentham, 1995: 29). Bentham's model emphasizes how landscape structure, in terms of buildings, impose surveillance and control from a particular vantage point. The panopticon, which was proposed as a template for modern social order, situated visible prison cells around a central tower that is impervious to the prisoners' view, prisoners never know for certain if they are under surveillance, and thus suspect that alway are. Foucault described panopticism in terms of surveillance by suggesting that the modern principles of social organization are based on visible, but unverifiable power (Foucault, 1977: 198).

[140] Strabo, XII.3. 38.

As an expression of power, fortresses configure the space accordingly. The reason for establishing a method of surveillance is to provide a line of sight and monitor the landscape. The immense value of surveillance was clearly recognized during the visibility studies performed for this thesis. Each fortress is endowed with properties that function to maintain surveillance. Fortification was a widely employed strategy that offered many clear military advantages, both physically and psychologically. In addition to physically obstructing the enemy and providing cover its own soldiers, a fortress directs psychological attacks on the enemy. Fortresses provide and contribute to the sense of power and control. Giddens defines surveillance as the monitoring of the activities of individuals by authorities (2002: 14). Whether it is the inhabitants or people passing through the area, surveillance as well as the likelihood of it has an effect. Being subjected to surveillance by a party in position of control alters the behavior and psychology of the subject. Thus, the existence of a fortress shapes the individual mind. Power can be defined as a type of domination over human activities (Giddens, 2002: 12). Fortresses could simultaneously make populations feel safe and feel the presence of a power that controls them. They were instruments of symbolic power.

The visibility issue suggests that the relationship between the panoptic model and power relations led the Mithradatic rulers to manipulate the landscape to exert control over it. This is a simplified representation of the role visibility played in surveilling and controlling agricultural lands. This research investigated the fortresses' locations and then clarified whether their positions were strategically suitable for surveillance. These analyses revealed that the locations of the fortresses were directly related to the agricultural lands of the kingdom. They are distributed in a way that encircles important plains, Phanaroia and Dazimonitis. These plains were the agricultural lands that provided the kingdom's income. Recent studies in mainland Greece suggest that sporadic defense units in rural areas are built for controlling and protecting the agricultural and industrial labor force (village communities) (Morris and Papadopoulos, 2005: 160). In fact, agricultural territory was the cities' and kingdoms' first priority because they supplied food (Ma, 2000: 355). Moreover, the frequent emphasis on the

Achaemenid origins of the fortresses in the Mithradatic kingdom also reminds us of the workings of the satrapy system (McGing, 2014: 26). Accordingly, the system that regulates rural areas aims to increase agricultural productivity and generate more income (Sarıkaya, 2016: 78). The relationship between the fortresses and agricultural lands in the Mithradatic landscape suggests that this system was preserved. As elaborated in Chapter 3, the lower administrative units of the satrapy system, the *hyparchs*, were also *strategiai* in many contexts, and it is commonly thought that the Cappadocian administrative units, the *strategiai*, also apply to the Pontos due to the ancestral relationships between the two regions (Saprykin, 1989: 133).

CHAPTER 6

LIVING SCATTERED AND GUARDING WITH FORTRESSES: SETTLEMENT DISTRIBUTION IN PONTOS

6.1.Background

Little is known about how the Mithradatic kingdom was organized. The great majority of the population probably lived in villages in the fertile plains of the Iris and Halys rivers. In the heartland of the Pontic region, plains were where the kingdom earned its agricultural revenue. One of these plains, which was mentioned by Strabo was called theplain of a thousand villages, Chiliocomon (Suluova) (Strabo, XII.3.39). The inland settlements there which had a more rural character (rather than an urban one) and were located around temples (Glew, 2000: 156; Shipley, 2000: 387). As the name of the plain suggests, in the land blessed by the Iris, the many villages offer a hint about the settlement structure of the region.[141]

As Glew notes, the Pontic kingdom was a landscape populated with villages (2000: 161). Urbanization occurred in the larger rural settlements of Pontos (Marek, 2003: 78). These settlements, which can be considered the cities of the kingdom according to Strabo, were either cult centers or fortresses (XII.3.39, XI.8.4, XII.3.36). The kingdom possessed vast agricultural lands and established a pastoral economy on them. These lands were ruled by officials from the royal family or aristocrats close to them (Strabo, XII.3.33).[142]

In the period of Hellenistic kingdoms in Anatolia, with regard to inter-state and inter-

[141] Appian wrote that Murena invaded 400 villages that belonged to Mithradates from Zelitis (App. Mithr. 65).

[142] Marek suggests that on the eve of Roman rule in the Pontos, rural communities that did not have urban traditions formed the backbone of the new state and finds this similar to the administrative structure of Seleucids (Marek, 2003: 40).

city relations, autonomy shifted to the kings and the commanders of the cities (Mitchell, 1993: 81). The inner Black Sea should not be considered a land with the Greek-type poleis, whether in the institutional sense or from the point of view of their urban features. The terms used to define theMithradatid settlements mentioned in the ancient sources indicate that these settlements wereeither fortresses or temples. Strabo uses these terms for the settlements: *πόλεως ερυμνοτατης* (XII.3.15); for Chabakta: *χωριά ἔρυμνα* (XII.3.16); for Eupatoria: *πολις* (XII.3.30); for Kainon Chorion: *ερυμνη* (XII.3.31); for Ameria: *κωμοπολιν, χωρανιεραν* (XII.3.31); for Zela: *ιερονδιωκουν* (XII.3.37); for Camisa: *ἔρυμα αρχαιον* (XII.3.37); for Sagylion: *ἔρυμα* (XII.3.38); for Icizari: *ἔρυμα* (XII.3.38); for Pimolisa: *φρούριον βασιλικου* (XII.3.40); for Gazioura: *παλαιὸν βασίλειον, νῦν δ' ἔρημον*' (XII.3.15). These terms are all associated with fortresses.[143] Therefore, the settlements of the Mithradatic kingdom are quite unlike the urban settlements that we know from Western Anatolia. The Pontos became a political unity during the reign of the Mithradatids. This unity had peculiar elements in terms of its social, culturaland especially administrative structures. The rural settlements were not be separate from agricultural land. The Mithradatic land on which the economy and social structure rested wastaxed in various ways. Landwas divided into categories: royal land (Γὴ βασιλική) owned by the dynast, temple land (Γὴ ἱερά), public land owned by cities (Γὴ πολιτική) and private land (associated with public land) belonging to individuals and villages.

6.1.1. Ge Politike (Γὴ πολιτική)

The city territorium consisted of numerous village communities. Private units were considered city territory, and rulers could collected taxes from them. This type of situation where private land was actually under community ownership was common in the Persian administrative system. Many properties during the periods of Persian dominance in Lydia belonged to the royal and temple holdings (Rostovtzeff, 1926: 816).

[143] Eupatoria was a city designed by Mithradates as Greek style poleis: however it was unfinished, therefore it was considered as a polis. Zela was a sacred precinct.

The Pontos also had rural communities. These communities were divided into various districts (Sherwin-White, 1994: 267). Strabo's account about Zela reveals that these districts were defined as *eparchia* (Strabo, XII.3.37). Saprykin notes that sacred territories, which included Comana and Ameria, were also *eparchies* (Saprykin, 1989: 134; McGing, 2014: 34). During reorganization, Pompey gathered the *eparchiai* together and gave them to the temple state of Zela for protection and use. Likewise, the *eparchiai* around the Camisa fortress and the Culupene region were attached to Megalopolis.[144]

Marek assessed the existence of the rural communities of Pontos by studying Seleucus' administrative structure (Marek 2003, 40). In the Seleucid's administrative system, it is possible to see traces of the Persian satrapy system, and the*eparchia* was central to it. The administration divided the region into units according to the Persian satrapy system. Each of these units were under the control of a *strategos* appointed by the Seleucid king, which was also in accord with Persian practice (Kuhrt and Sherwin-White, 1993: 42-44). Billow underlines the term, *chiliarchoi*, which bore both military and financial duties. This officer was similar to *strategoi*, but on a smaller scale. The *chiliarchoi* act under the auspices of higher ranked individuals in the administrative district; either *strategoi* or *satraps*. Although this title is only observable in satrapies under the Antigonos' rule, it was probably replaced with the terms, *hyparchies* and *eparchies*, in Seleucid sources (Billows, 1997: 283-4). Under the Seleucids the *hyparch* or *eparch* was a subordinate of a satrap or strategos, and accordingly, this term referred to the district officers. It has been suggested that the administrative order of the Mithradatic kingdom may also be divided into administrative units that were given the name of *strategia* and may have been ruled by *strategoi* (Saprykin, 1989: 132).

[144]Pompey's reorganization was based on the idea of creating cities with large territories by merging these eparchiai.

Strabo[145]makes an analogy between Cappadocia and Pontos and says that Cappadocia was divided into ten *strategiai* (prefecture) (Strabo XII.1.2). On the administrative side, Cappadocia stood out as a reference for the situation in Pontos. In the Hellenistic period, in Cappadocia, traces of the village type organization and feudal society inherited from earlier periods had continued. Ruling class and aristocrats had fortresses and the majority of the inhabitants were living in village settlements around them (Strabo, XII.2.6).

In the previous section, we examined strategoi, known from the reign of Mithradates VI. These were the commanders who served in the army during the Roman wars. Therefore, Amaseia emerges as the administrator of the fortresses as seen in Gazioura. In this sense, Saprykin's suggestion seems to be acceptable. Højte considers that the title contains both military and administrative duties and under their purview, territories were kept under control (Højte, 2009: 102).

Furthermore, in Hellenistic period, these villages were united and formed an alliance. The best example of this comes from epigraphic evidence recorded in the temenos of the Zeus Stratios. Pimolisene, Dakopene, Babanomitis and other village communities came together for the ceremonies held there in the name of Zeus Stratios (French, 1996: 81).

6.1.2. Ge Basilike (Γὴ βασιλική)

This term describes land owned by kings and dynasts. Anatolia was ruled by the Achaemenids just before Hellenistic dominance. It was a tradition that the villages were owned by Achaemenids and the large estates, including villages, were assigned to Achaemenid aristocrats (Weiskopf, 1982: 50). This practice also continued the Seleucid period (Westermann, 1921: 13). The Mithradatic kingdom ruled its territories in line

145 In the Achaemenid period, Cappadocia was divided into two satrapies with the same cultural background. These were Pontos and Cappadocia (Strabo XII.1.4). Both Pontos and Cappadocia had a Comana with same characteristics (Strabo, XII.2.3, XII.3.37). According to an inscription recorded by Waddington in Cappadocian Comana, a priest from Comana was also a strategos (Waddington, 1883:127).

with its Achaemenid origins. Saprykin points out that all the lands of the dynasty of Mithradates belonged to the kingdom until Roman domination. In addition, the fortresses of Gazioura, Pimolisa and Taulara were Γὴ βασιλική (Saprykin, 2001: 95).

6.1.3. Ge Hiera (Γὴ ἱερά)

This term refers to sacred territory owned by a temple or a sanctuary. The best examples come from the heartland of the Pontos. These include the temple state in Cabeira, which owned sacred slaves ,and komopolis Ameria, the temple of Ma at Comana, which possessed six thousand sacred slaves and vast agricultural lands, the temple of Anaitis-Omanus and Anadatus at Zela, whichhad rich territories and was ruled as a sacred precinct. These centers had their own administrative units, infrastructure and labor force. In addition, there were lands owned by the temple of Zeus at Aizanoi, as granted by Hellenistic kings (MAMA IX, 36). These lands under the control of temples were the lands given by the kingdom for the utilization of temples. The priests of these temples were appointed by the king and were subordinate to him (Strabo, XII.3.37). It is clear that the temple states of the kingdom enjoyed autonomy provided by the kings. The fact that the priests who were appointed to these temples were only second to the king indicates privilege.

The only ancient source of information about the urbanization of the region of the Central Black Sea is Strabo. Strabo carefully scrutinizes the settlements and evaluates the important centers separately. The centers were autonomous, which made them temple states. He doesnot brush over these centers as simply cities and describes the nature of these settlements (Strabo, XII.3.36).

These temples included large territories with village communities and their inhabitants presumably devoted themselves to the deity of the temple. These territories not only provided temples with profit, but also gave an identity to the community living on them. In other words, the inhabitants of these sacred communities self-identified as part of the cult of the deity and their social and economic ties were linked with the so-called priestly economy (Debord, 1982: 91). Temples were important economic units. A large number of territories were cultivated and made valuable by the communities, making cult centers the richest parts of the kingdom. The sacred financiers regulated land and contributed great wealth to the kingdom and the communities around temples. Thus, as Virgilio, the temples strengthened the king's dominance and encouraged the loyalty of the rural population (Virgilio, 1981: 203).

Cult centers were also attractive market places, and the aim of festivities in the name of the deity was trade. Not only the communities around the cult center, but also merchants and soldiers attended the festival and spent all their money there (Strabo, XII.3.36). These cult centers made it possible to have long-lasting economies exist in the Pontic landscape—a region that lacked urban structures.

Such temple states were more attractive for the local population than the Greek cities on the coast. One of the important reasons for this attraction was the promotion of an Anatolian-Persian mixed polytheism as a government policy. These kinds of centers located in the hinterland of Pontic territory promoted an alternative civic life and organization in terms of culture and policy (Mitchell, 1993: 85). The Mithradatic kingdom reveals an original administrative structure and organization, which is quite complex and unique in antiquity, through its temple states, rural settlements, fortresses, slave and rural communities.

The number of research and surveysthat were initiated in the first half of 20th century tounderstand the distribution of settlements in the region is not sufficient. In order to determine this distribution, survey reports and studies describing Pontic cities were brought together and Hellenistic settlements were analyzed.

6.2. The Settlement Distribution of the Pontic Kingdom

The first study of the settlement distribution of the Pontic kingdom derived from Wilson's visits to the settlements that are mentioned in ancient sources and the records of his observations in his dissertation (Wilson, 1960). Later, Olshausen and Biller (1984) developed Wilson's work in a historical and geographical study. They revisited the settlements that Wilson had visited, and their map also included other small settlements and archaeological remains in the region. The most comprehensive settlement distribution study to date was conducted in 2001 by my advisor, as a part of her dissertation. Erciyas presented every settlement that has been published in excavation and survey reports for the Pontic region and categorized them by period from Chalcolithic to Byzantine. Her research also determined the continuity of the settlements through successive periods and comparative quantitative data between periods. Erciyas examined survey reports in detail and revealed the way data was presented in these reports and identified issues such as methodological problems (Erciyas, 2006: 43-70).

The Classical/Hellenistic period settlement distribution map of the Pontos in Erciyas' dissertation was completed in 2001 based on the reports published to that date on110 Hellenistic settlements (Erciyas, 2001: 275, fig.18). For this study, a new site distribution map was prepared in order to further Erciyas' work and to reveal the correlation between fortresses and Hellenistic period settlements, by analyzing all the surveys conducted in the region since 2001. This chapter will present the settlements by evaluating them in the context of their surrounding landscapes. In order to make the relationship between fortresses and settlements more meaningful in this account, I chose to categorize them according to the valley systems that are formed by the rivers of the region. The Hellenistic period settlements detected in these valleys shall be considered in terms of site continuity and site selection.

6.2.1. The Lycus Valley System

The Lycus (Kelkit) Valley is the northernmost part and the longest valley of the Yeşilırmak (Iris) Basin, which lies on the boundary of the Tokat and Sivas provinces. The valley that the Lycus flows through stretches from east to west starting from the Giresun Mountains. The Canik Mountains (1400-1500 meters) known as Paryadres in antiquity constitute the northern slopes of the valley. The valley ends where the Yeşilırmak intersects with the Kelkit Riverin the westwhere the Boğazkesen Fortress is located. Situated in the east of the kingdom, the Lycus Valley is the widest at the confluence of Iris and Lycus at approximately 16 kilometers wid and narrowest near Koyulhisar in the east at 2 kilometers wide. The western side of the valley hosts the Erbaa plain, known as Phanaroia in antiquity. Phanaroia is surrounded by Lithros Mountain to the west, Amazonius Mountain to the north and Ophlimos Mountain to the south (Talbert, 2000: 87).

Systematic field studies have not been conducted in the valley. The first scientific report was presented by de Jerphanion. He not only recorded archaeological remains in the valley, but also provided valuable information regarding the road network by creating a topographical map (de Jerphanion, 1928). Durbin published the pottery sherds that were collected by Burney in the area (Durbin, 1971). Özsait shed light on the settlement distribution drawing on his province-centered extensive surveys in Tokat-Erbaa and Ordu (Özsait, 1989, 1993, 1994, 1996). Lastly, Dönmez identified various settlements ranging from the Early Bronze Age to the Roman period in the west of the valley (Dönmez, 1999). Notes based on observations by travelers and scientists visiting the valley also provide information about settlements.[146]

[146] Hamilton, 1842: 346; Cumont, 1906: 270; Anderson, 1903: 55-59, 73-78; Wilson, 1960: 239; Bryer and Winfield, 1985: 107-110. Dönmez evaluated Early Bronze Age, second millennium and Late Bronze Age settlements in the region thoroughly and determined their change and continuity.

Here is a table of the settlements in the Kelkit Valley where Hellenistic period occupation was detected. It sheds light on the continuity of settlement in the valley and site selection.

Table 6.1 Settlements in the Lycus Valley

Sett. Id	Name	Sett. Type	Periods	Surveyor
62	Köyiçi	Mound	EBA, Hell, Roman	Özsait, 1999: 93
170	Kaleköy	Hill-top	Hell, Medieval	Özsait, 1995: 460
208	Umutlu höyük	Mound	EBA, Hell	Dönmez, 2000: 236
209	Kalekalehöyük	Mound	Hell, Roman, Byz.	Dönmez, 2000: 237
210	Kabayar höyük (Sonusa)[147]	Mound	EBA, IA, Hell	Anderson, 1903: 78; Özsait, 1996: 274; Dönmez, 2005: 106
211	İkiztepe I	Slope	EBA, LBA, Hell, Roman, Byz.	Dönmez, 2000: 236
231	Küçükgüzel	Hill-top	EBA, IA, Hell, Roman, Medieval	Engin, 2010: 133
245	Solak Höyük	Mound	IA, Hell, Roman, Medieval	Engin, 2009: 77
165	Uğrunca	Slope	Hell, Roman, Medieval	Engin, 2011: 82
290	Eupatoria	Slope	Hell	Anderson, 1903: 75, Olshausen & Biller, 1985: 37ff;
61	Tanoba	Mound	BA, II. Mill, IA, Hell, Roman	Tokat Museum Inv., French, 2012: 40, Durbin, 1971: 119.
286	Huntepe[148]	Mound	II. Mill, Hell, Roman	Durbin, 1971: 118
287	Ladik	Slope	Hell, Roman	Tokat Museum Inv.
56	Tilkitepe	Mound	EBA, Hell, Roman	Özsait, 1998: 92
319	Dönekse	Hill-top	II. Mill., IA, Hell, Roman, Byzantine/Seljuk	Durbin, 1971: 118; Özsait et al., 1993: 160.
357	Yukarıbaraklı	Slope	Hell	Dönmez, 1999: 521
315	Kalehizarönü	Hill-top	MBA, LBA, IA, Hell, Roman	Dönmez, 2000: 237

[147] Here Anderson recorded some spolia, which he believes to belong to Magnopolis. He also recorded one milestone here (Anderson, 1903: 78). The mound is 100x40 meters in size. It has been destroyed severely by Yeşilırmak passing through the south of the mound.

[148] The settlement located at the southeast of Talazan Bridge is in fact Untepe that Durbin handled (Durbin, 1971: 118).

The Phanaroia plain dominating the Kelkit Valley is surrounded by ridges. Fortresses were located on the ridges that lie on its northern side. When we look at the distribution of settlements throughout the valley, we see that they were located on terraces on highlandsat the narrowest point of the valley. Agricultural lands were not used for settlement purposes. However, all the settlements have a hydro-geographical location, which emphasizes the role and importance of the Phanaroia plain as a hinterland agricultural producer. The Phanoroia plain is in the widest part of the Kelkit Valley.Most of the settlementsaremound settlementsin the west of Kelkit Valley at the intersection of the Iris and the Lycus. They were inhabited since the Early Bronze Age and continued to be inhabited in the Hellenistic period (Table 6.1). The settlements founded in Hellenistic period were mostly situated on slopes or hill-top morphologies. Mound settlements occupied in the Iron Age or earlier near the valley’s main stream (#61, #208, #209, #210, #245, #286) were inhabited in the Hellenistic period due to their strategic locations. In the east where the valley narrows, the settlements were situated on slope and hill-top morphologies.

Topographically, the west side of the valley is more suitable for settlement. Since the east side narrows significantly, the settlementsdetected are on hill-tops. Fortresses throughout the valley were frequently placed at the edges of Phanaroia plain, suggesting a concern about the surveillance of agricultural land, settlements and traffic in the valley.

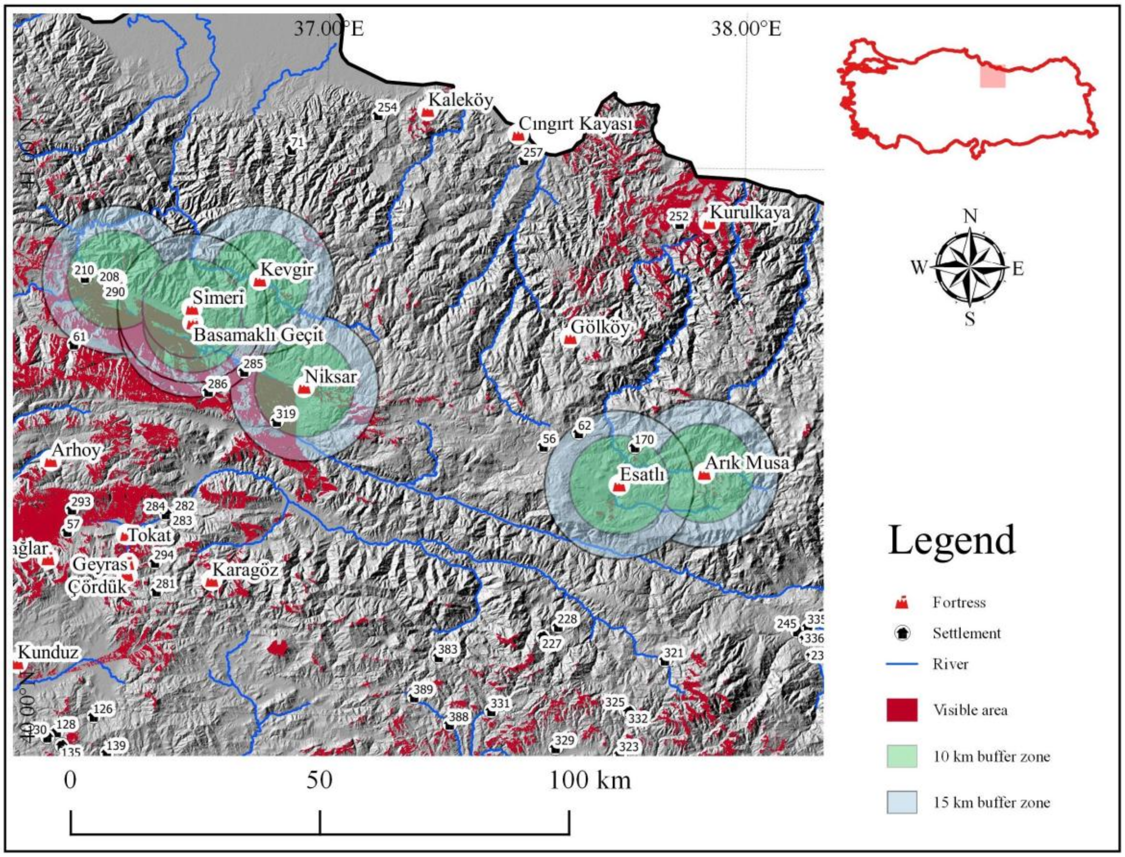

Figure 6.1 The Lycus Valley; Settlement-Fortress Relationships

Eupatoria

Together with Mount Ophlimos, Mount Lithros bounds Phanaroia (Taş Ova) to the west. These mountains contain a wide and fertile valley with the Paryadres Mountains running to the east of the plain. The Lycus running from Armenia and the Iris passing near Amaseia intersect the plain in the Kelkit Valley. Mithradates Eupator founded a city in his own honor, Eupatoria, at the intersection of these two rivers.

Anderson states that Eupatoria is located on a rocky outcrop on the west bank of the Iris (1903: 75). It was situated just south of the confluence of the rivers, Lycus and Iris, in a highly strategic point at the crossing of the road going east to west through the Pontos and the route going to the coast through the narrow valley of the Iris River. Olshausen and Biller states that due to its location, Eupatoria commands three directionsof flow to and from the southwest, north and east, and thus controls the river transportation (1984: 37). The Satala Road passed through Neoclaudiopolis, Laodiceia and Eupatoria as well (Bryer and Winfield, 1985: 12). The piers of the bridge on this road still stand.[149] During his visit, Anderson did not record any significant information about Eupatoria. Anderson also observed pottery sherds from late antiquity on this hill (1903: 77). However, Bryer and Winfield note that the city did not have any significance in the Byzantine period (1985: 13, 40). In their observations, Olshausen and Biller reported columns used as tombstones in the village cemetery onekilometer northwest of Kızılçubuk village, which is on the left bank of the Lycus and various building blocks (1984: 39). The remains of the city are clearly visible in the landscape, but they have yet to beinvestigated by archaeological researchers (Figure 6.2). Now, let us see what ancient sources say about Eupatoria since archaeological data is lacking.

[149] The bridge was in very good shape during Anderson's visit. Anderson stated that piers of the bridge were strengthened with buttresses. In late antiquity, bridges were arched tile constructions (Anderson, 1903: 77).

Figure 6.2 Sattelite image shows the imprints of the structures

Although founded in a strategic point suitable for development, the city of Eupatoria was not a significant city in the history of the kingdom. It was probably created by synoecism (Olshausen and Biller, 1984: 27). Mithradates VI tried to stimulate urban life in the kingdom as an indication of royal intervention (Ballesteros-Pastor, 2005).[150]

Mitchell states that no city other than Pharnaceia was built in the region by the Mithradatid dynasty, whose only cities were Amaseia and half-finished Eupatoria (Mitchell, 2002: 58). Strabo states that the construction of Eupatoria was also left unfinished (Strabo, XII.3.30). The city was mentioned in his account of the Third Mithradatic War. Eupatoria opened its doors to Roman soldiers during the progress of Romans to Caberia under Lucullus' command (App. Mithr. 79). We learn from Appian that paraphylax Phoinix from the signal station near the city who also was a relative of

[150] Unpublished article: http://www.pontos.dk/publications/papers-presented-orally/oral-files/Bal_pontic.pdf.

the king, joined Lucullus' army after transmitting the news that Lucullus was approaching Mithradates in Caberia. This, we may assume that there may be relationship between Eupatoria and Cabeira in terms of visibility.[151]

After the defeat of Mithradates, under the reorganization of Pompey, Eupatoria was turned into a polis and renamed Magnopolis. Pompey also extended its territory to western Phanoroia (Højte, 2010: 98; Magie, 1950: 370).

There is a contradiction in ancient sources regarding Eupatoria. Eupatoria is said by Appian to be close to Amisus (App. Mithr. 78). Memnon described Eupatoria as having been captured and destroyed just before Amisus was invaded by Lucullus (Memnon XXX, 3). Memnon is confusing here because, while the suburb, Eupatoria near Amisus, was destroyed, Eupatoria in Boğazkesen was only besieged.[152]

Cabeira and Ameria

This valley was home to important centers of the kingdom. Ameria, which cannot be located today even though it was said by Strabo to be located on the border of Cabeira, was a temple state aboutwhich we have limited information. We do not know if it had similar characteristics to the other temple states in the kingdom. Home to the temple of Men Pharnakou,[153] Ameria was associated with Ardıçlı village by the Cumonts (Cumont and Cumont, 1906: 272). Phonetically, Ameria shows similarity with Emeri village, which has been renamed Bağpınar.[154] Emeri is a village located on the road to the Simeri fortress. Due to its location guarded by a fortress and the phonetic similarity, the suggestion that Emeri may be Ameria should be given consideration.

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[151] Arslan states that the distance between Cabeira and Eupatoria determined by Strabo is incorrect. According to Arslan, this distance was 250 stadia or approximately 45 kilometers (Arslan, 2007: 28 fn. 106). The likelihood of being able to send signals from this distance is examined in the analysis chapter.

[152] Magie believes that Mithradates VI founded a new suburb named Eupatoria as part of efforts to improve Amisus, and that this suburb was brutally destroyed by the Roman army (Magie, 1950: 186).

[153] Boyce and Grenet, 1991: 254.

[154] Bağpınar is the village of Erbaa district in Tokat.

Cabeira, which is thought to neighbor Ameria, is considered as a fortress in this study, but it should also be considered as a settlement because, for this place, the ancient sources mention the palace of Mithradates VI, furnished with a water-mill, zoological gardens and mines (Strabo, XII.3.30).[155] The forestlands of the Paryadres Mountains had abundant hunting game (Strabo, XII.3.30; App. Mithr. 79-80).[156] Considering all these things, it may well be thought that Mithradates planned a self-sufficient settlement in Cabeira. It was a fortified settlement on the southeastern exit of the Phanaroia on the slopes of Paryadres on the right side of the Lycus River. Placed in a secure position, Cabeira also was in control of routes through the area (Olshausen and Biller, 1984: 52).

The Third Mithradatic War, the one fought in Pontos, mostly took place in Cabeira and in its vicinity. After Lucullus formed an army in Amisus, Mithradates VI gathered his own army of 40,000 infantrymen and 4000 cavalrymenunder the command of his generals, Diaphantos and Taxiles, in a the strategic location, Cabeira, and waited there for the winter to pass (App. Mithr. 78). Cabeira was fortified and in a position to receive news of Lucullus' progress. Outpost fortresses on the Paryadres Mountains transmitted Lucullus' every move to Cabeira through signals (App. Mithr. 79). Mithradates controlled all roads in the Kelkit Valley with his fortresses. When the war turned the favor of Romans, Mithradates fled from Cabeira to Comana, and the Romans took Cabeira. In 68-67 BCE, Mithradates returned from Armenia to take his country back from them. This time Mithradates attacked the Roman legions under the command of Fabius and defeated the Roman army. The Romans who were able to escape took shelter behind the walls of Cabeira (App. Mithr. 88). While besieging the city, Mithradates received the news that reinforcements for the Roman legions were on their way, and he had to leave Cabeira once again and this time forever (Dio Cass. XXXVI.10.1-2).

[155] Plinius, Nat. Hist, VI.8. Kozlu, which is in the Kelkit Valley, is a copper mining area like Gümüşlük and Domuz (Kaptan, 1979: 7).

[156] At Cabeira, Mithradates had a park with wild animals as well as a nearby hunting ground. There were hunting grounds in the Greek mainland. Furthermore, the Macedonians devoted "the most suitable districts to the preservation of game," guarding them carefully during times of war (Bowe, 2015: 275).

6.2.2. The Iris Valley System

The Yeşilırmak forms the main hydrographic basin the inner parts of Northern Anatolia. It originates at the western slope of Köse Mountain and flows into the Black Sea from Çarşamba Plain (Themiscyra). The Iris branches off (Kelkit, Çekerek, Mecitözü, Tersakan) in this basin, and its branches form alluvial plains whose fertility waslegendary in antiquity. These plains were Chiliocomon, Themiscyra, Diacopene and Dazimonitis. The economy of interior Pontos depended on them.

Surrounded by Mason (Mount Amozonios) to the south and the Miliç River to the east, the length of Themiscyra plain[157]is 40 kilometers, and its width is 15 kilometers (Ardos, 1985: 142). The plain of Themiscyra is watered by Iris and was always “moist and rich in grass” (Strabo XII.15). The plain was very suitable for feeding herds of cattle and horses and a bountifulsource of agricultural production (Strabo, XII.3.15).[158]

There was also the fertile Diacopene plain on the northwestern border of Amaseia. This small plain right to the west of Chiliocomon was named after the city of Diacopa (Gümüşhacıköy) (Wilson, 1960: 208). Here are the Hellenistic period settlements detected as a result of archaeological surveys: (Table 6.2).

[157] Strabo, XII.3.15

[158] Themiscyra was also described as the home of Amazons (Strabo, XII.3.9).

Table 6.2 Settlements in the Iris Valley

Sett. Id	Name	Sett. Type	Periods	Surveyor
288	Diacopa	Flat	Hell, Roman, Byz.	Özsait, 2003: 131
144	Akören	Slope	Hell	Özsait, 2002:192
314	Alıcık	Mound	EBA, MBA, LBA, IA, Hell, Roman	Dönmez, 2000: 235
318	Karatepe	Hill-top	EBA, MBA, LBA, IA, Hell, Roman	Özsait, 2002: 533
341	Mezarlıkkırı	Mound	IA, Hell	Özsait, 2004: 277
397	Kiliseçukuru	Slope	Hell, Roman	Özsait, 2003: 132
179	Paralıtepe 1	Mound	EBA, II.Mill, IA, Hell, Roman	Özsait, 1997: 177
204	Gelinkayasıkale	Hill-top	IA, Hell, Roman	Dönmez, 2000: 234

We see that most of the settlements in the Diacopene plain have a history of continuous inhabitation. The settlements founded in the Hellenistic period were situated on the slopes of the plain. Mound settlements that originated in the Bronze Age and were inhabited in the Hellenistic period are located in the flats of the plain. It is believed that Diacopa was located in the middle of the plain, and also lending its name to the area was Gümüşhacıköy (Olhausen and Biller, 1984: 126). No remains of the settlement were recorded by Olshausen, Biller or Özsait, who conducted research in the area. It may be suggested that settlement #204, the Gelinkayası fort-settlement, located at the western entrance of the plain[159] also controlled the southwestern entrance of the plain in the Hellenistic period after the Iron Age. The Diacopene plain is under the surveillance of #402, the Katır Mağara fortress. This fortress was recorded by de Jerphanion during his visit and controls all the settlements in the area (1928: 32) (Figure 6.3).

Suluova, which inhabited from the Chalcolithic period, was a passageway due to its geographical position.[160] One of Yeşilırmak's branches, the Tersakan, runs through the

[159] The settlement covered an area of 120x70 meters and was destroyed by illicit excavations (Dönmez, 2000: 234).
[160] Settlements in the region that can be dated back to Chalcolithic period have been recorded by Özsait since 1986 (239-256) and 1987 (287-300).

plain. Its width from north to south reaches 22 kilometers, and its width from east to west direction reaches 45 kilometers. The observations and evaluations of Wilson (1960) and the Cumonts (1906) during their visits to the area identified the plain with Chiliocomon based on Strabos's account (XII.3.39).[161] Chiliocomon means the plain of a thousand villages. It is formed by the widening of the narrow valley at the northwestern exit from Amaseia and is limited by Tavşan Mountain to the south. It has very fertile land. According to McGing, and asits name suggests, Chiliocomon was a good example of a rural landscape in the Pontos (McGing, 1986: 7). While Wilson claimed that the plain was densely populated (Wilson, 1960: 207), we still have very little data to support this idea. Appian mentions that Murena looted 400 of Mithradates VI's villages in Chiliocomon during the winter of 82 BCE (App. Mithr. 65). Glew believes that the Chiliocomon was the name of the region as a toponym rather than a term meaning the plain of ten thousand villages (2000: 160). Furthermore, he thinks the event that Appian mentioned may have happened in the vicinity of Zela. Cappadocia formed the southern border of the kingdom and Rome took advantage of this southern route to sack rich agricultural lands of the state. This has been considered strategically favorable in terms of provoking Mithradates (Glew, 2000: 159-60). In order to understand the settlement distribution in Chiliocomon, Kocabıyık studied the sites from both Hellenistic and Roman periods comparatively (Kocabıyık, 2009: 35-74).[162]This study evaluated the site preferences of Hellenistic period settlements in terms of topography from a GIS-aided perspective. Here is a list of the settlements in Chiliocomon that were inhabited in the Hellenistic period (Table 6.3).

[161] Anderson, 1903: 49, Cumont and Cumont, 1906: 143, Wilson, 1960: 207, Kocabıyık, 2009.
[162] Kocabıyık conducted analyses that included today's Suluova, Merzifon and Gümüşhacıköy plains.

Table 6.3 Settlements in the Chiliocomon

Sett. Id	Name	Sett. Type	Periods	Surveyor
145	Örendere	Mound	EBA, Hell, Roman	Özsait, 2002: 536
146	Dereağıl	Mound	EBA, IA, Hell	Özsait, 1990: 290
192	Onhoroztepe	Mound	EBA, MBA, LBA, IA, Hell	Dönmez, 1999:522
193	Doğantepe	Mound	EBA, MBA, LBA, IA, Hell	Dönmez, 2002: 881
202	Oluzhöyük	Mound	EBA, MBA, LBA, IA, Hell	Dönmez, 2000:234; Dönmez, 2007: 49
203	Gediksarayhöyük	Mound	EBA, LBA, IA, Hell, Roman	Dönmez, 2000:234
206	Aşıtepe	Hill-top	EBA, IA, Hell, Roman	Özsait, 1998: 287, Dönmez, 2000:236
207	Deliciktepe	Flat	MBA, LBA, IA, Hell	Dönmez, 2000: 235
216	Sivritepe	Hill-top	EBA, MBA, IA, Hell	Dönmez, 1999: 516
221	Kayadüzü	Hill-top	EBA, IA, Hell, Roman	Özsait, 2002: 531
222	Çoraklık	Slope	Hell, Roman	Özsait, 2004: 277
299	Ortaovaköy	Mound	EBA, Hell, Roman	Özsait, 2004: 277
312	Elma Tepesi	Mound	EBA, II. Mill, Hell, Roman	Özsait, 2000:74
316	Dericik I	Slope	EBA, II. Mill, Hell, Roman	Özsait, 2002: 533
317	Üçtaş	Slope	Hell	Özsait, 2002: 532
337	Porsuk Burnu	Slope	Hell, Roman	Özsait, 2009: 380
396	Ebepınarın tepe	Slope	Hell, Roman	Dönmez, 2000: 235
399	Dericik II	Mound	EBA, II. Mill, IA, Hell	Özsait, 2002: 533

Most of the settlements in Chiliocomon were multi-period settlements. These settlements must also have been occupied in the Hellenistic period due to their economic benefits (proximity to roads). The settlements established in the Hellenistic period preferred sloping types of terrain. The plain is under the control of Kaleboğazı Fortress in the south. Katır Mağara fortress also controls the west Diacopene region and dominates Chiliocomon, too (Figure 6.3).

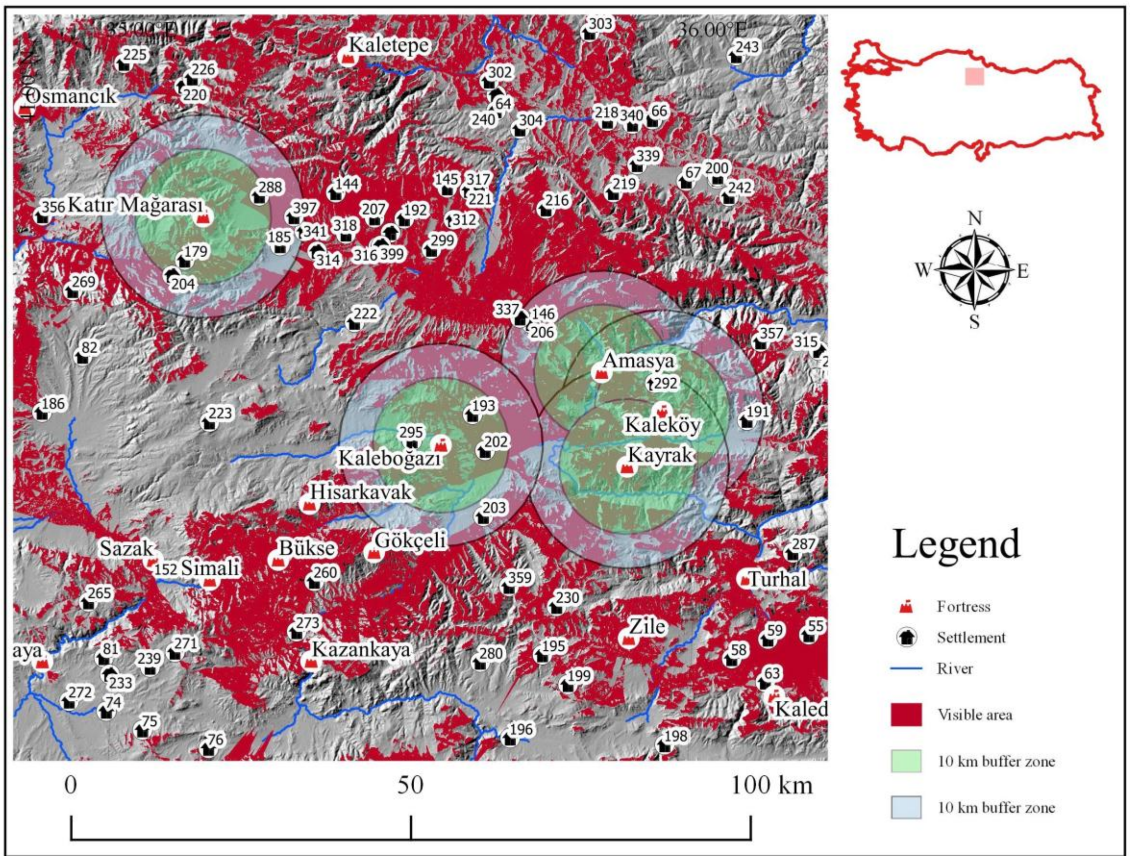

Figure 6.3 Settlements and fortresses in Chiliocomon

The Gazakene region in the west of the plain starts southwest of Amaseia and lies to the north of the fortress. Gazakene is today's Amasya plain, and in the Hellenistic period, Amaseia was surrounded by forests and meadows and had vast agricultural lands (Dönmez, 2014: 14). As mentioned above, one of the two most important settlements in the plain was Amaseia, and the other is the altar of Zeus Stratios located on the Yassıçal hill.

Amaseia

Located in the Gazakene region, Amaseia was the first capital of the kingdom in the core of the Pontic kingdom. Amaseia was the only center of an urban character in the interior of the kingdom (Højte, 2001: 12). Ancient sources also define it as a city (Strabo, XII.3.39; Memnon, XXXVIII. 9). An important point that should not be ignored is that Amaseia was characterized as a fortress.[163] The leading official in the settlement was the phrourarchos (OGIS 365).

On the bank of the river Iris, the city lies in a defile formed by two massive cliffs. One of these impregnable cliffs bears the striking fortress, which monitored the route leading through the defile. There are five monumental royal tombs located below, which stood as a manifestation of the early kings' presence.[164] The five kings, Mithradates I, Ariobarzanes, Mithradates II and III, and Pharnaces I, ruled the Mithradatic kingdom from Amaseia from circa 281-180 BCE. Hosting the tombs of kings which Strabo defined as "monuments of the basileia," Amaseia can be considered the kingdom's memorial landscape. These tombs were built under a commemorative program to underline the cultural continuity of the kingdom. In other words, they were the icons of identity and representations of symbolic power to the kingdom. These memorial works linked to the landscape can be considered as entrenching the history or patriotic past of the kingdom. Even though the geographical capital was changed,[165] Amaseia retained its importance as ancestral heritage and as an inseparable part of Mithradatic representational practices.[166] In 2002, Fleischer et al. conducted the photogrammetric documentation of these tombs. They divided the tombs into two groups and named them A to E, starting from the right. Tombs A, B, and C on the east side are close to the

[163] As a fortress, it is discussed in detail in the catalog.
[164] These five rock cut tombs were depicted on early third century CE coins of Amaseia (Højte, 2004: 18).
[165] Pharnaces moved the capital of the kingdom and the royal burial center from Amaseia to Sinope (Plut. Pomp. XLII.2-3; App. Mithr. 113).
[166] Regarding the formation of the landscape as commemorative visual culture, see Harmanşah, 2012: 623-651.

remains of the Hellenistic wall of the fortress. Tombs D and E are on the west side, and through their typologies, they are considered in comparison with other rock-cut tombs in Anatolia (Fleischer, 2009: 111).

Amaseia was the heart of the kingdom both economically and politically (Erciyas, 2006: 40). Besides being located on trading routes, having fertile lands allowed Amaseia to maintain its importance. Even during the reign of Pharnaces I (197-167-157 BCE), when the capital was moved to the important sea port, Sinope, providing the kingdom with international connections, due to its location and the existence of the Zeus Stratios temple in her territorium, Amaseia remained an important center. Amaseia was one of the first settlements of Mithradatic kingdom in the Pontos. The first king, Mithradates I Ctistes (301-266 BCE), established the core of the kingdom after occupying Gaziura and Zela, together with Amaseia. Amaseia stretched out on the both sides of the Iris. The bridges are proof of this. Despite the fact that the fortress was occupied during the Ottoman period, Hellenisticremains can still be detected under this cultural level. In a trench on the west side of the fortress, ashlar cut wall stones with bossages pertaining to the Hellenistic period and coins are among the supporting evidence (Doğanbaş, 2009: 11).

Dönmez states that Amaseia's urbanization began with the establishment of the Kingdom of the Pontos. In fact, Dönmez suggests that the fact that parts of the later fortifications are built with proper ashlar stones with a more archaic appearance than the rest of the masonry (Dönmez, 2014a: 18). He also suggests that Amaseia was established in the Iron Age on the slopes from Kızlar Palace to the Iris and their immediate surroundings (Dönmez, 2014a: 18).

As it is today, agricultural activity in Amaseia was intense. According to Magie, Amaseia was probably where Mithradates recruited soldiers and planned his expedition to the west of Anatolia (Magie, 1955: 178). It was one of the best locations forthe food and shelter needs of soldiers to be satisfied. After Mithradates VI fled the country to take refuge under Armenian king, Tigranes II, Amaseia was conquered by the Romans like the other Pontic settlements (App. Mithr. 82). Based on numismatic evidence, Erciyas suggested that Amaseia became part of the Roman administration in 33 BCE (2006: 40). Amaseia became a metropolis of the eparchy of Pontos Galaticus in 3-2 BCE. These developments have been tracked using coins (Dalaison, 2014: 225).

It is believed that Amaseia had strong fortification walls lying along the Iris in the Roman period. These assumptions are based especially on depictions on the coins minted in the Roman period for the city. One of these depictions helped reveal the existence of an important structure in the fortress. On the coins from the Roman imperial period, for example on the coin of Severus Alexander (222-235 CE), there is a depiction showing a fire altar in the upper part of the city surrounded by walls from where fire rises (Figure 6.4).

Figure 6.4 A coin of Severus Alexander with depiction of the Amaseia fortress with a fire altar on the obverse (Dalaison 2008: no.580a)

Researchers have suggested that the altar in this depiction was related with the temple next to it. Discourses about the depiction of temples on Amaseian coins claim that this is a depiction of the temple in the Zeus Stratios, and that the altar is the one there. Engravers did this on the coins due to the importance of the altar for Amaseia (Dalaison, 2014: 138; Sauer, 2014: 117).

Dönmez found acircular hole carved into a rock on the northeastern skirts of the fortress with 4-step stairs. The fact that there are two blocks from the Hellenistic period in the western side of this hole indicate that it was used as a fire altar (Dönmez, 2014b: 13). It sets a very good example of Achaemenid-rooted worship in the Amaseian territorium during the Hellenistic and Roman periods. However, there have been no findings at the fortress regarding the temple depicted on the coin as of yet.

Amaseia had large fertile plains occupied and cultivated by village settlements. Strabo provides names for the districts around Amaseia (Strabo, XII.3.39). A good source of information concerning these districts is obtained from the Roman perion inscriptions from the temenos surrounding the Zeus Stratios altar. French drew the plan of the temenos and studied the inscriptions in the 1980s (French, 1996: 78). The names of at least 12 districts in the Amaseian territorium are included in the inscription. This inscription on the Temenos wall of the Zeus Stratios altar had a dedication to the god by the delegates of the people living in interior Pontos (French, 1985: 9). Dalaison also believed that the named districts were in Amaseia’s territory (Dalaison, 2002: 267). Marek says that rural population came together and performed their tasks in a very organized manner in the context of the cult (Marek, 2009: 39). This binding power of the cult probably also allowed communities to generate common solutions to their problems (French, 1996: 82; Dalaison, 2002: 268). Williamson claims that the Zeus Stratios altar was a communal focus and was also seen as a source of civic pride (Williamson, 2014: 188). Zeus Stratios stands on the Büyük Evliya Çalı hill (1,312 meters) in the highlands 10 kilometers east of Amaseia (Figure 6.5).

Figure 6.5Yassıçal (courtesy of Amasya Museum)

This sanctuary was in use in the Hellenistic period. One of the ceremonies performed here by Mithradates VI was recorded by Appian. Appian reports that the king offered a sacrifice to Zeus Stratios after he rid Cappadocia of theforces of Murenaand describes the ceremony performed on a high hill:

"First, the kings themselves carry wood to the heap. Then they make a smaller pile encircling the other one. On the higher pile they pour milk, honey, wine, oil and various kinds of incense. On the lower they spread (as at the sacrifices of the Persian kings at Pasargadae) and then they set fire to the wood. The height of the flame is such that it can be seen at a distance of 1000 stades from the sea, and they say that nobody can come near it for several days on account of the heat. Mithradates performed a sacrifice of this kind according to the custom of his country" (Appian, Mithr. 66).[167]

[167] See also Cumont 1901: 47

In his account of the ceremony, Appian points to Mithradates' Persian roots. According to the information from Henkelman, Tuplin suggests that similar ceremonies were addressed in the Persepolis Fortification Archive (Tuplin, 2013: 15).[168] Another similar ceremony was performed for Poseidon and Zeus Stratios before the Paphlagonia expedition in 74 BCE (App. Mithr. 70). Olshausen points out that Zeus Stratios has place in Persian and Anatoliancult traditions (Olshausen, 1990: 1902). Saprykin remarks that Zeus Stratios is identified as the protector god of the Iranian Achaemenids, Ahura-Mazda (Saprykin, 2009: 255). The cult of Zeus Stratios in Yassıçal was also celebrated in the Roman period after the kingdom was destroyed. The altar depicted onAmaseian coins indicates the popularity of the cult during Roman period (Erciyas, 2006: 42; Dalaison, 2008). There is no doubt that the deity of Zeus had a special place for the Mithradatic dynasty. Since the early Mithradatids, Zeus was the chief god and seen as a protector of the royal family. This is evident from the Zeus depictions on the coins minted in the times of Mithradates III (Erciyas, 2006: 116-120; Callataÿ, 2009: 66-81).

French, being the first one to conduct scientific research on the Zeus Stratios sanctuary, drew the plan of the temenos and discussed the significance and the function of the sanctuary on the basis of the inscription found on it (1996, 75-92). The monumental fire altar depicted on the obverse of the coins minted during the reigns of Traianus, Severus Alexander and Septimius Severus in Amaseia supports Appian'saccount (Figure 6.4). The rescue excavation conducted by Amasya Museum unearthed the sanctuary, which had been severely destroyed by illicit excavations. The podium made of ashlar blocks standing in the middle of the sanctuary had a rectangular plan (Figure 6.6) (Cumont and Cumont 1906: 172). Votive inscriptions made of copper and bronze in the form of tabula ansata, coins, and pottery sherds were discovered during the rescue excavation. Four bull skulls were found carefully placed on the ground where the altar is thought to have been

[168] www.achemenet.com/document/TUPLIN_Military_dimension_of_hellenistic_kingship_08_2013.pdf.

(Özdemir, 2015: 142). These bull skulls are thought to be from animals sacrificed to Zeus.

Figure 6.6 Rectangular plan podium (courtesy of Amasya Museum)

The sanctuary was surrounded by a crescent-shaped curtain wall to the north in the Hellenistic period. This wall was extended and continued to be used in the Roman period. The altar discovered through excavations is rather small in size for a Hellenistic period structure. The altar was extended in the Roman period, and some structures were added in its vicinity. The structures dated to Roman period unearthed in the north-east and south-west directions right outside of the curtain wall could be places for the attendants responsible for the maintenance and security of the altar, and there mayalso have been a place for hiding votive offerings (Özdemir, 2015: 144).

The sanctuary was in a position that dominated Amaseia, protecting and looking over the communities living in its territorium. Williamson suggests that the attendance of communities living in the vicinity of the sanctuary to the sacrificial rites in which their delegates were taking part and the column of smoke produced in these ceremonies being big and impressive so that it could be seen from afar[169] strengthened their feelings of belonging and immunity since they could see the smoke for themselves (Williamson, 2014: 186).

Another important plain in the Iris Valley is Dazimonitis where the Iris River meanders from east to west. The plain is framed with mountain chains to the north and south, and wide alluvial fans on the slopes where these mountains meet the plain offer fertile agricultural potential (Ardos, 1985: 104). Strabo also highlights that the plain had very rich soil (Strabo, XII.3.15). The plain hosted two important centers of the kingdom: Comana and Zela. Comana was situated on a high hill right next to the Iris in the east of the plain. Zela was in the west side of the plain in the region called Zelitis.[170] Before getting to the major settlements in the plain, let us make an assessment of rural settlements from the Hellenistic period identified by archaeological surveys:

[169] Williamson intended to assess the size of the fire and its effect on communities based on his viewshed analysis of Yassıçal (Williamson, 2014: 174-188).
[170] This dissertation considers Zela as a fortress. However, in this chapter, it will be viewed as temple state.

Table 6.4 Settlements in the Iris Valley

Sett. Id	Name	Sett. Type	Periods	Surveyor
55	Ali tepesi	hill-top	Chal, EBA, Hell, Roman	Özsait, 1999: 94
57	Çerçi	mound	EBA, IA, Hell	Özsait, 1999: 97
58	Taşlıhöyük	mound	EBA, IA, Hell, Roman, Medieval	Özsait, 2007: 456
59	Burga	mound	EBA, IA, Hell, Roman	Durbin, 1971: 120
60	Çavundurhöyuk	mound	II. Mill, IA, Hell, Roman	Durbin, 1971: 123
63	Çayköy	mound	II.Mill, IA, Hell	Durbin, 1971:123
195	Uğurluoren	slope	EBA, II. Mill, IA, Hell, Roman	Özsait, 2000: 76
196	Salur	hill-top	IA, Hell, Roman	Özsait, 2000: 76
198	Toplutepe	hill-top	IA, Hell	Özsait, 2000: 79
199	Kayapınarıntepe	hill-top	EBA, II. Mill, IA, Hell, Roman	Özsait, 2000: 78
230	Kalenin tepe	hill-top	EBA, IA, Hell	Özsait, 2010: 199
280	İğdir	hill-top	Hell, Roman	Özsait, 2007: 455
281	Beşören	flat	Hell, Roman	Erciyas, 2011: 359
282	Döllük	hill top	Hell, Roman	Erciyas, 2006: 15
283	Nüğücük	hill top	Hell, Roman	Erciyas, 2007: 157
284	Komana	hill top	Hell, Roman, Byz, Medieval	Erciyas, 2015:
287	Akçatarla	hill-top	Hell, Byz	Olshausen&Biller, 1984: 65
293	Emirseyit	hill top	Hell, Roman, Byz	Erciyas, 2009: 290
294	Sevindik	flat	Hell, Roman	Erciyas, 2011: 360
191	Sarımeşe	Hill-top	Chal, EBA, MBA, IA, Hell	Dönmez, 1999: 520
14	Zela	Hill-top	EBA, Hell, Roman, Byz, Medieval	Özsait, 2007: 452
359	Kuştepe	Hill-top	Hell	

Settlement distribution in the Dazimonitis plain reveals a preference for hilltop settlements on highlands in the plain or on gentle low hills. Mound settlements also are located on the slightly elevatedareason the edges of the plain. The Hellenistic settlements were situated on hilltops. Agricultural land was left uninhabited.

The fortress chain controlling the rural life and agricultural activity in Dazimonitis plain was located on the ridges bordering the plain (Figure 6.7). As the analysis chapter will demonstrate, fortresses provide visibility coverage of the entire plain. Thus, the road passing through the plain and settlements scattered in the plain were being watched by the fortresses.

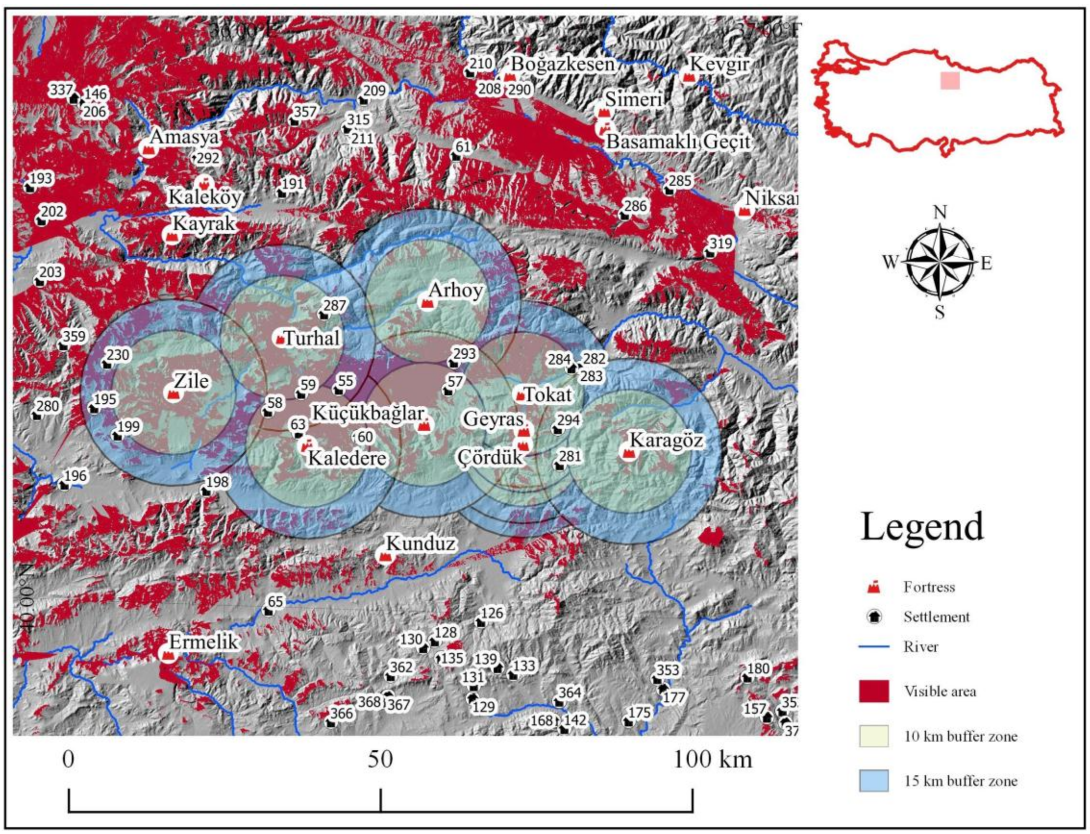

Figure 6.7 Settlements and Fortresses in the Dazimonitis Plain

Zela

Zela was located on a hill topin the west of the valley of Dazimonitis. The land surrounding the hill was Zela's territorium and was called Zelitis (Strabo, XII.3.39). In this area and on the Semiramis hill, stooda temple to Anaitis, the Mother Goddess of the Persians, who was also respected by Armenians. This temple was built by Persian generals in the fourth century BCE following their victory against Sacae (Strabo, XI.14.16; Boyce, 1985: 288).[171] They also built altars for Anaitis and the Persian gods, Omanes and Anadatus, and held annual festivals in the name of these deities (Strabo, XI.8.4). Strabo provides us with details about the rituals held here, ranging from the pyre ceremony to the clothes worn by the priests who conducted the rituals (Strabo, XV.3.15). Although there is no information available about the temple during the Hellenistic period, some perspective is provided from when the precinct gained city status, and the temple was depicted on the coins issued for the city during the Roman period (Price and Trell, 1977: 102).[172]

As well as functioning as a fort during the reign of the Mithradatids, Zela was actually governed as a sacred precinct. The sacred territory of Zela is located on the major road coming from the south at Tavium (Munro, 1901: 53) to Comana Pontica and going to Cabeira. The temple had an autonomous structure supported by the revenue earned from agricultural activities in its surrounding lands and has been identified as a temple state by scholars.[173] As noted above, the presence of these types of self-governing structures

[171] In his article discussing Pontos cults in detail, Olshausen gives us information about Sacae festival and the cults in Zela (Olshausen, 1990: 1870-3). A festival was also organized to celebrate the defeat, and it was named Sacaea. Strabo indicates that this festival was some kind of Bacchic festival where: "men dressed in the Scythian garb, pass day and night drinking and playing wantonly with one another, and also with the women who drink with them" (Strabo XI.8.5). A similar festival with Persian roots was held in Babylon (Athenaeus, XIV: 639). For the worship of Anaitis in Anatolia, see Sökmen, 2005: 33.

[172] Hexastyle temples were depicted on the coinage minted during the reign of Caracalla (211-217). In same period, fire altar depiction was seen on the coins (Price and Trell, 1977:174). The pyre related to cult symbol is similarly represented on coinage form Hypaipa where Persian deities were worshipped (Boyce, 1985: 288)

[173] Magie, 1950; Mitchell, 2002, Saprykin, 2009.

(*eparchies*) in the kingdom was an important factor in the organization of life in the countryside.

One of the most important cults in the social life of the kingdom was Anaitis (the others were Ma in Comana and Men in Cabeira). The kings of Pontos proved their loyalty to these three gods in temples dedicated to them (Strabo XII.3.31,37). The worship of Anaitis in Anatolia spread under Persian rule. Although it is necessary to recognize the significance of worship of the goddess at other temples in Asia Minor, there are no similar structures in any other temple for Anaitis like at Zela. Most are basically just temples not far from cities (Sökmen, 2005: 33).

Zela’s name is mentioned during the Third Mithradatic War. Here is Caesar's description of it:

> “Zela is a town of Pontos, well fortified, though situated in a plain; for a natural eminence, as if raised by art, sustains the walls on all sides. All around are a great number of large mountains, intersected by valleys. The highest of these, which is celebrated for the victory of Mithradates, the defeat of Triarius, and the destruction of our army, is not above three miles from Zela, and has a ridge that almost extends to the town” (Caesar,De Bello Alexandrino, 72).

As Caesar noted, Zela was located in a valley, but was naturally protected from all sides, and Mithradates VI had won the confrontation that took place in this territory. The battle mentioned in this statement is the battle that occurred when Triarius, one of Lucullus’ commanders (68-67 BCE), gained knowledge of Mithradates’ plans to destroy the Roman army’s supplies at Dadasa (Arhoy) when he was spending the winter at Gazioura (Turhal) (App. Mithr. 89).

Archaeological finds from the Hellenistic period, belonging to the Zela, which was one of the fortress of the Dazimonitis Valley where the most active stages of the battle had taken place, are very rare. On the northeast side of the hill, a theater was built partly of stone and probably of wood, and by carving the hill itself and including it in the structure. The only remains of the theater are the seats carved in the bedrock and some structures belonging to orchestra. Other remains of the city include a tomb and some architectural pieces (Wilson, 1960: 215). When Wilson visited Zela, which had defensive walls, he added the records of a Hellenistic period wall to those of Byzantine and Ottoman defensive walls, which are relatively more visible (1960: 215).

Following the defeat of Mithradates, the temple gained new vast territories including most of the Dazimonitis plains and areas stretching from the Zelitis to the Culupene and Camisene regions in the reorganization carried out by Pompey (Wilson, 1960: 213). Under Roman rule, Zela kept its secular structure and later joined Pontos Polmoniacus (Wilson, 1960: 214).

Comana

It would not be inaccurate to say that the hinterland of the Pontos belonged to the gods. Comana and Zela, identified as temple states, were prosperous centers since they had much land. Of the powerful and wealthy temples of the kingdom the most important was that of Ma, as she was locally known at Comana. The worship here was in every way similar to the worship of the same deity at the Cappadocian Comana. The temple of the Ma stood on a hill overlooking the Iris on the plain of Dazimonitis.

There were servants, clerks, attendants, and many officials of the temple as well as temple-slavesand votaries of the goddess who had dedicated themselves to her service. These included a large number of women sacrificed themselves as sacred prostitutes (Sökmen, 2005). On the other hand, the local people lived a life of luxury and had many vineyards and orchards. Many merchants, customers and soldiers flocked to Comana during the great festival, which occurred twice a year. So numerous were the visitors at these times and so great the amount of money they spent both in worship and in pleasure that Comana was referred to as a lesser Corinth (Strabo, XII.3.36). Mithradates VI bestowed the priesthood of Comana on his close friend, Dorylaos the Tactician;

however, after defeat by the Romans, Comana and its territory was given to Archelaos with the reorganization of Pompey (Strabo, XII.3.34-36). Strabo uses the word *polis* to describe Comana. This should not be considered mean it was a city-state, but as an inconsistency. Although it had enough elements to be referred as a polis,[174]what is confusing here is Strabo's insistence on using this term for a place in the heartland of the Pontos despite his having been traveler who had seen both western Anatolia and mainland Greece.

Cramer suggested that Comana is today's Gümenek in the record of his 1830 journey to document architectural ruins (Cramer, 1971: 108). Soon afterwards, Hamilton mentioned several architraves, parts of a frieze and a bridge from the Roman era (Hamilton, 1842: 350). The pieces of architrave Hamilton mentioned are now in the Tokat Museum, and have the words, *Hierocaesareion Komaneon*, written on them. Furthermore, two inscriptions were used as spolia in the Roman bridge that possibly connected to the two side of the city on the bank of Iris River. One of these indicates that Comana's sacredness was protected under the reigns of Traian and Hadrian (IGR III, 105; Erciyas 2006: 14). It is well known from Byzantine sources that Christianity arrived in Comana earlier than other cities, and that the city was commemorated by very important Christians (Erciyas and Sökmen, 2010: 123-129). The city was referred to in the *Danişmendnâme* as Sisiyye. Several works and surveys intended to understand the physical structure of the temple state of Comana were initiated by Erciyas and are still in progress.[175]

[174] Greek poleis had theaters, agoras, gymnasium and public sanctuaries to create an urban landscape (Zuiderhoek: 2014: 108).

[175] Erciyas. B. 2006. "Tokat İli Komana Antik Kenti Yüzey Araştırması 2004" *23. Araştırma Sonuçları Toplantısı* II:13-22, Erciyas, B. 2007. "Komana Antik Kenti Yüzey Araştırması 2005" *24.Araştırma Sonuçları Toplantısı* II: 155-166, Erciyas, B. 2008."Tokat İli Komana Antik Kenti Yüzey Araştırması 2006" *25. Araştırma Sonuçları Toplantısı* II: 197-212, Erciyas, B. 2010. "Komana Antik Kenti Arkeolojik Araştırma Projesi 2008 Yılı Raporu" *27.Araştırma Sonuçları Toplantısı* II: 355-374, Erciyas, B.2009 "Komana Antik Kenti ve Çevresi Yüzey Araştırması 2007" *26. Araştırma Sonuçları Toplantısı* I: 289-306, Erciyas, B., E. Sökmen, C. Kocabıyık 2011. "Komana Antik Kenti 2009 Yılı Kazı Çalışmaları" *32.Kazı Sonuçları Toplantısı* IV: 121-133, Erciyas, B., E. Sökmen 2010."An Overview of Byzantine Period Settlements around Comana Pontica in North-Central Turkey", *Byzantine and Modern Greek Studies* 34.2: 119-14, Erciyas, D.B. 2013."Komana/Sisiyye'de Bir Ortaçağ İşliği: Bizans'dan

As an autonomous entity, a temple state and a trade center, it is important to identify Comana to contribute to the archaeology of Anatolia (Erciyas, 2009: 291). The main purposes are identifying the social, economic, cultural and administrative structures of this temple state, finding the ruins that are relevant to it and comprehending all the elements of this ancient city together. Excavations are taking place in two areas: Hamamtepe in the center of the settlement, and in the hexagonal pool and a related group of buildings near the village of Bula. They are throwing light on daily life and social life in the Middle Byzantine and Seljuk periods. The excavations in Hamamtepe discovered a fortification wall from the Middle Byzantine period and a workshop area that is an important part of the fortified settlement. Just below this period of occupation, the remains of two chapel buildings have been found.

Comana witnessed parts of the Second and Third Mithradatic Wars. It functioned as a shelter and a military camp for Mithradates VI when he was at a disadvantage. Murena marched to Pontos through Cappadocia in 83 BCE, plundered the temple at Comana and killed some of its servants (App. Mithr. 64). On the other hand, Mithradates sent ambassadors who were philosophers and scholars to Murena to notify him that what he did was against the Agreement of Dardanos. However, Murena said that it was invalid and went on to plunder the city.

During the Third Mithradatic War, the commanders of Mithradates were defeated by Roman troops, and the king retreated to Comana since he could not suppress the rebellion in military camp. The Roman and Galatian vanguards were about to catch him, but one of the mules carrying Mithradates' treasure fell to the ground, and the soldiers chose to plunder the gold in the ground instead of chasing Mithradates. Thus, Mithradates arrived at Comana and reassembled his cavalry from the scattered army (App. Mithr. 82). However, when he heard the news that Lucullus was chasing him, he

Danişmendliler'e Tokat'ın Değişen Çehresi", *Güneş Karadeniz'den Doğar Sümer Atasoy'a Armağan Yazılar*, Ed. Ş.Dönmez, Hel Yayıncılık, Ankara, 133-150.

set off with 2,000 mounted troops in 71 BCE, crossed the River Halys and went to his son-in-law, the King of Armenia, Tigranes II's lands.

There was another battle in Comana when the king returned to Pontos from Armenia. When Mithradates VI established an army again and went back to his country, he heard that the Roman commander, Triarius, had gathered an army and set off to Cabeira, he lifted the siege to withdraw to Comana (App. Mithr, 88). Triarius chased him to Comana, and the Romans came to the frontiers of the city in 68 BCE. Mithradates crossed the bridges on the River Iris and defeated them. However, an intensifying wind and a great storm subverted the orders of the armies (App. Mithr. 88). The mounted troops of Pontos were about to attack the Romans' left flank by crossing the second bridge in Iris, but the bridge was collapsed because of the weight it carried and the storm, so they could not reach their king to help him. The outcome of this combat is unknown, and it ended when Mithradates withdrew to the temple. The winter circumstances constituted impediments for waging war, and the Roman army wintered in Gazioura. The king stayed in Comana and began to plan his next move (Arslan, 2007: 421). Comana was where Mithradates took shelter during the wars, where war plans were established, and where armies were gathered. It is possible that Comana's rich sources and the vast income of its temple made it people extremely devoted to their king.

6.2.3. The Halys River System

6.2.3.1. The Upper Halys

While ancient sources do not provide certain information about the southern border of the Mithradatic kingdom, they say that the border between the Pontos and Cappadocia is separated by a mountain chain parallel to the Tauros Mountains. Ramsay suggests that this mountain chain is the Çamlıbel Mountains, which are a branch of Akdağ (Ramsay, 1890: 315). This chain located close to the northern side of The Upper Kızılırmak valley is broken by the river on its way to the southwest. The area also forms the southern border of Pontos, which also covers Camisene (lands around Camisa fortress), Culupene (lands including Sebastopolis and Sebasteia) and Zelitis (vast lands around Zela and its vicinity) districts (Ramsay, 1890: 315; Magie, 1950: 178). We discussed Zelitis region and settlements above. Here is the Hellenistic period distribution of settlements in the Camisene and Culupene regions.

Table 6.5 Settlements in the Upper Halys Valley

Sett. Id	Sett. Name	Sett. Type	Periods	Surveyor
65	Sulusaray (Karana)	Flat	Hell, Roman, Byz	Significant centre (Özcan, 1991: 170)
83	Karakale	Hill-top	EBA, IA, Hell,	Ökse, 1999: 467
85	Deliktaş	Flat	Hell, Roman	Ökse, 1999: 468
86	Ziyarettepe	hill-top	Hell, Roman	Ökse, 1999: 467
87	Depiklo	Flat	Hell	Ökse, 1999: 468
88	Ağcakale	hill-top	Hell, Roman	Ökse, 1999: 468
89	Ortakale	hill-top	Hell, Roman	Ökse, 1999: 468
90	Dedeli Kale	hill-top	Hell, Roman, Byz.	Ökse, 2000: 11
91	Çukursaray	hill-top	Hell, Roman	Ökse, 1999: 468
92	Kale Tepesi	hill-top	Hell, Roman	Ökse, 2000: 15
93	Kurtderesi	hill-top	Hell, Roman	Ökse, 1999: 474
94	Karlıktepe	hill-top	Chal, EBA, Hell, Roman	Ökse, 2000: 12
95	Yamacınbüyük tepe	Mound	EBA, MBA, Hell, Roman	Ökse, 2000: 12
96	Pünelek Tepe	Mound	EBA,Hell, Roman	Ökse, 2000: 12
97	Mezarbaşı Mevkii	Flat	Hell, Roman	Ökse, 2000: 12
98	Gücükkale	hill-top	Hell, Roman	Ökse, 2000: 13
99	Alınpınarı	Flat	Hell, Roman	Ökse, 2000: 12

Table 6.5 (continued)

100	Alıkören	Slope	Hell, Roman	Ökse, 2000: 13
101	Kalaycık Mevkii	Flat	Hell, Roman	Ökse, 2000: 14
102	Çamurlu Mevkii	Flat	Hell, Roman	Ökse, 2001: 91
103	Hanyeri	Slope	Hell, Roman	Ökse, 1999: 475
104	Musa Efendi	Flat	Hell, Roman, Byz.	Ökse, 2000: 15
105	Şevket Tepesi	hill-top	EBA, MBA, Hell, Roman	Ökse, 2000: 15
106	Konalga	Mound	Chal, EBA, Hell, Roman	Ökse, 2000: 15
107	Kapaklıpınar	hill-top	Hell, Roman	Ökse, 2000: 15
108	Kuşaklıhöyük	hill-top	Hell, Roman, Byz.	Ökse, 2000: 15
109	Kaleköy	hill-top	EBA, Hell, Roman, Byz.	Ökse, 2000: 15
110	Samankaya	hill-top	Hell	Ökse, 2000: 16
111	Kaletepe	hill-top	EBA, Hell, Roman	Ökse, 2000: 16
112	Pılır	Mound	Chal, EBA, Hell, Roman	Ökse, 1994: 245
113	Surtepesi	hill-top	EBA, Hell, Roman, Byz.	Ökse, 2000: 12
114	Boğazörenkale	Slope	IA, Hell, Roman, Medieval	Ökse, 1999: 468
115	Kışevlu	hill-top	Hell, Roman	Ökse, 1999: 469
116	Karasekidüzü	Slope	EBA, Hell, Roman, Medieval	Ökse, 1994: 246
117	Gökçebel	Slope	IA, Hell, Roman, Medieval	Engin, 2011: 89
118	Dağyurdukale	hill-top	IA, Hell, Medieval	Engin, 2011: 90
119	Gırıkbabahoyuk	Mound	EBA, IA, Hell, Roman, Medieval	Engin, 2010: 90
120	Ballıklar	Mound	EBA, IA, Hell, Roman, Medieval	Engin, 2010: 88
121	Taşocağı tepesi	hill-top	Hell, Roman, Medieval	Engin, 2010: 91
122	Tümtepe	hill-top	Hell, Roman	Engin, 2010: 92
123	Delikkaya	hill-top	Hell, Roman	Ökse, 1999: 469

Table 6.5 (continued)

124	Konaközü Kale	hill-top	Hell, Roman, Byz.	Ökse, 1999: 470
125	Kiremitli	hill-top	IA, Hell, Roman	Ökse, 1999: 469
126	Kızılkaya	hill-top	Hell, Roman	Ökse, 1999: 469
127	Topikeyes	Slope	IA, Hell, Roman, Medieval	Engin, 2010: 91
128	Göğdere	Slope	EBA, IA, Hell, Roman, Byz	Ökse, 1999: 470
129	Üyüktepe	Slope	Hell, Roman	Ökse, 1999: 470
130	Aytepe	hill-top	EBA, IA, Hell, Roman	Ökse, 1999: 470
131	Kaletepesi	hill-top	Hell, Roman	Ökse, 1999: 470
132	Kala	slope	IA, Hell, Roman, Byz	Ökse, 1999: 471
133	Öksüztepe	hill-top	Chal, EBA, Hell, Roman	Ökse, 1999: 470
134	Kazanpınar	hill-top	Hell, Roman, Byz	Ökse, 1999: 471
135	Hörükkaya	hill-top	Hell, Roman	Ökse, 1999: 471
136	Boztepe	hill-top	Hell, Roman, Byz	Ökse, 1999: 471
137	Seslan Tepe	hill-top	EBA, Hell, Roman	Ökse, 1999: 471
138	Kayalıpınar[176]	Mound	MBA, LBA, Hell, Roman	Müller-Karpe, 2012: 408; Kaya, 2014: 427
139	Küçüktepe	Mound	EBA, Hell, Roman	Ökse, 1999: 469
140	Ekecik Mevkii	Flat	Hell, Roman, Byz	Ökse, 1999: 472
141	Baytar Mevkii	Flat	Hell, Roman, Byz	Ökse, 1999: 472
142	Değirmentepesi	hill-top	Hell, Roman	Ökse, 1999: 469
143	Maşatlık Mevkii	Flat	Hell, Roman, Byz	Ökse, 1999: 473
148	Yücebacakalesi	Slope	IA, Hell, Roman	Ökse, 1999: 471
151	Büyüktepe	hill-top	EBA, IA, LBA, Hell, Roman, Medieval	
153	Bakımlı	Slope	Hell, Roman	Ökse, 1997: 380
154	Zölük mevkii	Flat	Hell, Roman	Ökse, 1997: 380

[176] In the rescue excavation conducted in Kayalıpınar, Hellenistic layer was recorded in first level (Kaya, A. 2014. Sivas Yıldızeli Kayalıpınar Kazısı, *22. Müze Çalışmaları ve Kurtarma Kazıları Sempozyumu,* p.427-440).

Table 6.5 (continued)

155	Pınarbaşı	Mound	Hell, Roman, Medieval	Ökse, 1997: 381
157	Güçverentepe	hill-top	IA, Hell, Roman	Ökse, 1997: 378
158	Halkalı Mevkii	Slope	Hell, Roman	Ökse, 1997: 379
159	Nasırkale	hill-top	Hell, Roman, Medieval	Ökse, 1997: 387
160	Öküzkale	hill-top	IA, Hell, Roman, Medieval	Ökse, 1997: 381
161	Alçıören Höyük	Mound	Hell, Roman	Ökse, 1997: 379
162	Saçayağı	Slope	EBA, MBA, IA, Hell, Roman	Ökse, 1997: 383
163	Yalnızsöğüt	Mound	Hell, Roman, Medieval	Ökse, 1997: 382
164	Ağapınar	hill-top	IA, Hell, Roman	Ökse, 1997: 383
165	Uğrunca	Slope	Hell, Roman, Medieval	Engin, 2010: 82
166	Turnağı Mevkii	hill-top	Hell, Roman	
168	Çorak Mevkii	Slope	EBA, IA, Hell	Ökse, 2000: 15
169	Menteşetek Höyük	Mound	EBA, MBA, LBA, Hell, Roman, Medieval	Ökse, 1994: 244
171	Küllüktepesi	hill-top	EBA, MBA, IA, Hell, Roman	Ökse, 1996: 207
172	Apa	Slope	Hell, Roman	Ökse, 1996: 208
173	Kurtlukaya	hill-top	EBA, MBA, Hell, Roman	Ökse, 1998: 208
174	Durgunsu Kale	hill-top	Hell, Roman, Medieval	Ökse, 1996: 209
175	Ağılgüneytepe	Flat	Hell, Roman	Ökse, 1996: 210
176	Yazıtepe	hill-top	Hell, Roman	Ökse, 1996: 210
177	Hamzaşeyh Kalesi	hill-top	EBA, MBA, LBA, IA, Hell, Roman	Ökse, 1996: 210
178	Özmevkii	hill-top	IA, Hell, Roman, Medieval	Ökse, 1996: 211
180	Kaletepe	hill-top	EBA, Hell, Roman, Medieval	Ökse, 1996: 208

Table 6.5 (continued)

181	Kartalca Kale	hill-top	IA, Hell, Roman	Ökse, 1997: 377
182	Büyükkale	hill-top	Hell, Byz.	Ökse, 1997: 376
212	Eşikli	Flat	Hell	Ökse, 2002: 230
215	Pur Mevkii	Slope	Hell, Roman	Ökse, 2002: 232
227	Asarkale	Slope	Hell, Roman, Medieval	Ökse, 2002: 233
228	Karatepe	hill-top	Chal, EBA, MBA, Hell, Roman	Ökse, 2000: 16
231	Küçükgüzel	hill-top	Hell	Engin, 2009: 133
232	Eskişar	Slope	IA, Hell, Roman, Medieval	Engin, 2009: 139
236	Adamfakı	Mound	EBA, IA, Hell	Ökse, 1997: 382
237	Küçükhöyük	Mound	Hell, Roman	Ökse, 1997: 383
238	Osmaniye Kalesi Höyük	hill-top	EBA, Hell, Roman, Medieval	Engin et al, 2012:177
245	Solakhöyük	Mound	IA, Hell	Engin, 2009: 77
252	Delikkaya	hill-top	Hell, Roman	Engin, 2009: 78
259	Kalecik	hill-top	EBA, IA, Hell, Roman, Medieval	Ökse, 1997: 384
271	Kızılhamza Höyük	Mound	EBA, II.Mill, IA, Hell, Roman	
291	Sivas	Flat	Hell, Roman	Significant Centre
320	Bedirören Höyüğü	Mound	IA, Hell, Roman	Engin et al, 2012:177
321	Hacısöğüt	hill-top	EBA, IA, Hell, Roman, Medieval	Engin et al, 2012:181
322	Sucak Höyük	Mound	EBA, II.Mill, IA, Hell, Roman, Medieval	Engin et al, 2012:178
323	Kürünlü	hill-top	Hell, Roman, Medieval	Engin et al, 2012:181

Table 6.5 (continued)

324	Kaletepe I	hill-top	IA, Hell, Roman, Medieval	Engin et al, 2012:182
325	Atalan Köyü	Slope	Hell, Roman, Medieval	Engin et al, 2012:182
326	Kaletepe III	hill-top	LBA, IA, Hell, Roman, Medieval	Engin et al, 2012:182
327	Gavur Kalesi	hill-top	Hell, Roman, Medieval	Engin et al, 2012:182
328	Topçuyeniköy	Flat	Hell, Roman, Medieval	Engin et al, 2012:183
329	Karakuş Kayası	Slope	EBA, IA, Hell, Roman, Medieval	Engin et al, 2012:187
330	Büyüktepe	hill-top	EBA, IA, Hell, Roman	Engin et al, 2012: 188
331	Karataş	Slope	Hell	Engin et al, 2012:183
332	Sarıpınar	Slope	Hell, Roman, Medieval	Engin et al, 2012:187
333	Tedürge	Slope	Hell, Roman, Medieval	Engin et al, 2012:188
334	Akşar	Slope	Hell	Engin, 2009: 134
335	Halilbaba Höyüğü	Mound	II.Mill, IA, Hell, Roman, Medieval	Engin, 2009: 136
336	Tilkitepesi	hill-top	EBA, II.Mill, IA, Hell, Roman	Engin, 2009: 136
338	Dere Mevkii	Slope	Hell, Roman	
345	Zindantepesi	hill-top	Hell, Roman, Byz.	Ökse, 2000: 12
347	Ören Mevkii	Slope	Hell, Roman	Ökse, 2000: 14
348	Büyükkeriz Mevkii	Slope	Hell, Roman	Ökse, 2001: 91
349	Termezkayası	Flat	Hell, Roman, Medieval	Ökse, 2001: 91
351	Kayanınucu	Slope	EBA, MBA, Hell, Roman	Ökse, 2001: 91

Table 6.5 (continued)

352	Eğrek Tepesi	hill-top	Hell	Ökse, 2001: 92
353	Boyunbaba Tepesi	hill-top	Hell, Roman	Ökse, 2001: 93
354	Kaleboynu	Slope	Hell, Roman	Ökse, 2001: 91
355	Konakyazı Kalesi	hill-top	IA, Hell, Roman, Byz	Ökse, 2000: 14
360	Büyükkale	hill-top	IA, Hell, Roman	Engin, 2011: 90
361	Tekur Kalesi	hill-top	EBA, Hell, Roman	Ökse, 1997: 376
362	Untepesi	hill-top	IA, Hell, Roman	Ökse, 1999: 468
363	Halkalı Mevkii	Slope	Hell, Roman	Ökse, 1997: 379
364	Ziyarettepe	hill-top	Hell, Roman	Ökse, 1999: 467
365	Ağcakale	hill-top	Hell, Roman	Ökse, 1999: 468
366	Gavurören	Flat	Hell, Roman	Ökse, 1999: 468
367	Kale II	hill-top	Hell, Roman, Byz.	Ökse, 1999: 468
368	Ziyarettepe	hill-top	Hell, Roman	Ökse, 1999: 468
369	Değirmentepesi	hill-top	Hell, Roman, Byz.	Ökse, 1999: 472
370	Kızılkaya	hill-top	Hell, Roman	Ökse, 1999: 469
371	Urumoğlan Mevkii	Mound	Hell, Roman, Byz.	Ökse, 1999: 474
372	Yunusöreni	hill-top	Hell, Roman	Ökse, 1999: 473
373	Küçükkoruluk	hill-top	Hell, Roman	Ökse, 1999: 469
374	Çağsak Mevkii	hill-top	Hell, Roman, Byz.	Ökse, 1999: 474
375	Kurtdere Mevkii	hill-top	IA, Hell, Roman	
376	Ziraat Tepesi	hill-top	IA, Hell, Roman	Ökse, 1999: 475

Table 6.5 (continued)

377	Kolluca	Mound	EBA, IA, Hell, Roman	Ökse, 1994: 245; Ökse, 1995: 320
378	İşhan	hill-top	Hell, Roman, Medieval	Ökse, 1994: 245
379	Taşlıdere	hill-top	LBA, IA, Hell, Roman	Ökse, 1995: 320
380	Üzeyir	hill-top	IA, Hell, Roman, Medieval	
381	Tecer	hill-top	Hell, Roman	Ökse, 1995: 320
382	Sağır Höyük	Mound	Hell, Roman	
383	Otmanalan	Slope	EBA, IA, Hell, Roman, Medieval	
384	Dikmetaş Höyüğü	Mound	EBA, IA, Hell, Roman, Medieval	
385	Küçük Höyük	Mound	Hell, Roman, Medieval	Engin et al, 2012:176
386	Yarhisar	hill-top	Hell, Roman, Medieval	Ökse, 1997: 380
387	Çimenyenice Höyük	Mound	II.Mill, IA, Hell, Roman	Ökse, 1997: 380
388	Öreğil Kalesi	hill-top	Hell, Roman, Medieval	Ökse, 1997: 384
392	Çınarlı	Flat	Hell, Roman	Ökse, 1997: 378
393	Kabalı	hill-top	IA, Hell, Roman, Medieval	
398	Küçüktepe	Mound	EBA, Hell, Roman	Ökse, 1999: 472
400	Küllütepe	hill-top	EBA, IA, Hell, Roman	Ökse, 1996: 207
214	Abdülușağı Mevkii	Flat	Hell, Roman	Ökse, 2002: 231
346	Tekke Mevkii	Mound	Hell, Roman	Ökse, 2001: 92

It is possible to estimate settlement density from the table. The major point here is that diachronic surveys that reveal settlement pattern of Upper Halys have been carried out systematically. Studies initiated by Ökse in 1994 have been carried out by Engin since

2009 (Table 6.5). The 171 Hellenistic settlements inside the borders of the kingdom were plotted based on survey reports. Of these settlements, 95 were founded in the Hellenistic period, and the rest had more continuity. This suggests that 55% of the settlements in the region originated in the Hellenistic period (Figure 6.8). The result almost coincides with the analysis Erciyas conducted based on the data from the archaeological surveys until 2001 (Erciyas, 2006: 56).[177] This means that periodic distribution of the settlements detected in 14 years has a regular proportion.

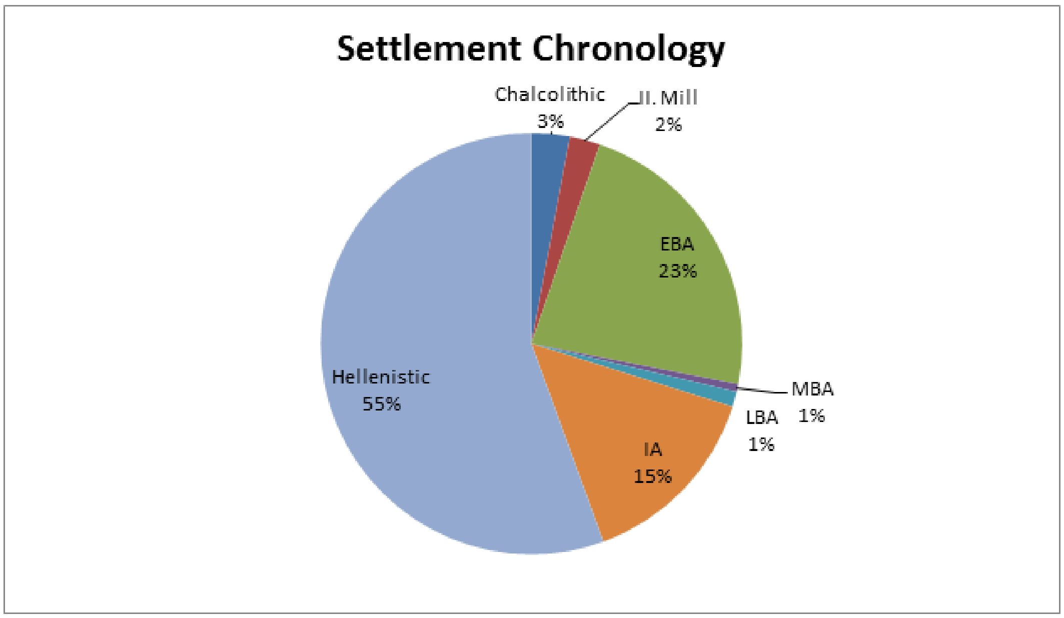

Figure 6.8 Settlement distribution by periods

The pottery data from the Hellenistic period collected by surveyors indicate that some settlements were on the slopes of the plain, and most were on hill-tops in strategic locations.[178] Most settlements with Hellenistic origin were situated on hill-tops (Figure 6.9). The table shows that all the hilltop settlements with Iron Age origins were also

[177] Erciyas' archaeological survey data until 2001 is for 69 Hellenistic settlements. This corresponds to 49.3% of the data (Erciyas, 2006: 56). The number of Hellenistic settlements detected until now has increased by 26 when compared to the data from Erciyas.

[178] Ökse explains this pattern with the existence of wide flat settlements and fortress chains on the hill-tops protecting them (Ökse, 1999: 477).

inhabited in the Hellenistic period without exception. Flat and sloping locations were also chosen for settlements that were established in the Hellenistic period (Flat 21, Slope 18). In fact, this allows us to assume that settlement distribution in the Hellenistic period was defense-oriented.

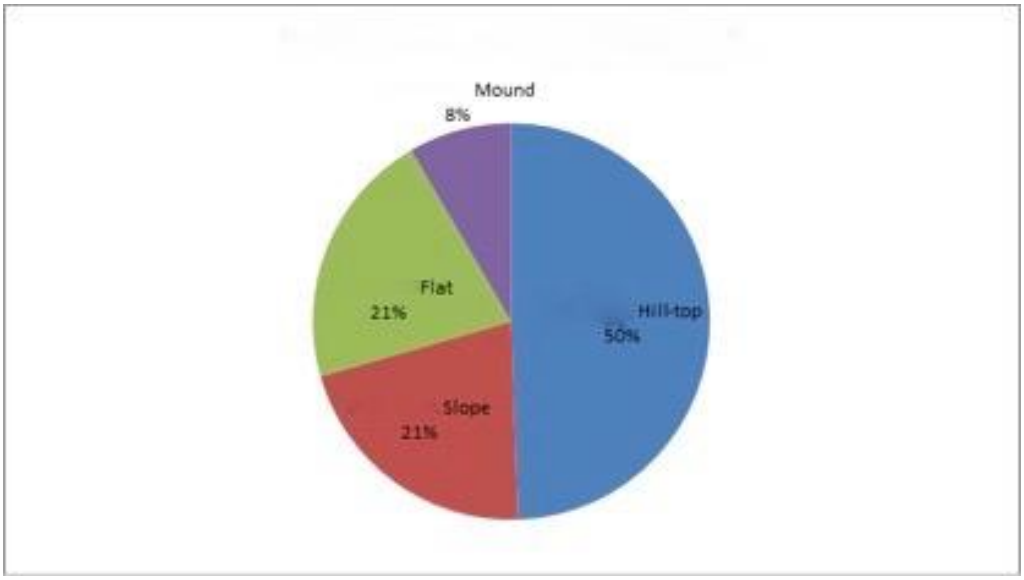

Figure 6.9 Settlement Type Preference in the Upper Halys Valley

The results from the Sivas archaeological survey are striking. Can we predict a settlement boom in the Upper Halys region in the Hellenistic period when compared to other regions? Or was this only because the archaeological survey was conducted carefully? It is clear that the survey was conducted carefully. However, the first question cannot be explained even by historical data. The only information we have is that the region hosted two areas, Camisene and Culupene, after the Mithradatic wars (Strabo, XII.3.37). Strabo's account suggests that as a result of the reorganization made by Pompey, part of the region was given to the priesthood of Comana, part of it to the priesthood of Zela, and the rest to the Trochmian, Ateporix (Magie, 1950: 1285). One of the Hellenistic settlements of the region, Karana was rebuilt in the name of Augustus and renamed as Sebastopolis (Cumont 1906: 205).[179] The Tokat Museum in conducting rescue excavations there, which have discovered that it was continuously inhabited from the Early Bronze Age to the Ottoman period (Özcan, 1991: 170). Another important settlement in the region, which also was described as an old fortress in ancient sources, is the Camisa (Kemis) fortress. In their account of a visit to the fortress, Olshausen and Biller noted that the fortress was used in the Hellenistic and Roman periods and that there were painted pottery sherds along its side (Olshausen and Biller, 1984: 62).[180] Around Camisa, which was ruined by the Romans (Strabo, XII.3.37), was the Camisene region's agricultural lands and settlements. During the Roman period, this region and the fortress were included in the borders of Megalopolis (Sebasteia) (Strabo, XII.3.37).

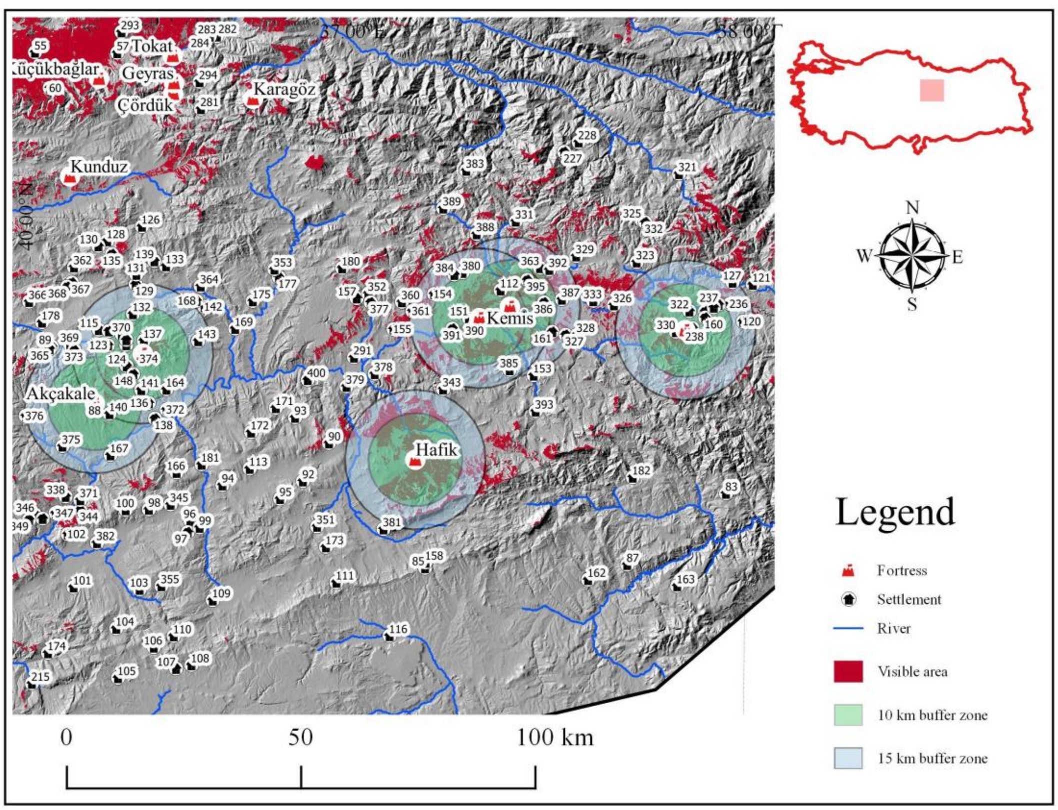

Figure 6.10 Settlements and Fortresses in the Upper Halys Valley

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[179] Unfortunately, we do not have any information about Hellenistic Karana. If we assume that the toponym presents continuity. For a thorough discussion on whether Karahna city is Karana from Hittite Period texts, see Barjamovic, 282 ff.

[180] For detailed information about the fortress, see the catalogue.

The fortresses in the region (Osmaniye, Hafik, Camisa, Kümbet, Deliktepe and Akçakale) are located close to water on high rocky hills. These fortresses were built in locations with high visibility coverage (See Analysis). The 10 and 15 kilometers zone lines of Kümbet, Akçakale, Camisa, and Deliktepe fortresses overlap with those of the Akçakale, Kümbet, Deliktepe and Camisa fortresses. It is possible to see that there are settlements in these areas of overlap within the visibility ranges of the fortresses. There were no settlements in the vicinity of the Hafik Fortress (Figure 6.10), which may be a clue to its function.

The Lower Halys

The area mentioned by Strabo, covering the Phazemonitis region, began to be studied by Alkım in the second half of the 70s, and by Bilgi and Dönmez in the 2000s. Recent studies were conducted in Vezirköprü and Havza under the "Where the East Meets West" project, and information regarding the Roman occupation of the region was added to project's database.[181] According to Strabo, Phazemonitis region was considered rich in silver, grains and fishery products (Strabo, XII.3.38). Laodiceia and Phazemon were located in this fertile area (Arslan, 2007: 19).[182] Here is a list of the settlements inhabited there in the Hellenistic period that have been detected by archaeological surveys:

[181] Bekker-Nielsen & Winther-Jacobsen, 2013: http://www.academia.edu/9859933/Yüzey_araştırması_Vezirköprü_ve_Havza_ilçesinde_Ekim_2013_Rapor.

[182] Arslan provides detailed information about Laodiceia.

Table 6.6 Settlements in the Lower Halys Valley

Sett. Id	Settlement Name	Sett. Type	Periods	Surveyor
64	Süleyman mevkii	Flat	IA, Hell, Roman	Alkım, 1975: 6
66	Yüktepe	Mound	EBA, MBA, IA, Hell, Roman	Alkım, 1975: 7
67	Devşerkaya	Mound	EBA, MBA, LBA, IA, Hell, Roman	Özsait, 2006: 249
68	İnkaya	Slope	Hell, Roman	Alkım, 1975: 7
156	Köyiçitepesi	Hill-top	IA, Hell, Roman	Dönmez, 2005: 66
200	Kıranboğaztepe	Hill-top	Hell, Roman	Dönmez, 2000: 233
201	İkiztepe II	Slope	Hell, Roman	Dönmez, 2000: 236
218	Çakırhöyük	Mound	EBA, IA, Hell, Roman	Özsait, 2006: 250
219	İnboynu	Mound	EBA, Hell, Roman,Medieval	Özsait, 2004: 275
220	Akkaya	Flat	EBA, Hell	Özsait, 2004: 274
226	Kalecik tepe	Hill-top	EBA, II.Mill, IA, Hell	Özsait, 1997: 173
240	Hüyüktepe	Mound	EBA, II. Mill, IA, Hell, Roman	
242	Kilisetepehöyük	Mound	EBA, MBA, IA, Hell, Roman, Byz	Alkım, 1975: 6
302	Çamtepe	Hill-top	EBA, IA, Hell	Alkım, 1975: 6
303	Çamyatağı	Mound	EBA, II.Mill, IA, Hell, Roman, Medieval	Bilgi et al, 2002: 286
304	Havza	Flat	Hell, Roman, Byz	Alkım, 1975: 6
305	Kaleyeritepesi	Slope	EBA, II. Mill, IA, Hell	Alkım, 1975: 7
306	Tepesidelik	Mound	IA, Hell	Alkım, 1975: 7
339	Kireçlik	Flat	EBA, Hell	Özsait, 2004: 274
340	Çakırhöyük	Mound	EBA, IA, Hell, Roman	Özsait, 2004: 274
350	Kale	Flat	EBA, II. Mill, IA, Hell	
290	Oymaağaç	Mound	EBA, MBA, IA, Hell, Roman, Byz.	Czichon, 2008:188

The table 6.6 shows that in the lower parts of Halys most of the continuous settlements were inhabited in Hellenistic period. Especially settlements founded in the EBA were used continuously until the Roman and Medieval periods. Settlements with Hellenistic origins were situated on hilltop and slopes (Figure 6.11).

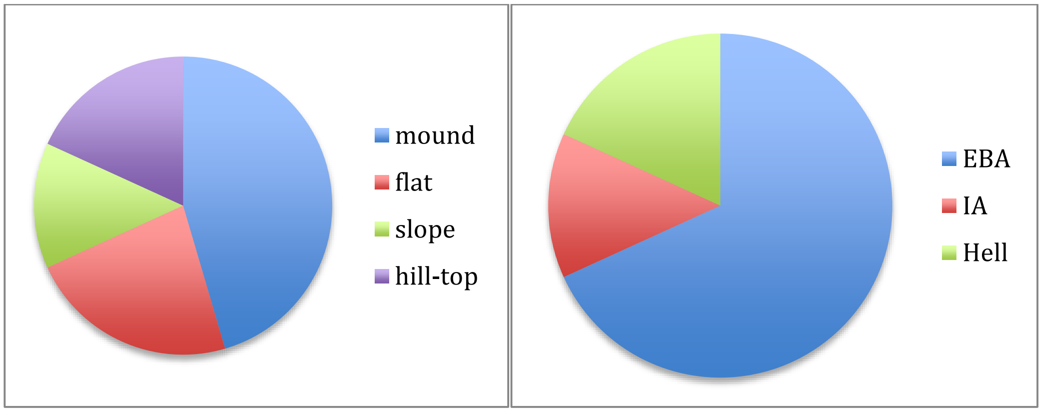


Figure 6.11 Site continuity and preference in the Lower Halys Valley

Phazemon was as big as a village in the Hellenistic period. The settlement was given city status by Pompey and named as Neapolis (Strabo, XII.3.38). Excavations in Oymaağaç suggested that Phazemon may be represented in one of the layers of the mound. Another suggestion is that, Vezirköprü was called Phazemon in the Hellenistic period. The Hellenistic period necropolis unearthed in excavations in Oymaağaç and coins dated to reign of Mithradates VI found there suggest that Oymaağaç may be the necropolis of Phazemon.[183] The Sagylion fortress dominated the region and gazed at the settlements including Oymaağaç.[184] The Lower Halys region was under the control of the Asarkale, Kapıkaya, Tependeliği, Sagylion, Pimolisa, and Asarkaya fortresses. The Asarkale, Kapıkaya, and Tependeliği fortresses protected the steep and narrow valley where the Halys met the Black Sea and must also have controlled river transport to the hinterland (Figure 6.12.).

[183] http://www.nerik.de/downloads/Oymaagac_2009_Nerik_Raporu_2009.pdf.
[184] For detailed information about the Sagylion, see the catalogue.

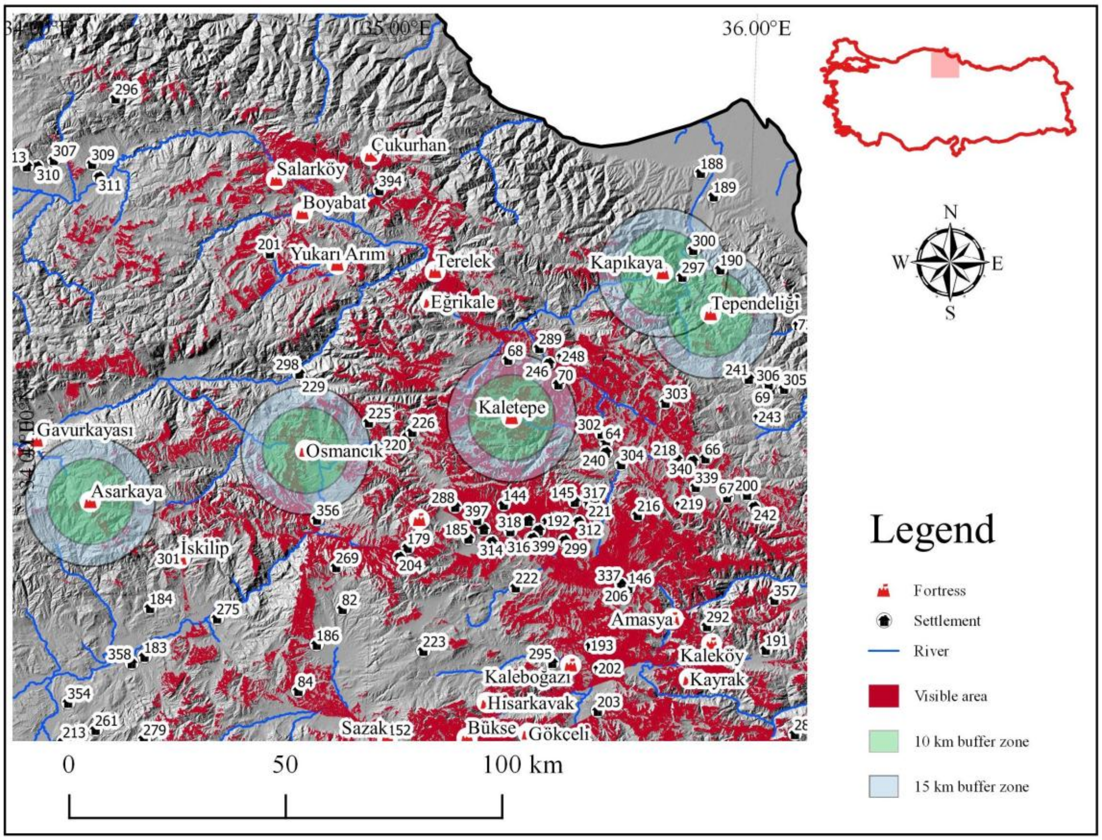


Figure 6.12 The Lower Halys Valley, Fortress-Settlement Relationships

Until recently, river transport was the most convenient way to transport various products (rice, roof tiles, lime) between Bafra and villages in the hinterland (Akkan, 1962: 266). This route goes in Vezirköprü and to a place called Çeltek Bridge. This bridge stands on the remains of the ancient bridge Anderson saw in Çeltek to the west of a boatyard (Anderson, 1903: 85). The connection between Vezirköprü and Bafra was enabled in the cheapest possible way by river transportation. This connection must have been used most effectively in antiquity.

Since no archaeological surveys have been done in the Pimolisa and Asarkaya region, there is no information regarding settlement distribution there.

6.2.4. The Scylax Valley System

The Scylax (Çekerek), a branch of the Iris, forms the southern limit of Zelitis. To the southwest, the country was separated from Galatia by the watershed between the Scylax and the basin of the lower Halys. We know from the Strabo that the Galatian Trocmi lived in the west part of the kingdom. Strobel claims that western border of the Pontic territory is formed by this nation. Ancient sources suggest that the kingdom had built fortresses to protect its western borders (Strabo, XII.5.1; Magie 1950: 198). Gerdekkaya and Muratkolu fortresses are two of them. Strobel notes that the south end of the Mithradatic kingdom reaches the area that includes Gerdekkaya. Gerdekkaya must have been one of the border fortress (Strobel 1997:146-48).

Archaeological studies in the Scylax (Çekerek) region were primarily aimed at understanding it as the core Hittite region (Hamilton, 1842). Archaeological and linguistic research that has started from the first half of 20th century provided significant insights about history of the area. In the 90s archaeological surveys were initiated by Süel, and then, starting in 1996, Sipahi and Yıldırım continued the research intermittently until 2012. As suggested by Erciyas, the finds from the archaeological surveys provide no detail (Erciyas, 2006: 55). In their research aiming to understand the Hittite impact, the surveyors chose to generalize their assessment of later periods and their archaeological data. After interviews with the surveyors, I concluded that the ceramics include the Roman and Hellenistic periods.[185] Here are the results from the interviews with the surveyors (Table 6.7):

[185] Erciyas emphasizes that the challenges resulting from the fact that the period defined as Classical corresponds to the period between the Iron Age and the Roman period in archaeological surveys, which prevents understanding periods such as Achaemenid and Hellenistic which still remain undefined for Black Sea archaeology (Erciyas, 2006: 56).

Table 6.7 Settlements in the Scylax Valley

Sett. Id	Sett. Name	Sett. Type	Periods	Surveyor
8	Murat kolu	Hill-top	IA, Hell, Roman	Sipahi, 2003: 275
9	Gerdekkaya	Slope	IA, Hell, Roman, Byz	Sökmen
72	Örükaya	Flat	Hell	Süel, 1990: 342
74	Çöplü	Mound	EBA, II.Mill, IA, Hell, Roman	Süel, 1990: 343
75	Bozdoğan	Mound	II.Mil, IA, Hell, Roman	Süel, 1990: 344
76	Zindankuyu	Slope	EBA, Hell, Roman	Süel, 1990: 344
77	Tombultepe	Mound	EBA, II. Mill, IA, Hell, Roman	Süel, 1990: 345
78	Kıplanpınarı	Slope	EBA, II. Mill, Hell, Roman	Süel, 1991: 92
79	Mercantepe	Mound	EBA, II. Mill, IA, Hell, Roman	Süel, 1990: 345
80	Hışır	Mound	EBA, IA, Hell, Roman	Süel, 1991: 94
81	Akpınar	Mound	II.Mil, IA, Hell	Çorum Müz. Env.
82	Hamamtepe	Mound	Hell, Roman	Sipahi &Yıldırım, 1998: 22
84	Toptepe	Mound	EBA, IA, Hell	Yıldırım, Sipahi, 1999: 434
152	Gümüşlükaya	Flat	IA, Hell, Roman, Byz	Sipahi, Yıldırım, 2005: 308
167	Kalecik	Hill-top	IA, Hell, Byz	Çorum Müz. Env.
183	Atoluğuntepe	Mound	Hell, Roman	Sipahi, Yıldırım, 1998: 25
184	Külhöyük	Mound	EBA,IA, Hell, Roman	Sipahi, Yıldırım, 1998: 27
186	Serçetepe	Mound	IA, Hell, Roman	Sipahi, Yıldırım, 1998: 23
194	Yeşilyurt	Slope	Hell, Roman	Sipahi, Yıldırım, 2000: 33

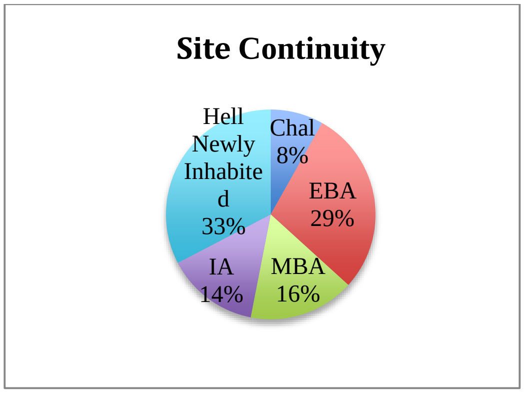
Table 6.7 (continued)

197	Büyükkale	Hill-top	MBA, IA, Hell	Schahner, 2015
213	Minehasan mevki	Flat	Hell, Roman	Sipahi, Yıldırım, 2001: 102
217	Hacılarhanı	Slope	II.Mill, IA, Hell	Çorum Müz. Env.
223	Elvançelebi	Mound	EBA, II. Mill, IA, Hell, Medieval	Yıldırım, Sipahi, 2004: 309
224	Göller Mevkii	Slope	Hell, Roman	Sipahi, Yıldırım, 2008: 283
225	Öbektaş	Hill-top	IA, Hell	Sipahi, Yıldırım, 2008: 284
229	Aşıkbükü	Flat	Hell	Yıldırım, Sipahi, 2009: 99
233	Gökören	Mound	II.Mill, IA, Hell	Yıldırım, Sipahi, 2011: 39
234	Çiçeklikeller	Slope	Hell, Roman	Yıldırım, Sipahi, 2011: 44
235	Dayıncak	Slope	Hell	Yıldırım, Sipahi, 2011: 46
239	Soğucak	Hill-top	Hell, Roman	Sipahi, Yıldırım, 2012: 205
258	Kalehisar	Hill-top	II. Mill, IA, Hell, Medieval	Çorum Müz. Env.
261	Harmanyeri	Slope	Hell, Roman	Yıldırım, Sipahi, 2009: 92
262	Demircihöyük	Mound	II.Mill, IA, Hell, Roman	Süel, 1990: 342
263	Kaletepe Höyük	Mound	EBA, II. Mill, IA, Hell, Medieval	Çorum Müz. Env.
264	Güvendikkale	Mound	Chal, EBA, II. Mill, IA, Hell, Roman	Çorum Müz. Env.
265	Pazarlı	Mound	Chal, EBA, II. Mill, IA, Hell, Roman	Çorum Müz. Env.
266	Kalınkaya	Mound	Chal, EBA, II. Mill, IA, Hell, Roman	Çorum Müz. Env.
270	Rızanıntepe	Mound	EBA, Hell, Roman	Çorum Müz. Env.
272	Kızıllı	Mound	EBA, II. Mill, Hell, Roman	Süel, 1991: 94

Table 6.7 (continued)

273	Hoca Sultantepe	Mound	II.Mill, IA, Hell	Çorum Müz. Env.
274	Emirler Kalesi	Hill-top	Hell, Medieval	Çorum Müz. Env.
276	Mahmatlı	Hill-top	Chal, EBA, II. Mill, IA, Hell, Roman	Yıldırım, Sipahi, 1999: 435
278	Kemallı	Mound	II. Mill, Hell	Sipahi, Yıldırım, 2001: 104
279	Güneşkayası	Slope	IA, Hell, Roman	Sipahi, Yıldırım, 2001: 103
298	Erenler Tepesi	Hill-top	IA, Hell	Yıldırım, Sipahi, 2009: 99
301	İskilip	Hill-top	Hell, Roman	Çorum Müz. Env.
342	Kalekaratepesi	Hill-top	Hell	Sipahi, 2003: 277
344	Kaleboynu	Slope	EBA, IA, Hell	Yıldırım, Sipahi, 1999: 437
356	Kurbantepe	Flat	Hell, Roman	Sipahi, Yıldırım, 1998: 22
358	Tümbektepe	Hill-top	Hell, Roman	Sipahi, Yıldırım, 1998: 24
401	Eskiyapar	Mound	EBA, II.Mill, IA, Hell, Roman, Byz	Sipahi, 2013: 47

The area between the Scylax and Halys rivers was inhabited continuously. Mound type settlements were also occupied in the Hellenistic period. In the Hellenistic period, 33% of the settlements were newly established, while 67% of the settlements were inhabited in the previous period. Most of the settlements were situated on hilltops and slopes (Figure 6.13).



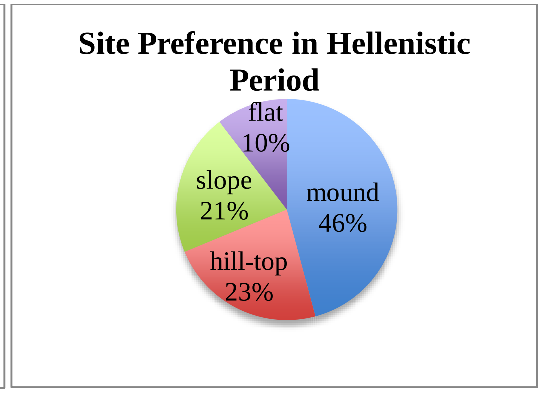


Figure 6.13 Site Continuity and Site Preference in the Scylax Valley

It is difficult to associate settlements with the fortresses situated between Halys and Scylax Rivers and the settlements along the Scylax. As a matter of fact, settlements were discovered by surveys in the north part of Çorum, but no fortresses were detected. Fortresses were mainly distributed in the Göynücek Valley, the İncesu Valley and the Upper Scylax; however, the distribution of settlements is weak. No archaeological surveys have been initiated in the Upper Scylax and the surroundings of the Kunduz, Ermelik, Pleuramis, Kızlarkayası fortresses. Settlement density is known around the Gerdekkaya and Murat Kolu fortresses since surveys were conducted there (Figure 6.14). These settlements were within the visibility coverage of the fortresses and were possibly neighboring Galatia.[186]

[186] As noted, when considering the assumption that Gerdekkaya was Mithradation fortress, Strobel suggests that Mithradation was a border post between Galatia and the Mithradatic kingdom.

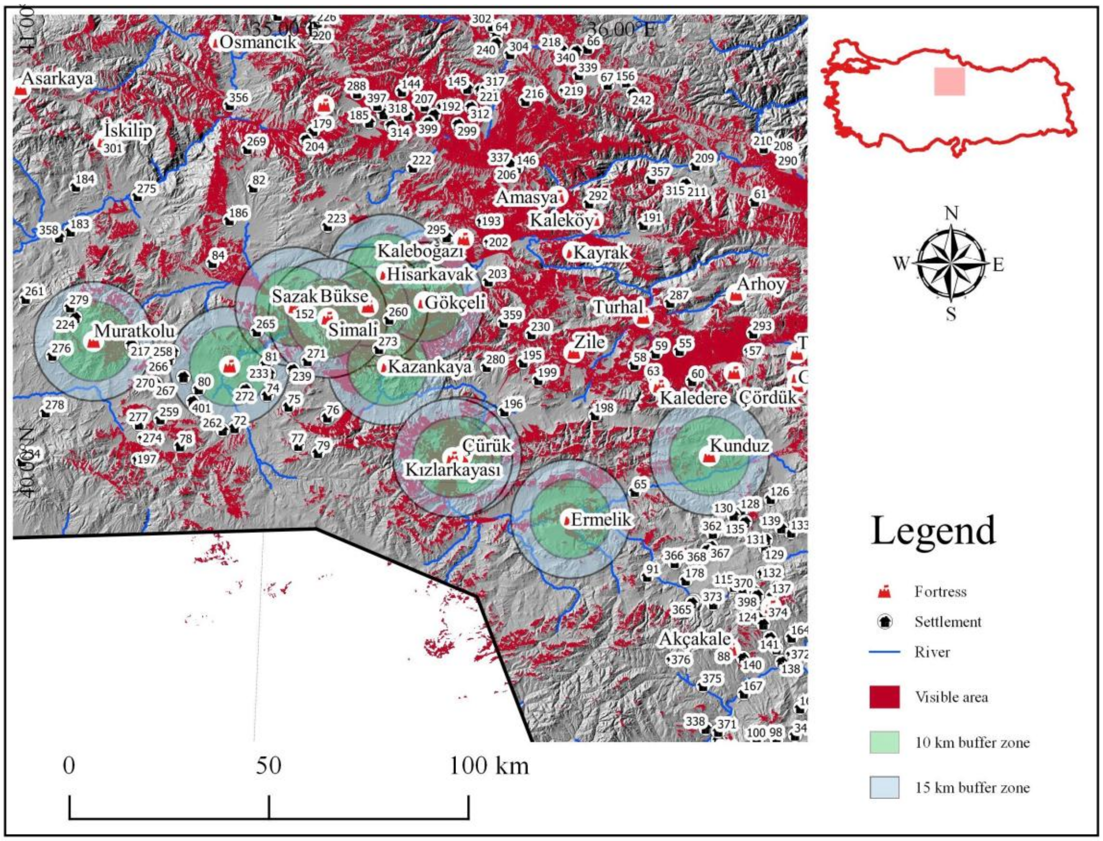


Figure 6.14 Distribution of settlements and fortresses in the Scylax Valley

6.2.5. Amnias Valley System

The Amnias (Gökırmak) River is a branch of the Halys. It flows into a wide valley formed by the Pontic Mountains. Little research has been conducted there, but a few scholars have offered insight about it. von Gall compared the fortresses and rock graves distributed throughout the Amnias Valley (1966: 116), and French documented milestones and Roman roads (1985, 1992). Marek summarized and discussed its historical geography (1993), and Matthews and Glatz recorded Paphlagonia by means of archaeological surveys for the first time (2009). Then Laflı carried out a survey and excavation at Hadrianopolis (2007, 2009) and, Summerer studied the territorium of Pompeiopolis and started an excavation (2012). A doctoral dissertation by Johnson also provides an extensive historical and archaeological overview (2010).

The Amnias Valley can be regarded as the hearthland of Paphlagonia. One of the settlements mentioned with the establishment of the Mithradatic kingdom is also in this area. This area is important not only because it hosts Cimiata, but also because it was under the kingdom's control during the reign of Mithradates VI (Strabo, XII.3.9, 40).

There are various opinions on the current location of the fortress that is referred to as Cimiata by Strabo and was established by Mithradates Ctistes. Strabo stated that the fortress was lying beneath the massif of Olygassys Mountain (Ilgaz) (Strabo XII.3.41; Marek 1993: 123-4). According to inscriptions found nearby, Cimiata should be Asartepe near the late Roman city, Hadrianopolis (Kaygusuz, 1984: 69). Kaygusuz evaluated about 16 inscriptions and provided information about Cimista and Cimistene. These inscriptions revealed that the name of the settlement was misspelled by Strabo as Cimiata and that it was actually Cimista in the Cimistene region.[187] Kaygusuz also proposed that the Kurmalar settlement near Ilgaz was where Cimista was located. Kurmalar is a hill-top settlement that overlooks the valley of Devrez. The settlement has pottery ranging in date from the seventh century BCE to the third century CE. Matthews' survey project supports the possibility that Asartepe is Cimista according to topographical and architectural elements. Asartepe has a prevailing position to the landscape. It has a range of visibility that can control north-south and east-west routes. The fortress was built on a rocky outcrop and the slopes was carved in places for terracing (Matthews, 2004: 207).

Matthews, who conducted an intensive survey of the region, thinks that Asartepe is Cimiata/Cimista in Cimistene (Matthews, 2004: 206). He also suggested that the fortress was used as a base for the military actions of Mithradates Ctistes during the early period of the kingdom. Another researcher who worked in the region, Laflı, described the Asartepe settlement's acropolis, cistern and two cemeteries (Laflı, 2007: 52). At the northern end of the acropolis the team identified a tumulus and a Roman temple and reported that the temenos was destroyed by illegal excavations. Moreover, they stated

[187] Leonhard briefly describes Asartepe as the fortress in Samail (Leonhard, 1915: 146).

that on the east of the temenos, on the altar and the rock, inside the tabula ansatae, there is an inscription dedicated to Demeter and Kore.

The Paphlagonia Survey Project revealed many settlements in the area, which are listed as an appendix in the book by Matthews and Glatz (2009). In addition, Johnson reviewed all the literature about the settlements in the area in her dissertation (2010: 305-419). Here I list only the settlements in the Amnias Valley in order to identify the settlements around the fortresses (Table 6.8):

Table 6.8 Settlements in the Amnias Valley

Sett. Id	Settlement	Type	Periods	Surveyor
310	Yüklütepe	Flat	IA, Hell	Johnson, 2010: 329
296	Türbetepe	Mound	MBA, LBA, IA, Hell	Johnson, 2010: 320
307	Bademci	Slope	Hell, Roman, Byz.	Johnson, 2010: 335
309	AygırKayası	Hill-top	Hell	Johnson, 2010: 334
311	Ağcıkisi	Flat	Hell?, Roman?	Johnson, 2010: 328
313	Çöpçöp kayası	Hill-top	Hell, Roman	Johnson, 2010: 335
394	Dodurga	Slope	Hell, Roman	French, 1992: 150

We should thank Johnson for her work. The settlements around the fortresses are either secondary fortress or settlements that hosted rock-cut tombs. Yüklütepe was as an inhabited fortified settlement since the Middle Bronze Age (Johnson, 2010: 65). This settlement probably controlled Bademci and Çöpçöp Kayası. Its position would also have allowed it to interact with the Donalar fortress. According to Johnson, it also controlled transportation to the mining areas in Küre and Devrakani (2010: 65). The Bademci and Çöpçöp Kayası settlements were overlooked by Yüklütepe, which was on a terrace and hosted rock-cut tombs (Johnson, 2010: 335). Aygırkaya is another settlement located near the Donalar fortress. Lastly, Ağcıkişi is probably the place where the battle between Mithradates VI and Nicomedes occurred according to Johnson, who cited Fourcade as support for this idea (Johnson, 2010: 328).

No settlements have been identified around the other fortresses. Only the Dodurga settlement is worth mentioning. In addition to the pottery distribution determined on a hillside there, a bust carved from the front was recorded by French. He noted that this monument is related with a funerary and belonged to the Hellenistic period (French, 1992: 150). French also emphasized that there could be a relation between this monument and the İkesios monument at Laçin in Çorum (French, 1985: 143). This monument can be thought of as an honorary monument, since it is thought that the Ikesios monument belongs to a commander of Mithradates VI.

There are fortresses on the ridges that face the Amnias Valley commanding the surrounding landscape and controlling the east-west route (Figure 6.15).[188] The ones in Donalar, Salarköy and Terelik also have rock-cut tombs with impressive façades. These amalgamated structures with rock-cut tombs may have belonged to the fortress commanders or local chiefs. The tombs bear iconographic traces of the Achaemenids.[189]

[188] Summerer's archaeological survey in 2008 observed the ruins of the fortresses and found an abundance of pottery sherds (2010: 219 fn. 14).
[189] Bull or bull/man type capitals of the tombs are known from Achaemenid architecture. Another example can be found in Darius' Susa palace (Summerer, 2010: 203-212; von Gall, 1966: 116-19).

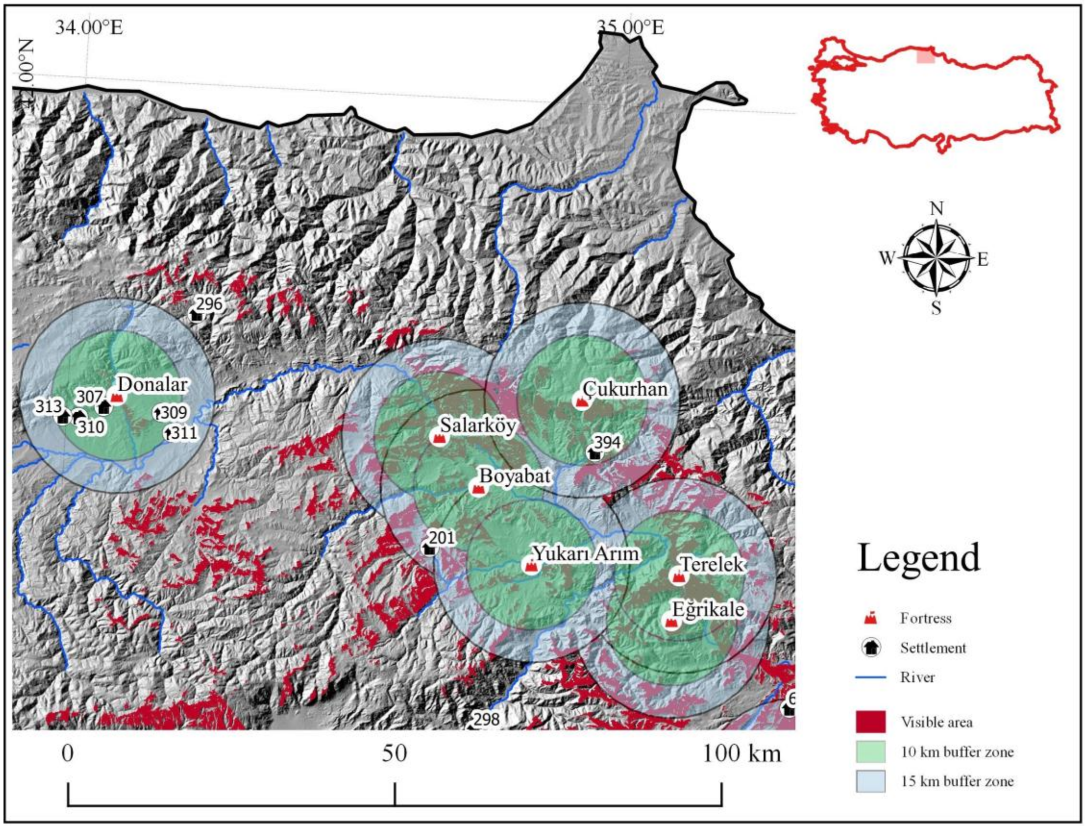


Figure 6.15 The Amnias Valley; Fortress and Settlements

6.2.6. Northeast Coast

Despite my dissertation's focus on the hinterland of Pontos, the fortresses in Ordu should also be evaluated because of their possible contribution to this work. Two of the fortresses have been excavated. On the coastline of the kingdom, one can hardly say that archaeological surveys are in progress. Özsait made several surveys from the Ordu frontier to Kelkit Valley. In 2010, excavations were started in Kurul Kayası. In 2011, Erol did research focusing on the fortress before starting to excavate the Cıngırt Kayası. Coins dated to the reign of Mithradates VI, pottery sherds from the Hellenistic period and fortification walls were found in the fortress (Erol, 2012: 189).[190] There are four

[190] In the rock shelters found on the skirts of Cıngırt Kayası traces of Paleolithic period were found. The fortress was inhabited from Iron Age until Byzantine period (Erol, 2012: 183-191).

fortresses in this area east of Themiscyra, the home of Sidene, which has fertile soil derived from the Sidenos (Bolaman) River (Strabo, XII.3.7). Here are the few identified settlements from the Hellenistic period (Table 6.9):

Table 6.9 Settlements in the coastal area

Sett. Id	Name	Sett. Type	Periods
170	Kaleköy	Hill-top	Hell, Medieval
254	Gençağakalesi	Hill-top	Hell, Roman, Medieval
257	Kaleönü	Hill-top	Hell

Rather mountainous topography must have posed a problem for settlements and transportation. The recorded settlements were on the hill-tops (Table 6.9). The fortresses of Chabakta[191], Kurul and Cıngırt were situated at the entrance of the valleys extending to the hinterland and probably controlled the traffic from the coastline to the hinterland (Figure 6.16)

[191] It is located at Kaleköy (Olshausen and Biller, 1984, 120; Wilson, 1960: 199).

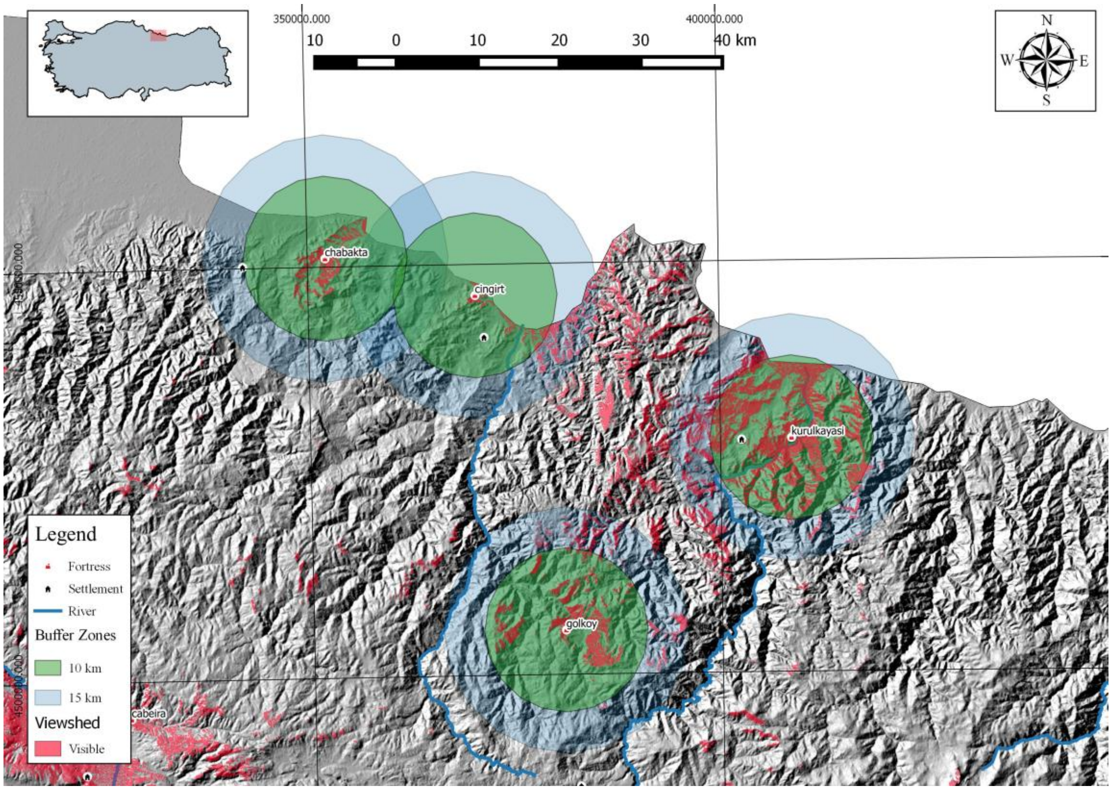


Figure 6.16 Settlements and Fortresses on the Northeastern Coast of the Kingdom

6.2.7. The Hellenic Heritage of the Kingdom: Cities on the Coast

It is clear that Greek types of cities were entirely lacking in the inner Pontos. However, the situation in the settlements on the coasts was quite different. By the seventh century, Greek culture began to manifest itself on the Black Sea coast. Colonization of the Black Sea became the focus of interest in the seventh century with the development of navigation and the use of penteconters. The first colonies included Sinope and Amisus, and these colonies were established in the last quarter of the seventh century at the latest by Miletos.

Graeves argues that the impetus behind the establishment of colonies by Milesians was overpopulation. Even though Greek cities tried to come forward in order to be trading powers, the colonization was triggered by “land hunger or just hunger” (2007: 17-20).

The small scale trade between colonists who were searching for new homelands and agricultural areas and the local people later became an organized commercial activity. Trade in the Black Sea was not the cause of colonization but its result.

The commercial activities of the Greeks formed a network that extended to the furthest corners of the Black Sea. Trading stations connected to mother cities were transporting grain, timber and metals, the main commodities from the Black Sea. Transporting them to the mother city through these ports was easier. These ports later became poleis. By means of roads reaching to the valleys through the Pontic Mountains vertically and to the hinterland, the wealth of the Pontos was first reaching these cities and then traded in the Aegean. The most prominent colonies were Sinope and Amisus, and the Mithradatids had always attempted to win these two cities.

The main point behind the inclusion of the cities of Sinope and Amisus in the borders of the kingdom was that they enabled the establishment of a Mithradatic fleet (Strabo, XII.3.12). Easy access to raw materials (timber) from the hinterlands became possible for these cities.[192]

Timber was essential to fortresses for catapults and other types of siege engines. Hannestad quoted from Polybius' account (4.52) of the war treaty between Byzantion and the Rhodians and Prusias in Bithynia: Prusias must return to the Byzantines all lands, forts, populations, prisoners of war, the ships taken at the beginning of the war, the weapons seized in the fortresses, and the timbers, stone-work and roofing belonging to the fort called Hieron (Hannestad, 2007: 96).

[192] Sinope was rich in timber, but it was known as the shipyard of Mithradates in the region of Colchis (Strabo, XI.2.18).

Sinope

The settlement at Sinope is located on a peninsula between the northeastern corner of the promontory and Boztepe. The city on the coast was isolated by the Pontic Mountains and had a secure port. Sinope, which hosted the seventh century BCE Milesian colony, maintained its strong economical ties with the mother city for a long time (Doonan, 2006: 52).[193] Sinope was the city in which the earliest coins were found. It is thought that these coins, which have characteristic images of the Archaic period of the sixth to fifth centuries, came from colonist cities dominating the coasts of the Black Sea, especially from Miletos (Erciyas, 2006: 31). In the fifth to fourth centuries, the city actively minted coins that have very different depictions (Erciyas, 2006: 34). Another important coin that was found in Sinope belonged to King Ariarathes I of Cappadocia on which the name Ariourat was written in Aramaic. This coin is perhaps an indicator of the king's expansionist overreach to the coast (Erciyas, 2006: 32).[194]

The excavations in Sinope were continued by Akurgal and Budde in the 1950s. These excavations found pottery that originated from the Aegean dating to end of the seventh century. Other trenches provided data sheds light on the inhabitation of the city from then to the present. The remains dated to the Hellenistic period are the Hellenistic Serapeion temple foundation[195] and the city walls (Akurgal, 1956: 51-9). There are also amphora production workshops dating to the third century in Nisiköy and Zeytinlik (Garlan and Tatlıcan, 1997: 338). The amphorae were produced in these workshops and dispersed to various cities of the Black Sea between 370-183 BCE, proving that Sinope was an important amphora producer. Doonan notes that there is a correlation between

[193] Doonan states that, even though things began to be complicated in Sinope with the presence of Persian power became evident from the east of Pontos in the period which the Greek ties were strong, the beginning of amphora production in Boztepe points to the continuity of commercial activities (Doonan, 2006: 52).

[194] A similar coin was found in Gaziuora, which was a fortress (Erciyas, 2006: 32).

[195] It was identified as Serapeion an d dated to the second century BCE by Budde (Akurgal and Budde, 1956: 27-32). Summerer reviewed the debates regarding why and for which cult the temple was constructed (Summerer, 2014: 195-6).

the production of amphora and the development of olive oil industry.[196] With the increased production, the population also grows (Doonan, 2006: 52). Additionally, the settlements and tumuli found around Sinope that are thought to be from Hellenistic period reveal the density of settlements in this period (Akurgal, 1956: 51-9; Doonan, 2009: 72). During his surveys in the hinterland of Sinope, Doonan discovered tumuli dated to the Hellenistic period (Doonan 2004: 82-7). He thinks that they have an ancestral continuity and constitute a sacred landscape (Doonan, 2009: 77).

Sinope, which was founded as a colony, increased its wealth and power and established her own colonies—Cotyora, Cerasus and Trapezus—on the east coast of the Black Sea. Sinope earned its wealth as a trade port. Due to its of its commercial supremacy and its strategic position as a base for the Pontic navy, Sinope was considered by the kings to be of great importance. The attempt of Mithradates II to capture Sinope in 220 BCE failed due to ammunition aid from Rhodos, an ally of Sinope (Polybius, Hist. IV.56). Pharnaces I captured Sinope in 183 BCE and surrounded it with city walls (Polybius, Hist. XXIV.10). By this period, Sinope had become a part of the economical and cultural life of the Mithradatic kingdom such that, after a while there was a shift from Amaseia, the heart and capital of the kingdom, to Sinope, and the royal cemetery was moved to Sinope.

Amisus

Amisus was a settlement established by Milesians in about the middle of the sixth century BCE.[197] Subsequently, it became an Athenian colony and took name of Peiraieus (Strabo, XII.3.14). The settlement was situated on a low plateau hosting alluvial plains watered by the Halys and the Iris. It flourished into a polis as a commercial hub. The trade route on the north-south axis from the inner Pontos carried

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[196] The ancient sources mention intensive olive cultivation in the region extending from Amastris in the west to Trapezus in the east (Greaves, 2002: 27).

[197] Strabo describes Themiscyra at Amisus as a place where Amazons live (XII.3.9). At the same time, he states that Cappadocian Leuco-Syrians were also living there (XII.3.9).

timber, steel and iron from the district of the Chalybes to the port of Amisus.

Silver drachms minted in the fourth to fifth centuries BCE are an indication of the trade that city carried out with Aegean and inland countries (Erciyas, 2006: 32). The fact that 60-70% of the coin minting carried out by Amisus (Højte, 2005: 98) reveals the extent of the city's trade. Amisus was a maritime city during Mithradatic rule. Amisus was the port at the end of the artery of commerce starting in Cilicia through Pontic Cappadocia and crossing to Amaseia (McGing, 1986: 4). It was an important slave market during the Hellenistic period along with Sinope. Avram identified some slaves who were bought from markets in Sinope and Amisus in the Aegean using ancient sources and inscriptions. Avram also thinks that the overland route may have been used to send slaves from the inner Pontos to Aegean markets (Avram, 2007: 246).

A special collection was discovered here and dated to the Hellenistic period. The sealed family tomb chamber with five graves[198] was found during road construction. The tomb, which was located to the east of the Amisus necropolis, contained a rich collection ranging from gold jewelry, metal objects to pottery. This collection was studied carefully by Erciyas (2006: 67-115). The work of arts seem to relate to a complex commercial network. Comparative samples of gold works have iconography and workmanship (centers at the north of Black Sea, coast of Aegean and Eastern Mediterranean)[199] that suggest that these works of art reached Amisus as result of an international trade. The quality of the findings also indicates social complexity. The grave definitely belonged to one of the rich, local and elite families of Amisus (Erciyas, 2006: 113).

Amisus was added to the kingdom's territory during the period of Ariobarzanes. Mithradates Eupator embellished Amisus as a royal residence with temples and public

[198] Two of the graves were unused. The jewelry found was obtained in situ on corpses.

[199] Jackson associated the Amisus collection with other groups of findings from Neapolis in the immediate vicinity of Kavala (Jackson, 2012: 113). He also reports, evolving out of Eros earring, that the Amisus grave was used until the late Hellenistic period (Jackson, 2012: 115).

buildings and added the new suburb named Eupatoria (App. Mithr. 78). The city was destroyed by Lucullus during the Third Mithradatic War. The city was more important than Sinope for the royalty as a commercial gateway to the inner Pontos. Timber, iron, pottery and food from the inner Pontos were exported from there by sea, and materials imported to the Pontos were easily carried to inner settlements from Amisus' harbor on the Halys River.

6.3. General Overview

The archaeological data that served as the basis for this chapter comes from survey reports. A certain degree of inconsistency and lack of comprehensiveness in understanding the settlement distribution in its entirety is to be expected due to the different research teams' research methods and goals. Surveys that were period- and site-focused prevented some settlements to be recorded as dated to the Hellenistic period. In addition, the identification of the ceramic data in a manner encompassing a wide spectrum of time[200] (often including periods from the Iron Age up to the Roman period) by the research teams investigating earlier periods of the region prevented us from wholly understanding the period of our focus.

Communities in the Mithradatic kingdom's frequently chose hilltops and sloping morphologies, they also made use of höyük settlements that were strategically located and close to water sources. Newly founded settlements were located on slopes of valleys and hilltops due to security and defensive concerns. Warfare, frequent unrest and almost 30-year long war between Mithradates and Rome in Anatolia during the Hellenistic period were decisive factors in determining settlement choices.

It is very hard to claim a homogeneous relationship between settlements and fortresses due to the unsystematic collection of data from surveys. It is easy to see when we look at the distribution of settlements on the map that we do not yet have the complete picture.

[200] Erciyas made necessary criticisms regarding this point (2006: 56).

Better results were obtained when we used topographical factors (such as valleys and plains) and used groupings rather than investigating individual settlements' relationships with individual fortresses. Fortresses were frequently placed at the edges of arable plains, suggesting a concern with the surveillance of agricultural land. The settlements associated with fortresses are most likely to lie in the valleys or plains below them. This relationship is explained in the analysis section. Although it was not the case for the settlements, the fortresses were built systematically by the rulers. Rural communities conducted agricultural activities in valleys and plains secured by the fortresses that overlooked them.

As stated before, organization of the Mithradatic kingdom was complicated and full of obscure points. The lack of Greek style urbanization affected the structure of communities in different ways. Rural communities, the basis of the kingdom, were formed around temple states ruled by priests who were appointed by the king and scattered throughout valleys and plains protected by fortresses commanded by generals who served the king. All communities within the kingdom's territory belonged to the king. By stating that Murena invaded 400 villages belonging to Mithradates in the area of Zelitis, Appian reveals that this land was in possession of the king (App. Mithr. 65). The coast was a different matter. By obtaining the old coastal Greek colonies of Sinope and Amisus, the kingdom was introduced to urbanization, and these cities served as gateways to the sea. These cities were promoted by the kings, and the capital was even moved to Sinope in 180 BCE. The dynasty appears to have been keen to promote urbanization by establishing new urban centers as Eupatoria.

It is not hard to deduce that the kingdom had organized an economic system here, when the site distribution is contemplated in its entirety. With this in mind, the structure of the organization of production, distribution and transportation can be explained: the rural country in the interior of the kingdom provided agricultural production and the trade and distribution of products were achieved by means of organizing festivals in the temple states. By way of coastal cities, products were able be transported internationally. When all this is considered, the importance of rural communities for the economy of the kingdom is revealed to be immense.

Therefore, the backbone of the kingdom’s economy was agricultural activity in rural communities. The Mithradatic kingdom had fertile plains that were watered by the Iris River, and Phanaroia, Dazimonitis and Chiliocomon were the plains where the kingdom earned its wealth. Pontic communities were also housed there in a scattered manner. With all of these data and conclusions in mind, it can be said with great certainty that fortresses were indispensable assets in the protection of of community life and agricultural land.

CHAPTER 7

ANALYSING THE FORTRESSES WITHIN THE PONTIC LANDSCAPE

7.1.Introduction

In this chapter, the importance of the fortresses in discourse of the administrative and military policies of the Kingdom, which derived form ancient sources, will be evaluated on their topographical locations. The site selections and their mutual relationships with their surroundings suggested a fundamental differentiation in terms of their functions. In this context, the analysis infrastructure offered by GIS made it possible to evaluate the fortresses from different aspects, by allowing us to effectively study the network of relationships that are based on the fortresses.

Ancient structures and settlements were not distributed in the landscape in a random manner. Past communities chose locations to build structures and settlements by observing environmental, socioeconomic and political necessities. Site selection and its close bond with environmental factors are one of the key themes of archaeological research. This relation can be explained by variables such as topography (e.g., elevation, slope), distance to natural resources, geological formations and vegetation.

GIS became an efficient tool for the investigation of people-environment relations in the last ten years. It provides effective results in evaluating a large number of features in both small and regional scales. GIS in archaeology is much more than just the creation of aesthetically pleasing maps. Instead, it has a strong analytical role to offer. Care must be taken, however, that just because we can do something in GIS we do not start letting it define what should be done (Ebert, 2004: 320).

The distribution of the fortresses and settlement in the Pontos should be considered under natural and cultural constraints. Fortresses are a subject of landscape archaeology with their mutual relationships with the surrounding environment and its physical features (Farinetti, 2011: 259).

7.2. How GIS Helps

This chapter is intended to reveal relationships between fortresses and settlements and their surroundings based on environmental parameters. To obtain information about Hellenistic period Pontic defense units and settlements, GIS was used for investigating the relations between them and the physical environment. Through visualization with GIS, relationships between the topography and fortresses scattered in the landscape were effectively illustrated as 'pretty pictures.' GIS functionality offers shortcuts to an analysis of how the landscape was perceived and shaped by humans.

GIS was used as basis for discussing the quantitative relations between the fortresses and physical environment in the study area. The data were evaluated using statistical and topographical parameters. Here are the details:

1. Archaeological data about fortresses and settlements obtained from surveys and reviewing the literature were compared with environmental parameters. These parameters provided much information about the spatial relationships between the fortresses and their environmental settings and between fortresses and settlements. To assess these relationships, data for topographical features (e.g., elevation, ruggedness, slope and aspect), rock type and river network were used. The likelihood of any relationship was investigated using the chi-square test. In addition, the distribution of settlements was compared to the distribution of fortresses.
2. Further spatial analysis of the fortresses was initiated to understand their relationship with their close vicinity (an area delimited by a 15 kilometer radius) and to provide a preliminary classification of their functions. The

terrain ruggedness in this close vicinity was studied in detail. The area visible from each fortress, the amount of arable area and visible arable areas were examined using viewshed analysis.

3. Fortresses' relations to each other with respect to communications were tested in order to explore the signalling based on visibility.
4. The hypothetical path network between fortresses was modeled by using least cost path analysis.

GIS is an important instrument for the effective interpretation of spatial data. However, it is worth noting that this instrument does not provide remedies and solutions for problems with the interpretation of archaeological data. As noted by Lock, GIS logically focuses on data that can be measured, recorded and represented in a computer-aided analysis (Lock, 1995: 16). Therefore, GIS aids in modeling a reality based on a single point of view or interpretation. Data regarding human behavior in the past have more than dimension. Employing GIS to conceptualize the study area will only enable us to make assumptions and conclusions that only represent one particular aspect.

7.2.1. The Study Area (Region)

The study area was defined chapter 1 and it has been framed for GIS analyses using a buffer zone of 30 kilometers around each fortress and settlement since one of the aims of GIS analyses is to compare the archaeological data with the surrounding region. These buffer zones are connected and smoothed to a regular shape in the end (Figure 7.1).

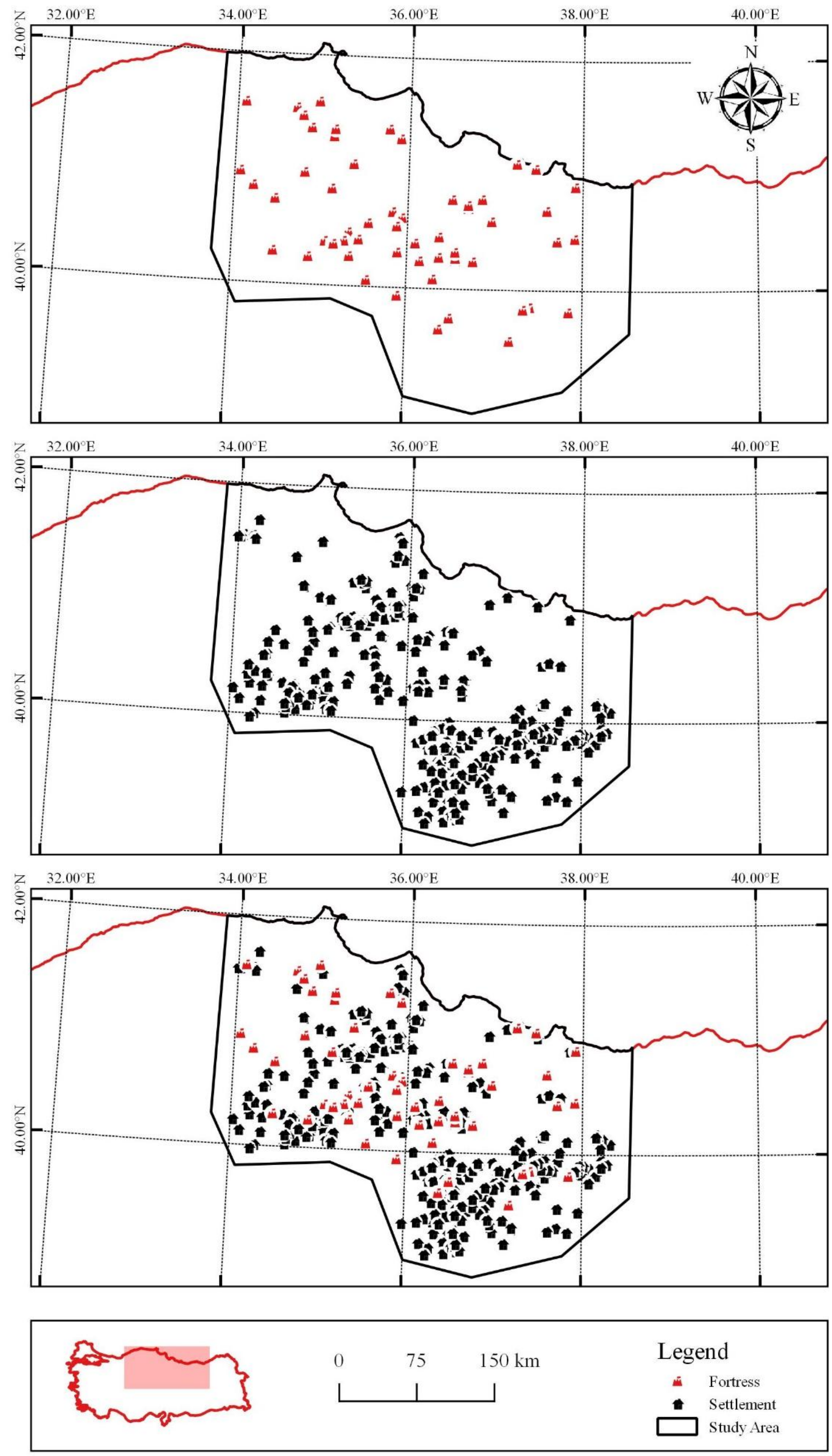


Figure 7.1 Study area for GIS Analysis

7.2.2. Data

The types of data used in this study, sources of data and information on resolutions are summarized in Table 7.1.

Table 7.1 TRI classification

Data	Source	Type	Resolution
Fortresses and Settlement Data	Archaeological Survey Reports and Personnal Site Visits	Vector	N/A
Elevation (DEM)	EU Environmental Agency (Hybrid of SRTM and ASTER GDEM)	Raster	25 m
Terrain Ruggedness Index	Derived from DEM	Raster	25 m
Slope	Derived from DEM	Raster	25 m
Aspect	Derived from DEM	Raster	25 m
Lithology	Digitized from MTA geological maps	Vector	1/500,000
Landuse	EU Environmental Agency	Raster	100 m
River	EU Environmental Agency	Vector	1/250,000
Arable Land Map	Corine 2006 (17th updated version)	Raster	100 m
Roman Roads	Barrington Atlas	Vector	1/500,000

Fortress and Settlement Data

A total of 389 sites were considered in this study, including 57 fortresses and 332 settlements. Settlement distribution was evaluated in chapter 6. The location of these settlements was obtained either by field survey or through literature review, surveys initiated in the study area. The Hellenistic period settlements were brought together after meticulously investigating the volumes of the *Araştırma Sonuçları Toplantısı*. After designating the settlements with the help of survey reports, they were indicated on the 1/25,000 scaled topographic maps. The fortresses in the study area were located during visits over a two-year time span. Their point coordinates were determined using a global positioning system (GPS) device. The coordinates were exported and stored in Excel for easy transfer to the GIS database. GIS was used for database generation to aid storing archaeological data consisting of the name and types of the fortresses and settlements, their chronologies, surveys of them and bibliographic information. Lists of the settlements and fortresses are provided in Appendix 2.

Elevation

The topographical data used in GIS analysis usually depends on a model of the terrain. This is called a digital elevation model (DEM) that consists of a large matrix of cells, wherein each cell contains a value approximating the metric elevation above sea level for the space represented by that cell. The digital data in such matrices are known as rasters.

The DEM for this study came from the EU-DEM elevation model provided by European Environment Agency.[201] The EU-DEM is a 3D raster dataset with elevations captured at 1 arc second postings (2.78E-4 degrees) or about every 25 meters in a horizontal direction for our study area and with an overall vertical accuracy of 2.9 meters. It is a hybrid product based on SRTM and ASTER GDEM data fused by a weighted averaging approach. This data was knitted together in order to cover our study region and then cut in accordance with the determined project boundary. The resulting elevation model is shown in Figure 7.2.

The elevation model was used in investigation of topographical properties of the study area and visibility analysis of fortresses. Elevations in the study area vary between 0 and 3,081 meters. The arithmetic mean is 1143.6 meters, and the standard deviation is 475.8 meters. It has a relatively normal distribution (Figure 7.3). Of elevation values, 70% are between 500 and 1,500 meters. Elevation increases towards the southeast of the study area. In the southeast is the pass from northern Anatolia to eastern Anatolia.

[201] http://www.eea.europa.eu/data-and-maps/data/eu-dem#tab-metadata.

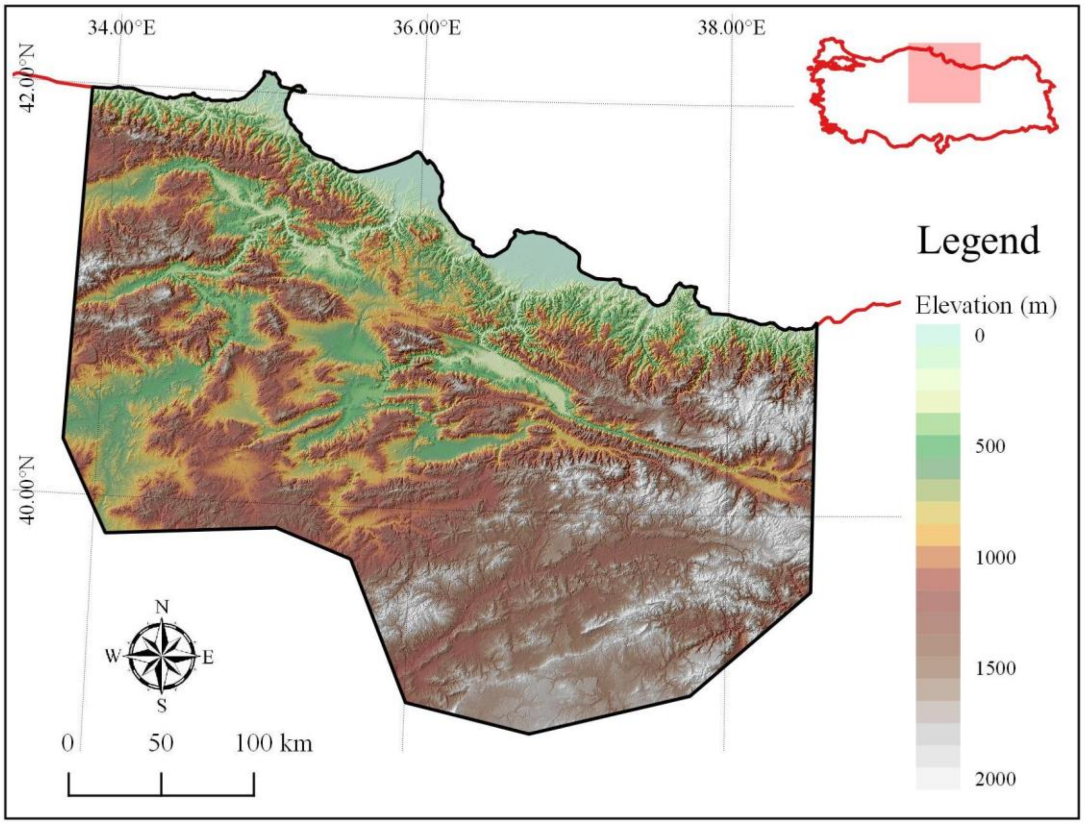


Figure 7.2 Elevation map of the study area

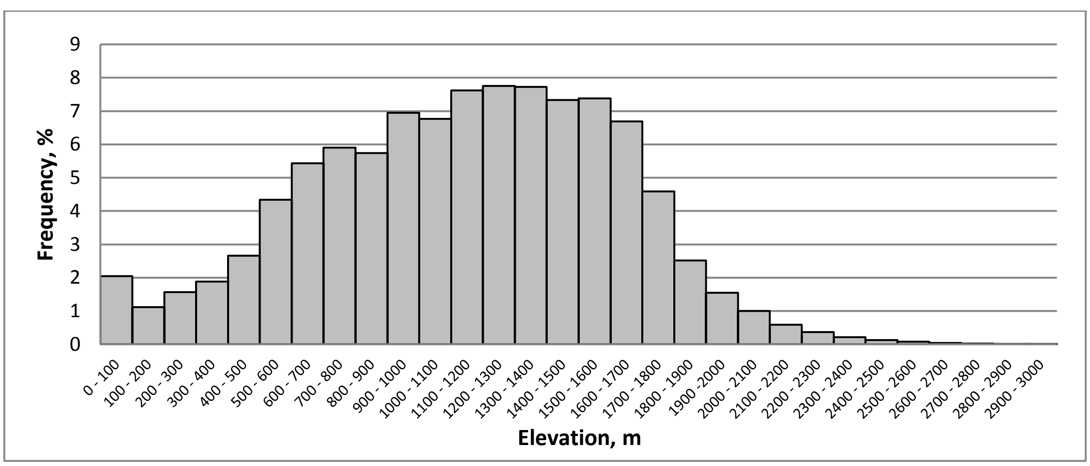


Figure 7.3 Elevation histogram of the study area

Terrain Ruggedness Index (TRI)

The terrain ruggedness parameter represents changes in altitude in mathematical terms (Riley et al., 1999: 1). It allows objective description of the terrain. The TRI displays the difference in values between each raster cell and its surrounding raster cells (Equation 7.1).

Equation 7.1. Base formula of terrain ruggedness model used in the analysis

-1,-1	0,-1	1,-1
-1,0	0,0	1,0
-1,1	0,1	1,1

$$TRI = Y\left[\sum \left(x_{ij} - x_{00}\right)^2\right]^{1/2}$$

where x_{ij} = elevation of each neighbour cell to cell (0,0)

In this study, TRI values were calculated for every location such that each TRI values indicate the change in elevation within a 5x5 pixel grid, covering an average fortress area (125 meters x 125 meters). Lower index values represent smoother terrain, while higher values represent rugged terrain. The histogram of the TRI map is shown in Figure 7.4. TRI values in the region range from 0 to 45 meters. Around 85 % of the study area has less than 10 meters of TRI in an area of 125 meters by 125 meters. Few TRI values greater than 25 meters were observed.

In order to understand the terrain heterogeneity in the study area, the TRI values are classified into three groups using Riley's equal area method (1999). The TRI ranges of each group are shown in Table 7.2, and the final TRI map is shown in Figure 7.5. Photos of a fortress from each group are also shown in Figure 7.6 to give a sense of the different terrain ruggednesses of their locations.

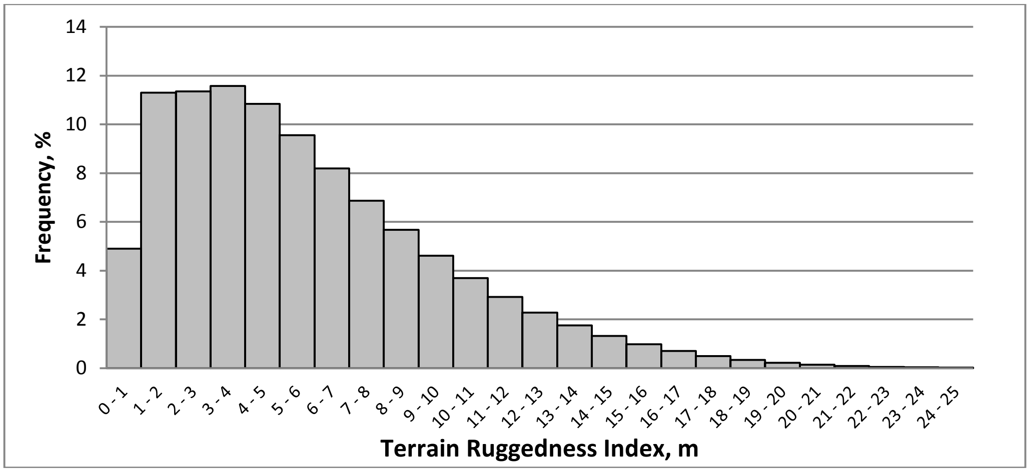


Figure 7.4 Histogram of terrain ruggedness index for the study area

Table 7.2 TRI classification

TRI Values (m)	Classes
< 3.1	Level – Nearly Level
3.1 – 6.6	Rugged
> 6.6	Highly Rugged

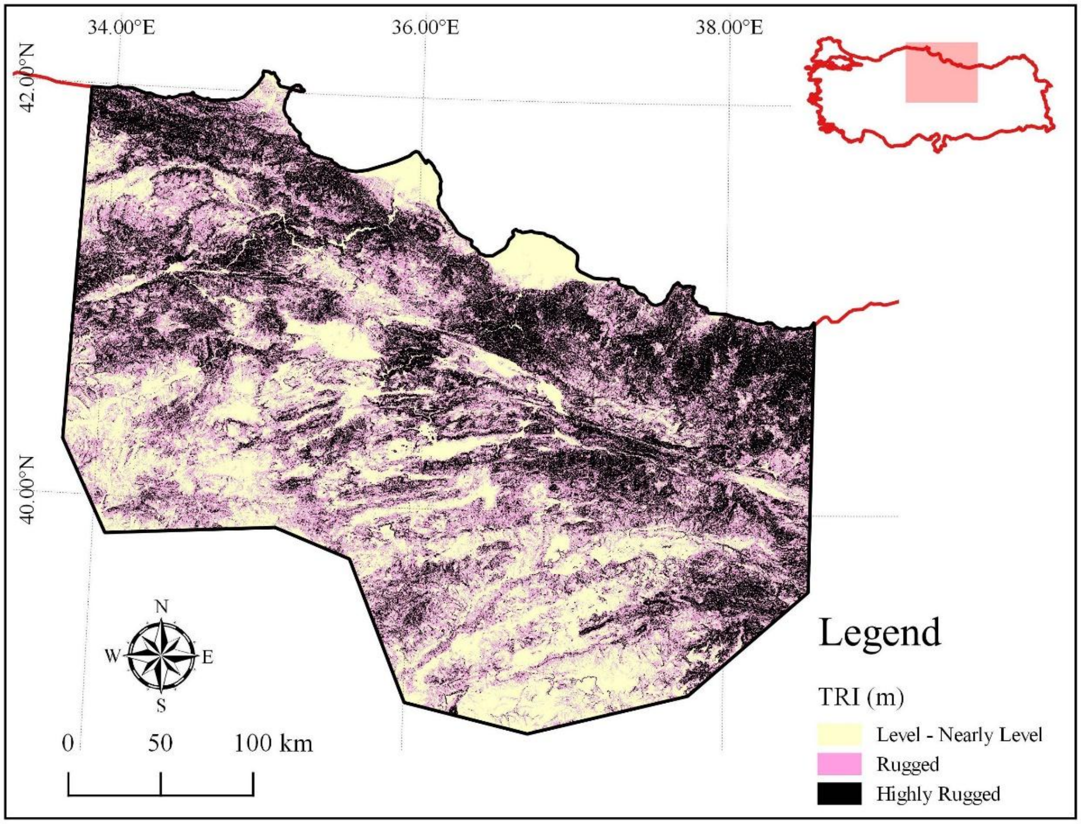


Figure 7.5TRI map of the study area

Zile **TRI = 2.95 m** **Level-Nearly level**	

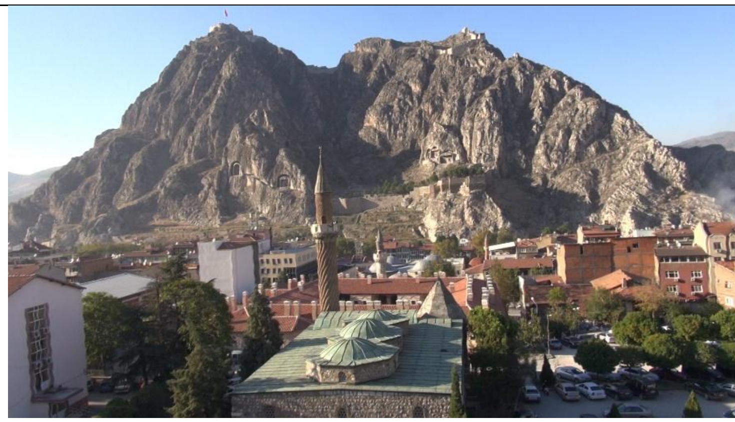
Kümbet **TRI = 4.36 m** **Rugged**	
Amasya **TRI =7.45 m** **Highly rugged**	

Figure 7.6 Example views of fortresses from each TRI classes

Slope

Slope can be defined as steepness of a surface. Slope data are produced with digital elevation models and thus have the same resolution as DEM. A slope map of the study area is shown in Figure 7.7.

The histogram given below shows the distribution of slope values of the study area (Figure 7.8). The arithmetic mean of the slope values from 0 to 84.88 degrees was 9.81, and the standard deviation was 7.91. The histogram derived from the map has a right-skewed distribution. Accordingly, slope degrees accumulated close to 0 degrees. Of the values, 95% were less than 25 degrees.

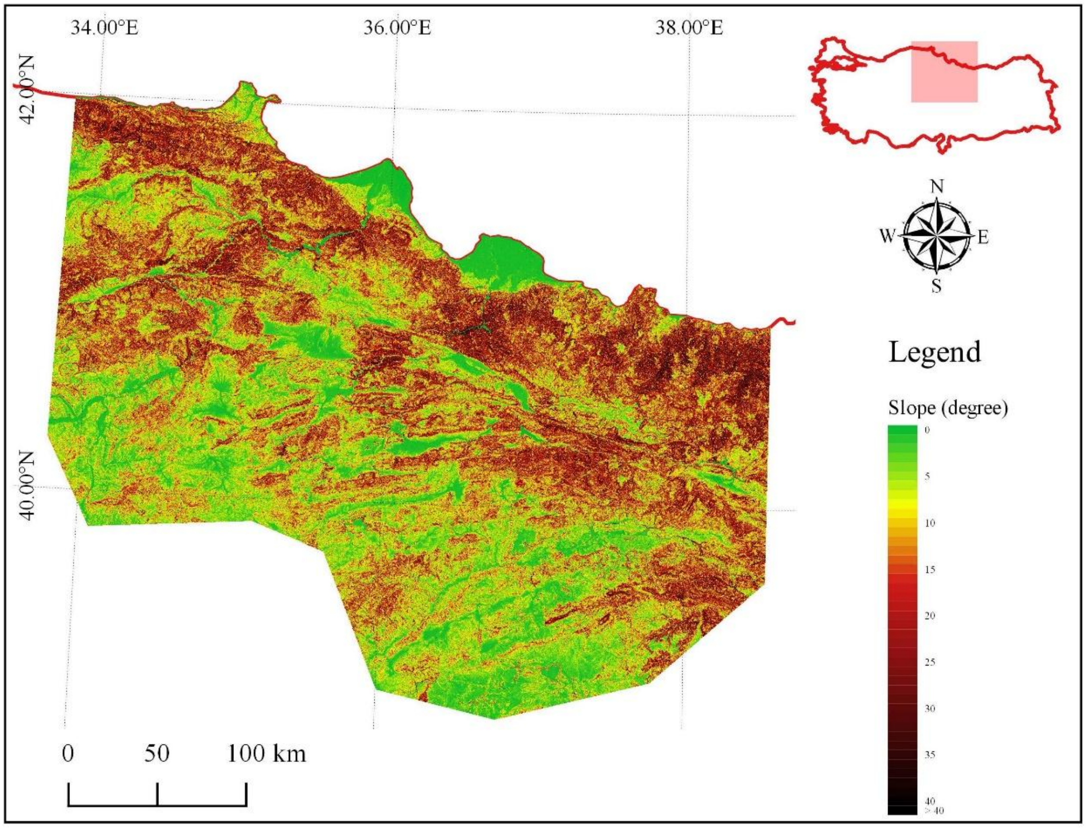


Figure 7.7 Slope map of the study region

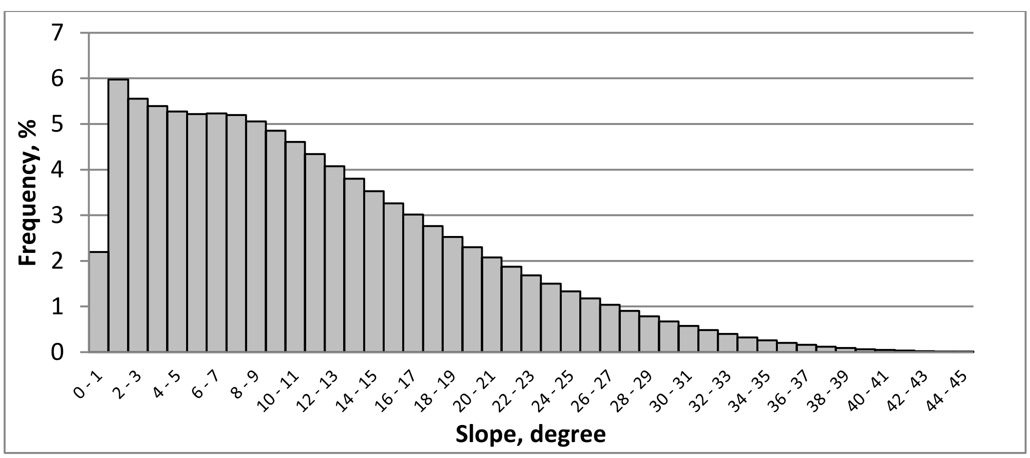


Figure 7.8 Histogram of the region for slope

Aspect

Aspect data, which is defined as the data for oblique surfaces, is also derived from the quantitative altitude model. Aspect values start at 0 for due north and increases in degrees clockwise. These angle values are shown as directional information in Table 7.3. Locations with slope values of less than 3 degrees were classified as flat. The aspect map and its histogram are shown in Figures 7.9 and 7.10. Aspect values were equal in around 20% of the whole study area.

Table 7.3 Aspect classification

-1	Flat
315 to 45	North
45 to 135	East
135 to 225	South
225 to 315	West

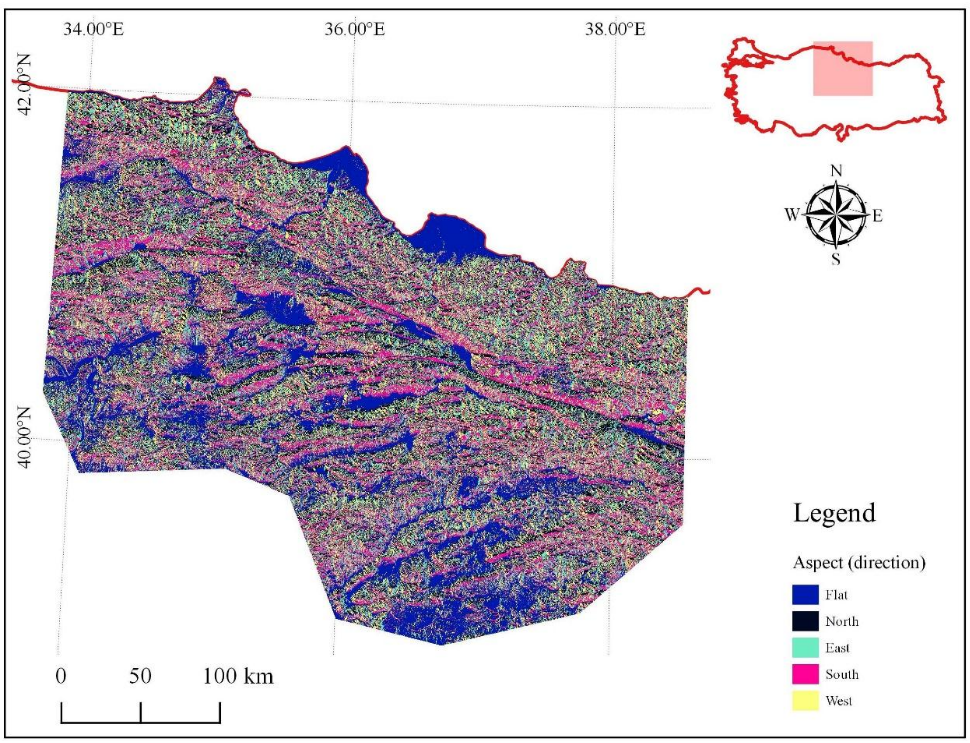


Figure 7.9 Aspect Map of the study region

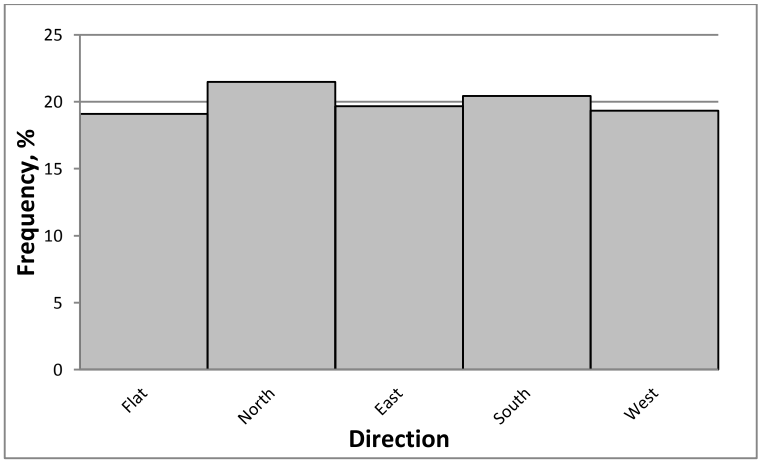


Figure 7.10 Histogram of the aspect data of the region

Rock Type

The rock types in the Pontic landscape were integrated in the analyses to investigate whether rock type affected site selection. The geological map of the area (1:500,000) obtained from MTA (the General Directorate of Mineral Research and Exploration) was processed and reclassified by rock type and geological age into six classes: recent sedimentary rock, sedimentary rock, extrusive igneous rock, intrusive igneous rock, ophiolitic rock and metamorphic rock (

Figure 7.11). Recent sedimentary rock in the study area consist of Quaternary clastics including beach and dune deposits, alluvial fan, slope debris and so on. The sedimentary rock class is older in age and includes consolidated sedimentary rocks like limestone, sandstone and mudstone. The extrusive igneous rocks in the study area are mainly basalt, payroclastic rocks and andesite. The intrusive igneous rocks in the study area are mainly granitic rocks, but the class also includes a significant amount of undifferentiated volcanic rocks. Similarly, the ophiolitic rock class contains significant amount of undifferentiated basic and ultrabasic rocks as well as pillow lava and peridotite. The metamorphic rock class contains mainly schists and marble.

Consolidated sedimentary rocks are the main rock type in the study area with approximately 60% area coverage. Intrusive igneous rocks occur in only around 2% of the area (Figure 7.12). Other classes of rocks are found in roughly 10% of the area.

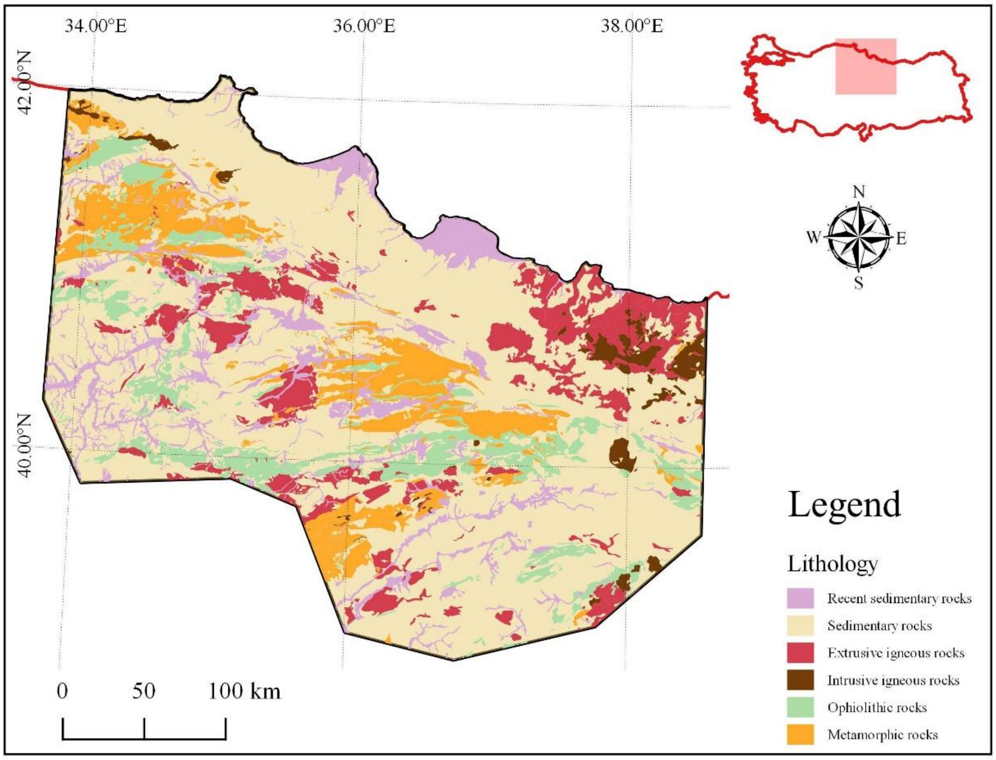


Figure 7.11 Reclassified geological map of the study region

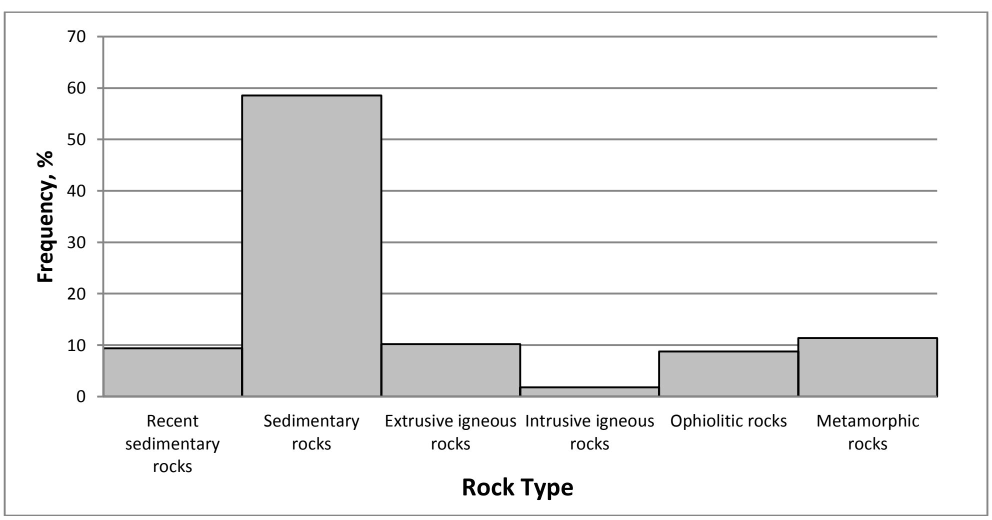


Figure 7.12 Histogram of rock types available in the study area

River Network

One of the main prerequisites for settlements and fortresses is water supply. Almost all of the fortresses in the study area have rock-cut tunnels to reach water sources in a secure way. In order to investigate possible relationship between location of fortresses and water resources in the region, rivers and their tributaries are considered in the analysis as possible water resources. River network data on a 1:250,000 scale was obtained from the European Environment Agency. This data is derived from a digital elevation mode, but includes further improvements. The vector data also provides attributes like Strahler order and river rank for each segment. Strahler order indicates the degree of branching that starts at a spring. By contrast, river rank starts at river mouths. Using these rankings and comparing them with the topographical maps, permanently wet river courses were identified as much as possible (Figure 7.13). However, it should be noted that there may still be some wet river courses missing in the final data or dry/temporarily wet river courses included. This data was used to investigate the proximity of river courses to fortresses.

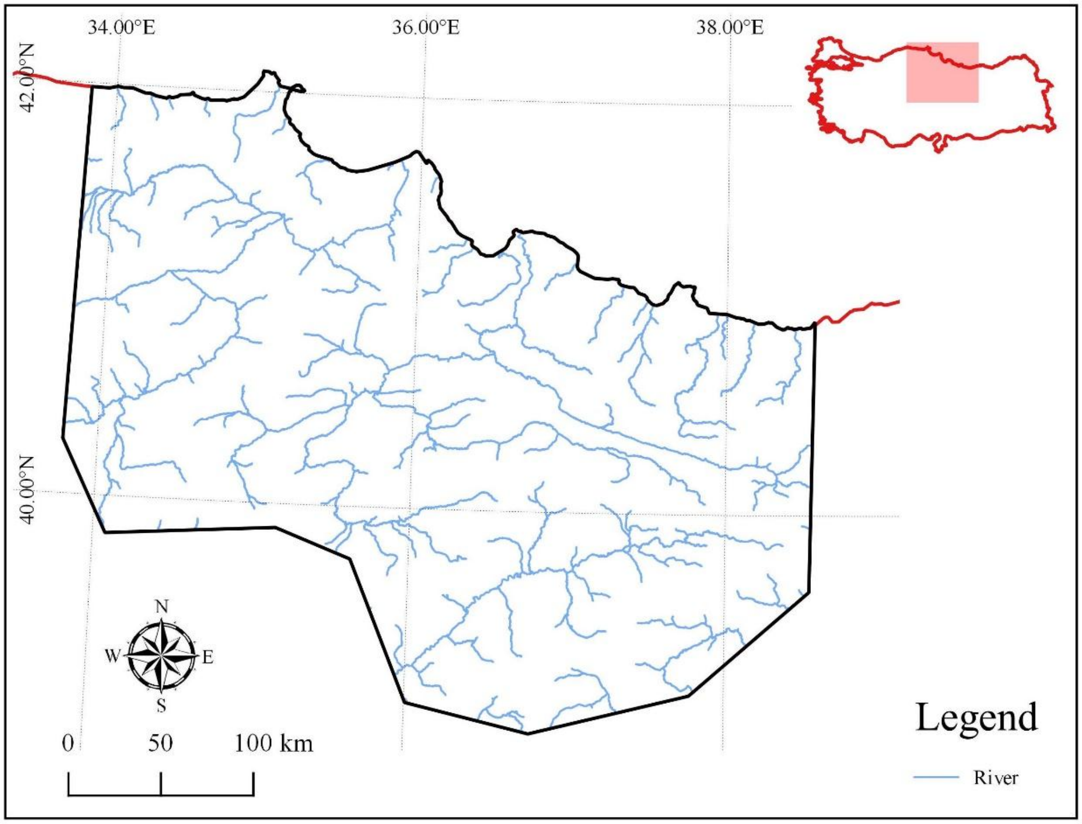


Figure 7.13 River network map of the study region (Filtered data for river rank 1 or Strahler greater than 2)

Arable Land Map

The Arable Land Map is a map of potential agricultural areas (Figure 7.14). This map was created utilizing the Corine 2006, Terrain Usage Map (17th updated version) with 100 meter resolution, produced by the EU Environment Agency. First, it was resampled to the resolution of DEM. Then, among the several land use types, agricultural areas were identified. Agricultural areas in the original data include arable land, permanent crops, pastures and heterogeneous agricultural areas. In this study, arable land and the permanent crops lands were considered to be arable lands during the Hellenistic period (Table 7.4.). Finally, the arable land map was obtained by filtering out irrelevant land uses such as forests and bodies of water and reclassifying the data into the single class, arable land.

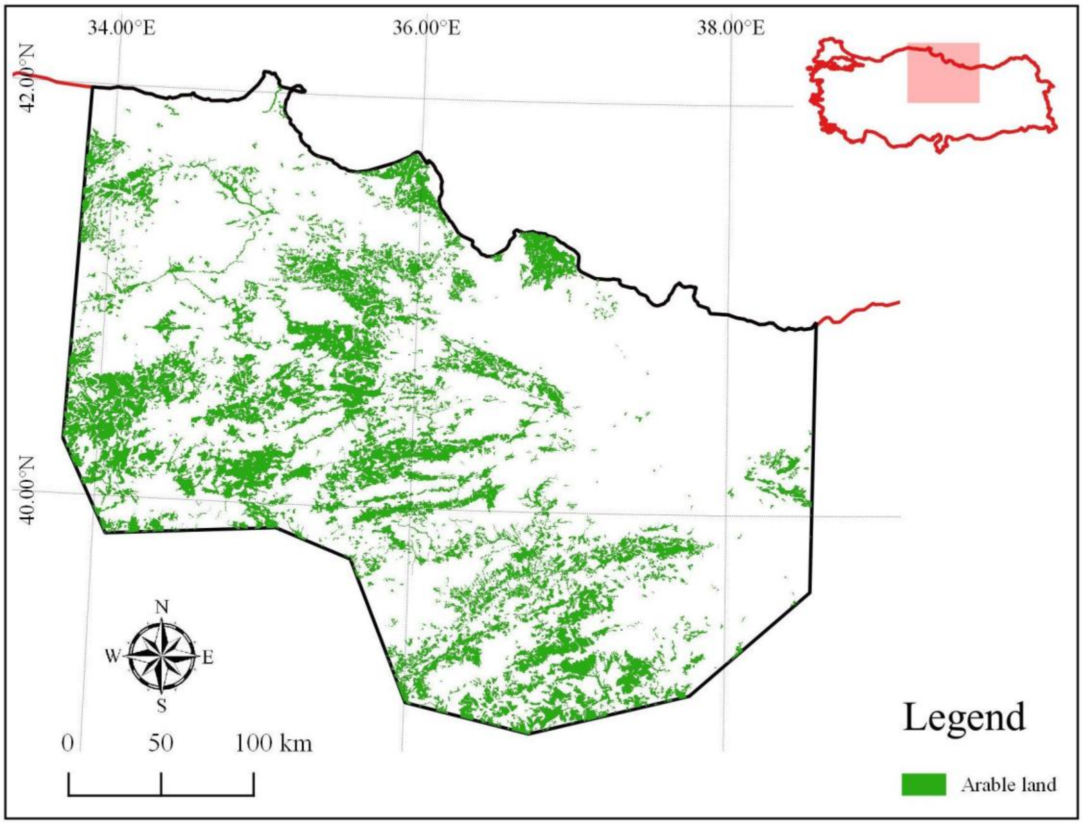


Figure 7.14 Arable land map of the study area

Table 7.4 Arable land classes in the study area

Landuse type	Landuse sub-type
Arable land	
	Non-irrigated arable land
	Permanently irrigated land
	Rice fields
Permanent crops	
	Vineyards
	Fruit trees and berry plantations
	Olive groves

Arable lands are vital for food production. Therefore, a relationship was expected between defensive fortresses and arable lands. An arable land map was used to investigate the amount of arable area in the close vicinity of fortresses and its visibility from the fortresses. Based on the produced arable land map, arable land covers approximately 9.3 million hectares (21%) of the study area.

7.3.Basic Spatial Relationships

In this section, topographical data and the rock type map were explored for fortresses, settlements and the study area. First, histograms and descriptive statistics (minima, maxima, means, medians, standard deviations and so forth) of fortresses and settlements were plotted and compared to the regional data. Later, the chi-square test was carried out for each parameter between fortresses and region and between settlements and region (Todd et al., 2011: 248-9). The chi-square test measures the difference between expected and observed values and simply tells us about the probability that a relationship exists (Equation 2). This test was intended to determine whether the locations of fortresses and settlements in the topography and by rock type were deliberately chosen. The chi-square test and calculation details are given in Appendix 3.

Equation 2 Chi-square formula

$$\chi^2 = \sum \frac{(o-e)^2}{e}$$

where; o: observed value; e: expected value

The proximity of the fortresses to rivers was also investigated in this section. The number of settlements around the fortresses was determined in buffer zones of 5 kilometers, 10 kilometers and 15 kilometers.

Investigation of these basic spatial relationships was carried out with point fortress and settlement data. The results for each parameter are separately discussed under their headings in the following subsections.

7.3.1. Topographical Analysis

When studying the relationships of fortresses with their specific environmental conditions, topography, representing the natural shapes and features on the surface, must be taken into account. This study illustrates these relationships using the parameters of elevation, terrain ruggedness, slope and aspect.

7.3.1.1.Elevation

Fortress

The histogram of the elevation values of fortresses is shown in Figure 7.15a. According to the analysis, fortresses are at elevations between 113 and 1,706 meters. The arithmetic mean of the fortress elevations was about 880 meters, and roughly 80% of the fortresses are located between 400 and 1,400 meters.

The chi-square test result indicates that there was a preference for certain elevation ranges in site selection of fortresses. In Figure 7.15b, the difference between the region's and the fortresses' elevation values is presented as a histogram. Elevations of less than 1,200 meters seem to have been preferred for fortresses.

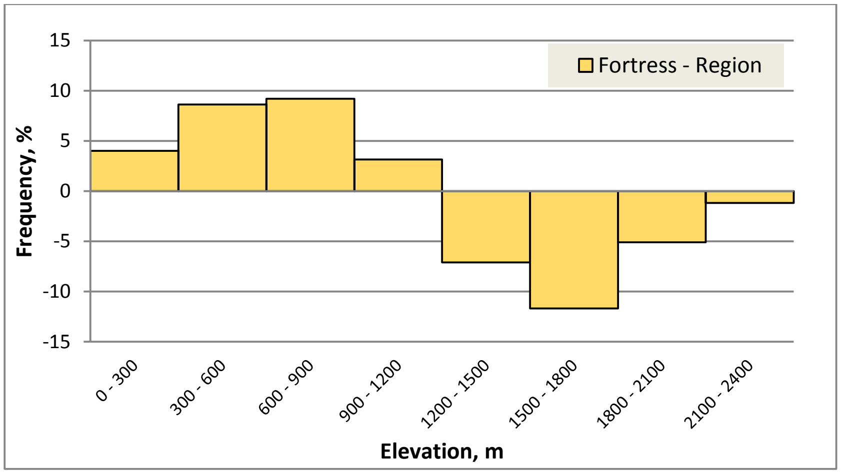


Figure 7.15 a) Elevation histogram of the fortresses and the study area b) Elevation histogram of the fortresses minus the study area

Settlement

Settlement elevations range from sea level to almost 2,000 meters. Their mean value is around 1,110 meters. Two main site selection preferences can be determined: one is around 800 meters, and the other is around 1,400 meters (Figure 7.16a). The chi-square test result indicates that some elevations are preferred in site selection. The difference of the histograms for settlements and the region showed that two different levels of elevation, 200-800 meters and 1,200-1,600 meters, were used for settlements (Figure 7.16b). In order to support this data, choice of location for this settlement can be presented on a micro scale example based on surveys done near Comana. This study has shown that settlements were established on agricultural terraces. Thus, higher elevations were preferred for settlements (Erciyas and Sökmen, 2010: 122, 140).

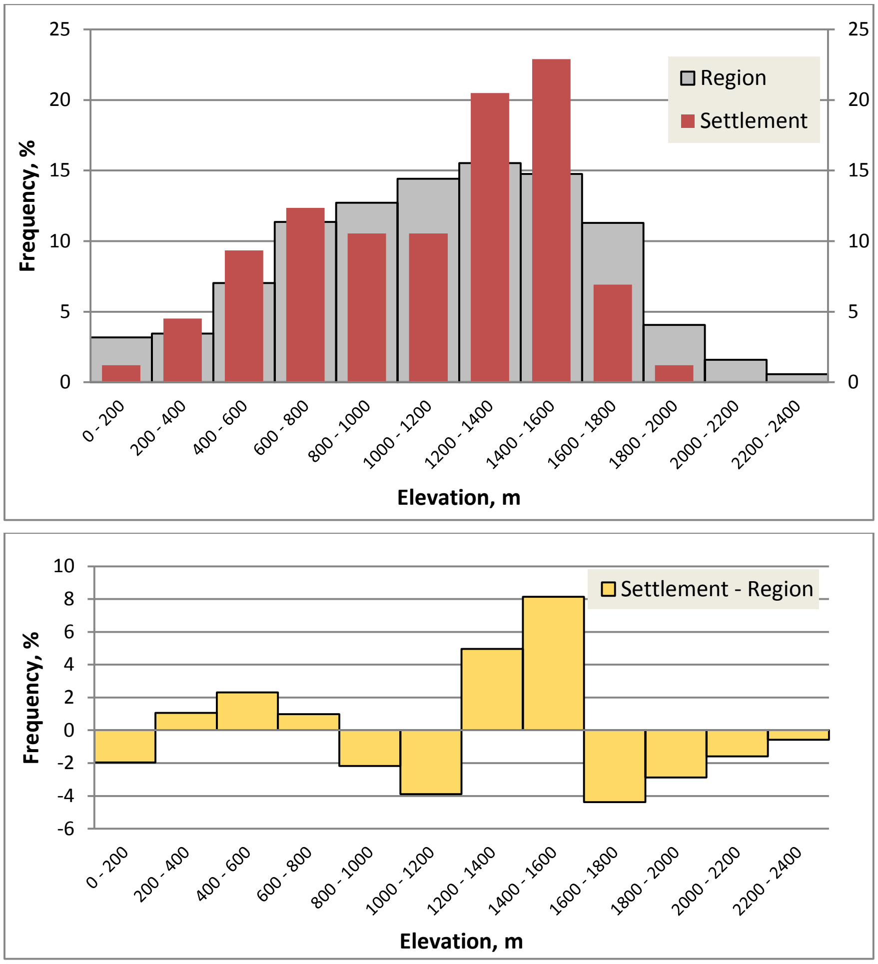


Figure 7.16 a) Elevation histogram of the settlements and the study area b) Elevation histogram of the settlements minus the study area

7.3.1.2.Terrain Ruggedness Index

Fortresses

Fortress TRI values range from about 1.6 to 16 meters. Their mean value is approximately 7 meters, and roughly 80% of them are located at TRI values less than 10 meters.

The histogram of the TRI values of the fortresses is shown in Figure 7.17a. According to the chi-square test, there was a preference for certain TRI values in the site selection of fortresses. In Figure 7.17b, the difference between the region's and the fortresses' TRI values is presented as a histogram. TRI values greater than 5 meters seem to have been preferred for fortresses.

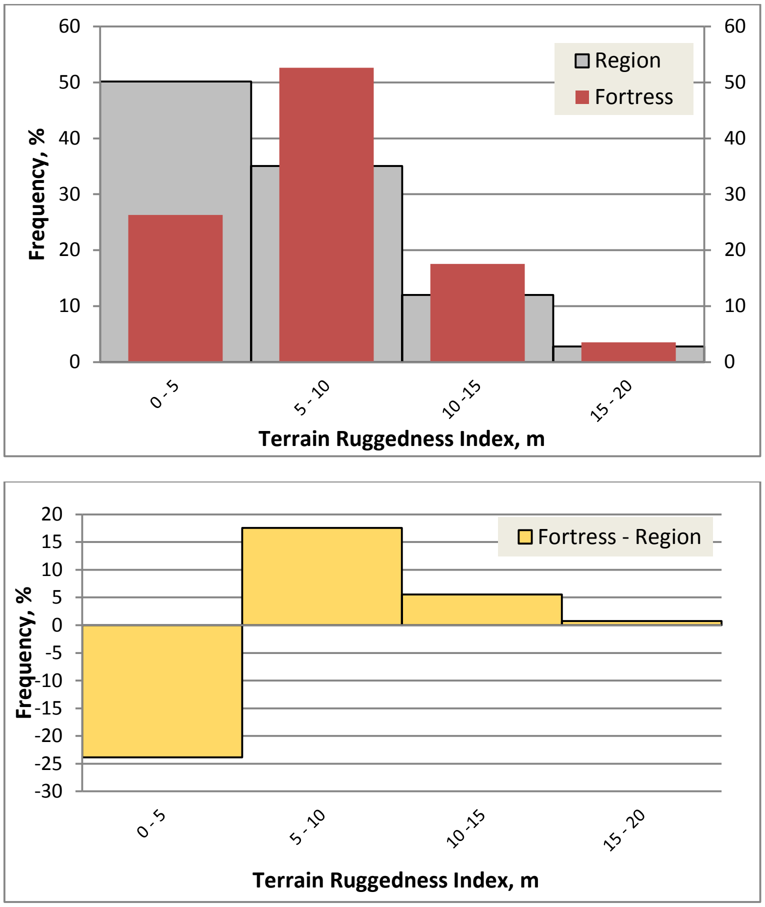


Figure 7.17 a) TRI histogram of the fortresses and the study area b) TRI histogram of the fortresses minus the study area

Settlements

The TRI values of settlements range from 0 to 15 meters. Their mean value is approximately 4 meters, and roughly 72 % of the settlements are located on the terrain with TRI values less than 5 meters.

The histogram of the TRI values of settlements is shown in Figure 7.18a. According to the chi-square test, there is a preference for certain TRI values in settlement site selection. In Figure 0.18b, the difference between the region's and the settlements' TRI values is presented as a histogram. TRI values less than 6 meters seem to be preferred for settlements, and it can be said that lower the TRI, the more preferable the site was for settlements.

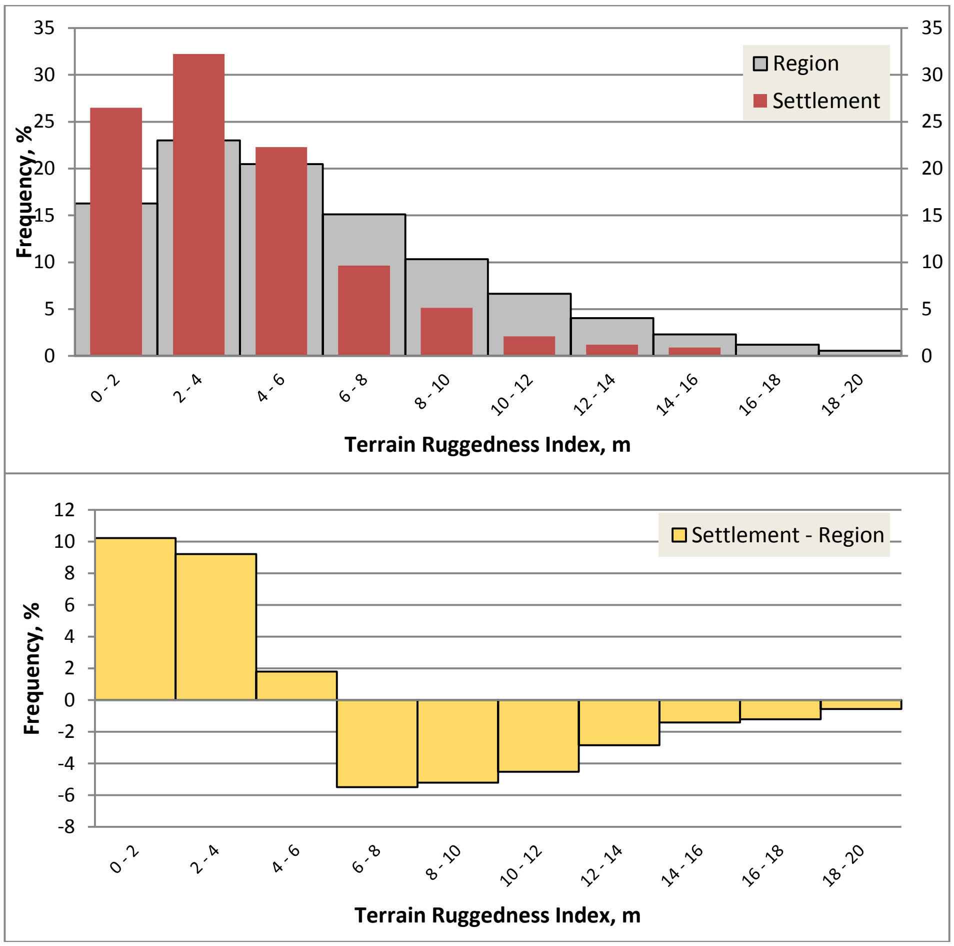


Figure 7.18 a) TRI histogram of the settlements and the study area b) TRI histogram of the settlements minus the study area

7.3.1.3.Slope

Fortresses

The fortresses have slope values that vary from 2 to 36 degrees. More than 50% of the fortress slope values are in the range of 5-15 degrees (Figure 7.19a). The chi-square test indicates that there was a preference for certain slope classes in site selection for fortresses. In Figure 7.19b, the difference between the region's and the fortresses' slopes is presented as a histogram. Slopes of 10-15 and 25-30 degrees seem to have been preferred for fortresses.

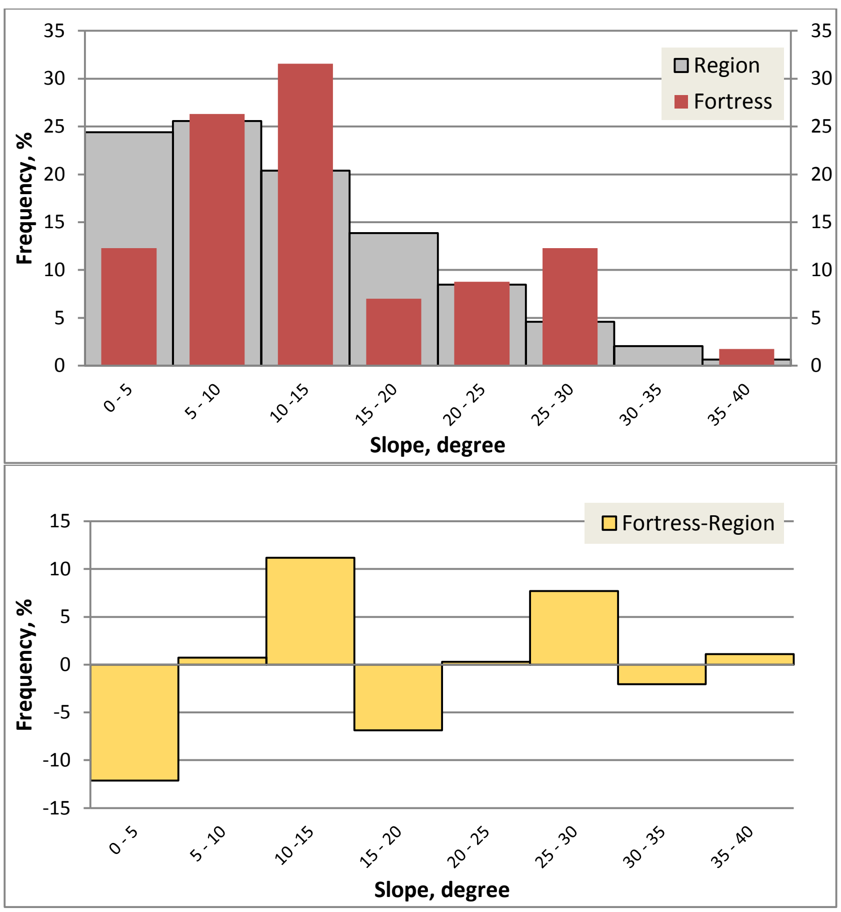


Figure 7.19 a) Slope histogram of the fortresses and the study area b) Slope histogram of the fortresses minus the study area

Settlements

Settlements were established on slopes of a maximum of 32 degrees (Figure 7.20a). The arithmetic mean of the preference is about 8 degrees, and 90% of slope values for settlements are less than 15 degrees. The chi-square test indicates a preference for certain slope classes in the site selection of settlements. In Figure 7.20b, the difference between the region's and the settlements' slopes is presented as a histogram. Slopes of less than 12 degrees seem to have been preferred for settlements in the region.[202]

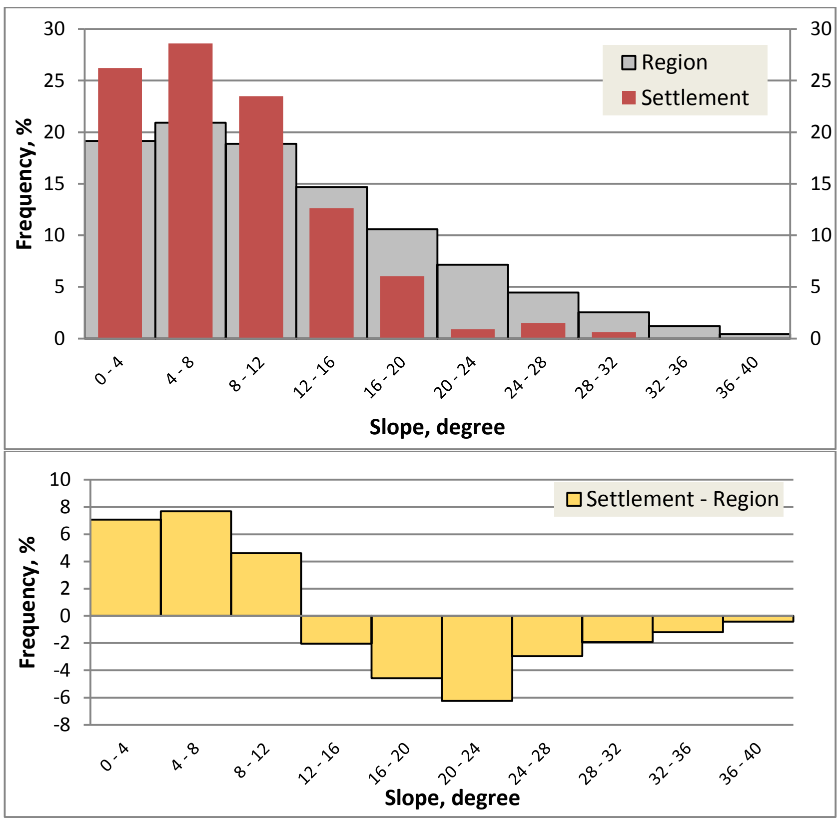


Figure 7.20 a) Slope histogram of the settlements and the study area b) Slope histogram of the settlements minus the study area

[202] Settlements with slope values between 15-20, 20-25, 25-30 and 30-35 degrees are slope or hilltop settlements, which were more preferable during the Hellenistic period (Otmanalan, Tecer, Gençağa kalesi, Kaletepe III, Yukarıbaraklı tepesi, Tekur, İshan, Bakımlı, Surtepe, Kaletepe, Akalan, Küçüktepe, Kızkayası, Erenler tepesi, Kocakaya, Öbektaş, Aşıtepe, Toplutepe, Büyükkale, Paralıtepe I, Gümüşlükaya).

7.3.1.4.Aspect

Fortresses

Fortresses slopes are found directing in all four directions, and there are very few fortresses sitting on flat areas (Figure 7.21a). The aspect values for the region are almost equally distributed in all directions, whereas number of fortresses is highest for north facing slopes. The chi-square test indicates that there was a preference for certain aspect classes in the site selection of fortresses. In Figure 7.21b, the difference between aspect percentages of the region and fortresses is presented as a histogram. North facing slopes seems to have been the most preferred, subsequently west and then south.

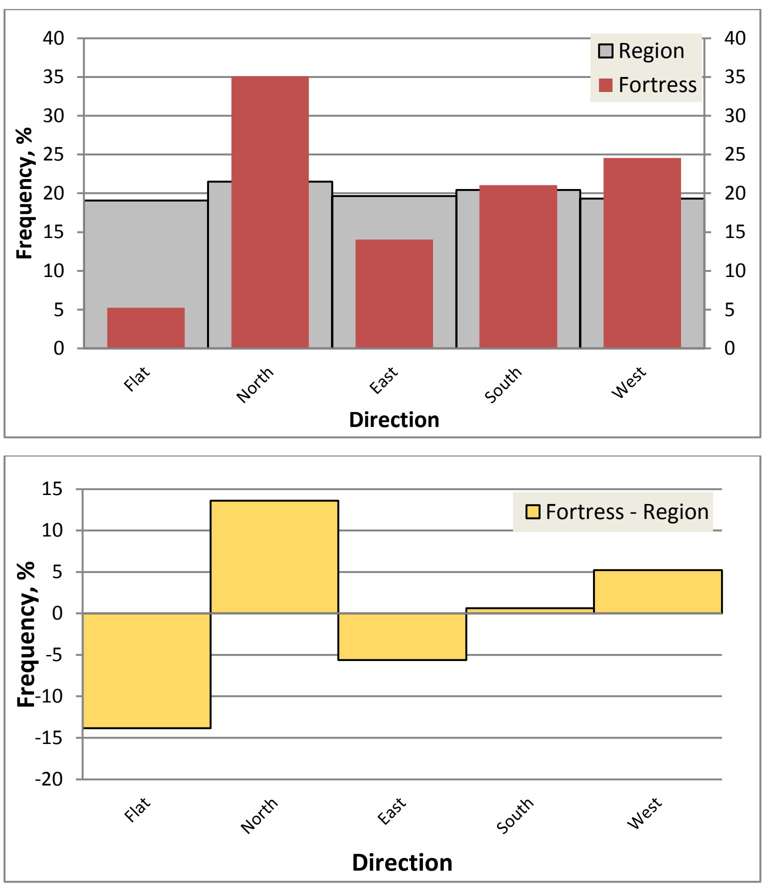


Figure 7.21 a) Aspect histogram of fortresses and the study area b) Aspect histogram of fortresses minus the study area

Settlements

Settlement slopes are found directing in all four directions and are almost equally distributed in all directions (Figure 7.22). Similarly, the aspect values for the region are almost equally distributed in all directions. The chi-square test indicates no significant preference for any direction in the site selection of settlements.

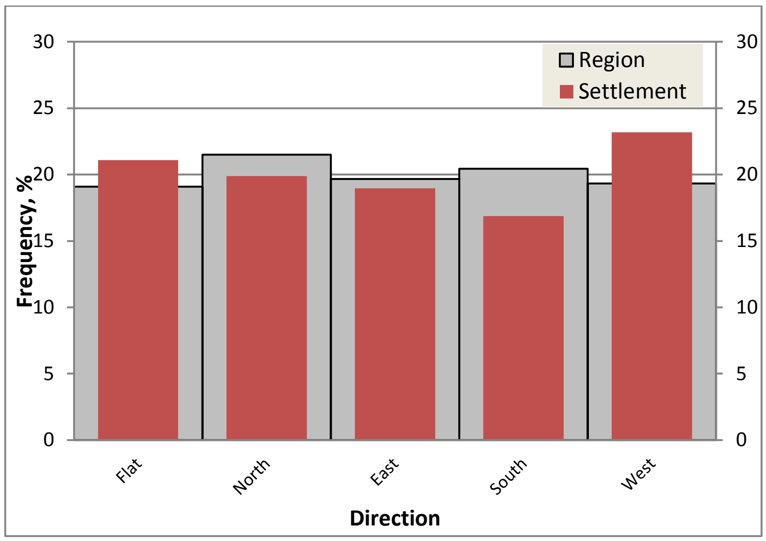


Figure 7.22 Aspect histogram of settlements and the study area

7.3.2. Rock Type

Fortresses

The occurrence of fortresses on each rock type is shown in Figure 7.23. Almost 60% of the fortresses were situated on consolidated sedimentary rocks. On the other hand, the chi-square test indicates no significant preference for any rock type in the site selection of fortresses because the region is largely covered with consolidated sedimentary rocks.

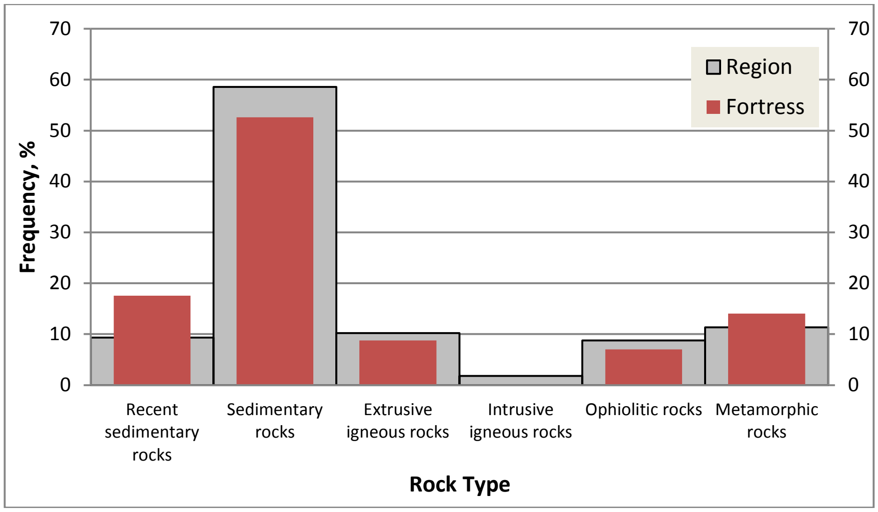
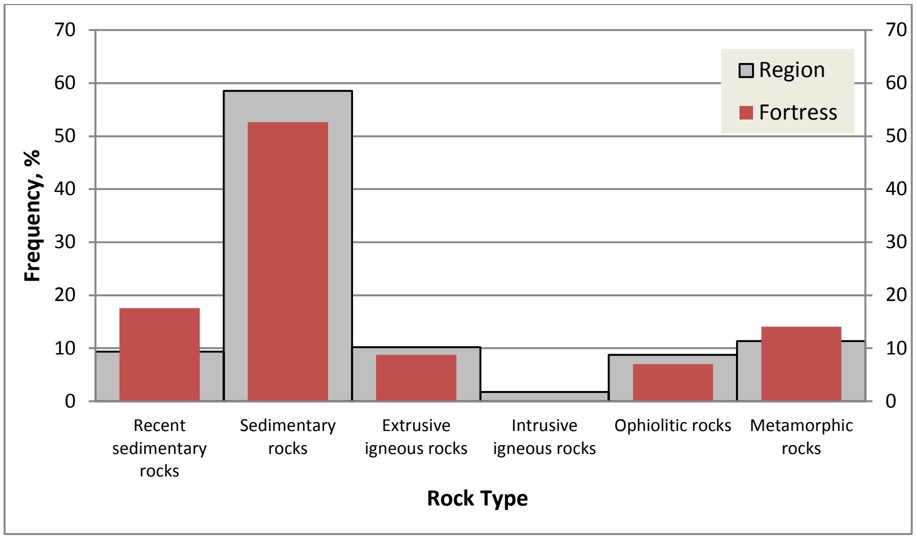


Figure 7.23 Rock type histogram of fortresses and the study area

Settlements

Among the six classes of rock types in the region, almost 60% of settlements were situated on consolidated sedimentary rocks, whereas almost no settlements were on intrusive igneous rocks (Figure 7.24a). The chi-square test suggests that the settlements are not randomly distributed among all rock type classes. In Figure 7.24b, the difference between the percentages of each rock type for the region and its settlements is presented as a histogram. Sedimentary rock seems to have been the preferred rock type class for settlement locations.



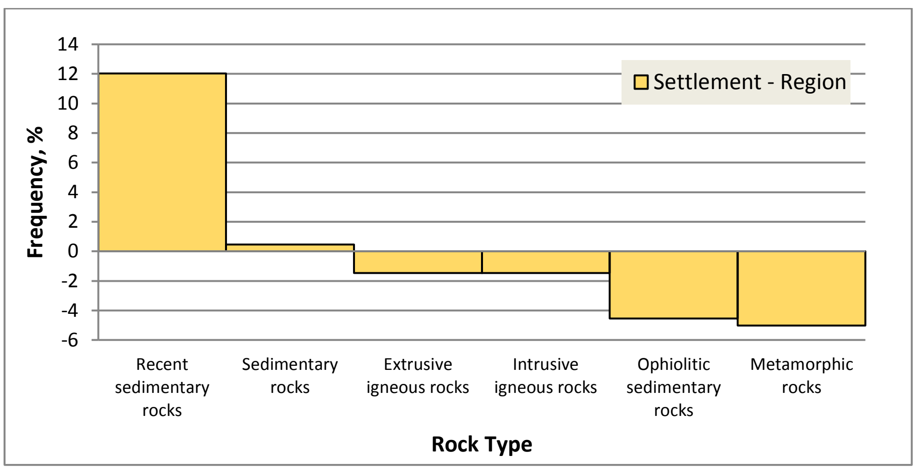


Figure 7.24 a) Rock type histogram of the settlements and the study area b) Rock type histogram of the settlements minus the study area

7.3.3. Distance to Rivers

Fortresses were located on rocky outcrops for strategic reasons and needed secure water supply. Thus, positioning a fortress required some technical expertise. Rock-cut tunnel structures, which were discussed thoroughly in chapter 5, were constructed to reach secure water supply. Calculating the distance of the fortresses to rivers provides information about this issue (Figure 7.25).

The histogram below shows that most of the fortresses were situated very close to rivers (Fig. 7.26). The distances of nearly a half the fortresses to a river is less than 1,000 meters. Of the fortresses, 25% are at least 5,000 meters away from a river. However, it should be noted that, in this study, only rivers assumed to contain water throughout the entire year are considered water sources. The rivers indicated on the map with distance measurements are the main rivers. The distance between some fortresses and rivers seems to be large and appears to indicate a lack of spatial correlation. The relations of these fortresses with a spring becomes evident, however, upon inspection of aquifer maps and 1:25,000 scale maps. The Katır Mağarası is furthest from a river and sits on top of a large scale aquifer. This aquifer is known as the Gümüşhacıköy Aquifer and could have provided water to the fortress. Similarly, the aquifer on which the Kazova Valley (Dazimonitis) sits could have been used as a water source accessed by the rock-cut tunnels of the fortresses of Çördük, Geyras and Küçükbağlar.[203] The Kayrak fortress is located in the eastern border of the Valley of Amaseia near one of the valleys leading into the plain in an area that consists of porous limestone (Zeybek, 1998: 173). Due to this feature, it has large amounts of underground water resources.

[203] See chapter 2 for detailed information on the Gümüşhacıköy and Kazova Aquifers.

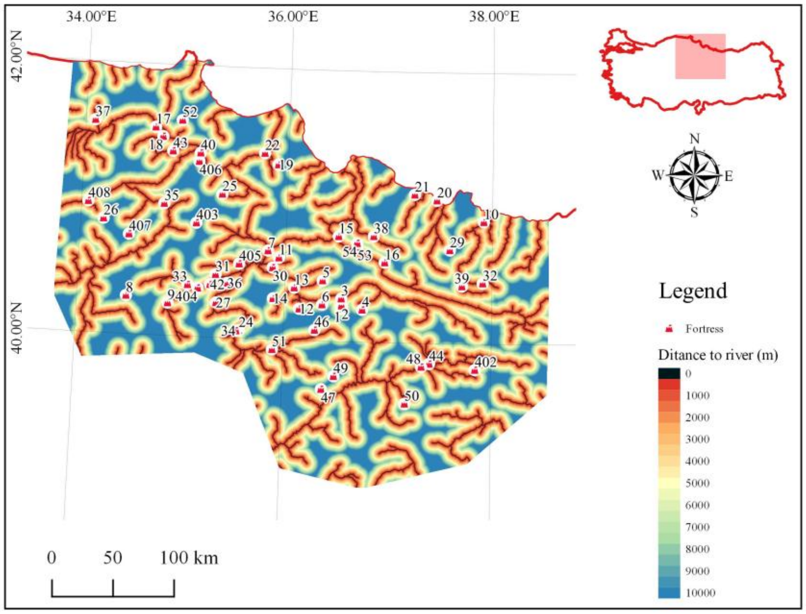


Figure 7.25 Fortress to river distance map of the study area

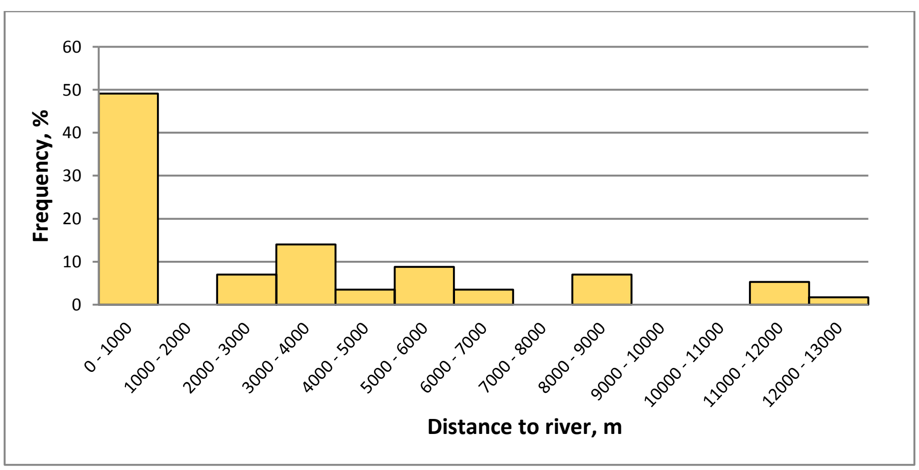


Figure 7.26 Histogram of distances from fortresses to the closest river

7.3.4. Distribution Analysis

Buffer zones of 5, 10 and 15 kilometers in size around the fortresses and Voronoi (Thiessen) polygons were used to understand the spatial relationships between the fortresses and settlements and to learn the settlement counts in the fortresses' areas of influence. The histogram of settlement counts within these buffer zones and Voronoi polygons for the fortresses are shown in Figure 7.27.

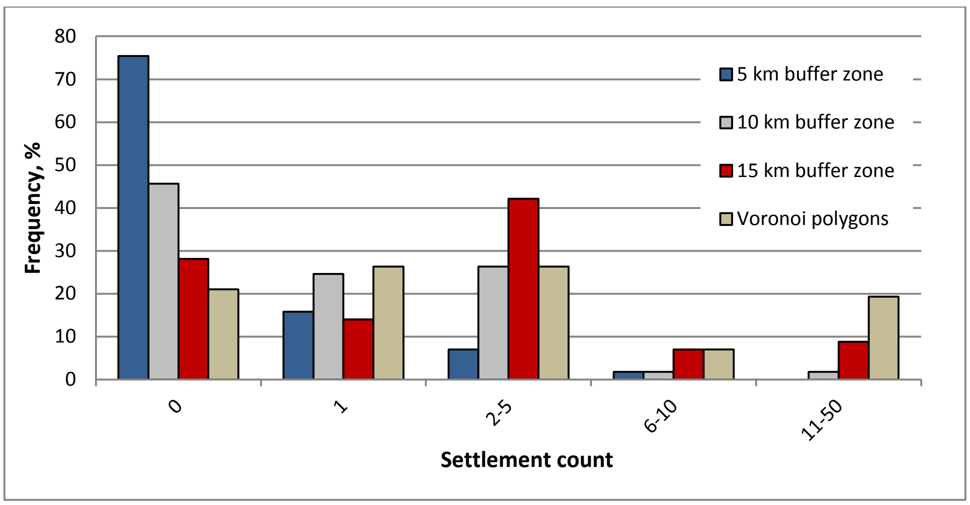


Figure 7.27 Settlement counts in 5 km, 10 km & 15 km buffer zones and Voronoi polygons

Settlement availability around the fortresses was tested at 5 kilometer intervals. Approximately 72% of settlements (43 fortresses and 75% of the total number of fortresses) were not located in the 5 kilometer buffer zone of any fortress. In 5 kilometers of buffer zone, 9 fortresses had 1 settlement, 4 fortresses had 2-5 settlements, and only a single fortress encompassed more than 5 settlements.

Nearly half the settlements (26 fortresses and 45% of the total number of fortresses) were not situated in a 10 kilometer buffer zone of any fortress. For the remaining fortresses, 14 of them had 1 settlement, and 15 of them had 2-5 settlements. Only 2 fortresses had more than 5 settlements in 10 kilometers of buffer zone.

For 15 kilometers of buffer zone, the situation is little bit different. The number of fortress that cannot be related to any settlement decreases to 16 (28% of total number of fortresses), and the fortresses with only 1 settlement decreases to 8 (15% of total number of fortresses), while the number of fortress with from 2 to 5 settlements increases to 24 fortress (42% of total number of fortresses). The number of fortresses with connections to more than 5 settlements is 9.

Thiessen polygons[204] or Voronoi diagrams are another way to perform catchment analysis and consist of edges according to nearest site. Voronoi diagrams were created for the fortresses. Area of influence was determined for every fortress based on their locations relative to each other. Settlements were counted inside the polygons derived from this analysis. The results showed that 20% of the total polygons (12 polygons) contained no settlements. Of them, 25% (15 polygons) contained only 1 settlement, and 25% of the total polygons (15 polygons) encloses 2 to 5 settlements. The number of polygons that included more than 5 settlements is 15. Thiessen analysis did not yield consistent results. Some settlements were excluded from the diagram due to artificially manufactured borders. Lack of sufficient survey data for the area also prevented noteworthy conclusions from being drawn.

A few points have to be considered in order to present the data in its entirety. The biggest problem encountered when creating an inventory of settlements was the lack of surveys throughout the Pontic landscape. Thematic surveys conducted in the area (especially in the second millenium BCE) neglected the identification of Hellenistic period settlements, and there was lack of a sufficient number of settlements for the Thiessen analysis. There may still be unidentified and unreported settlements in the area. This pattern only differs in Sivas and its vicinity, the southeast of the region. Extensive and intensive surveys conducted by Ökse neatly illustrated the settlement distribution

[204] Thiessen polygons are created by using sample points, which are fortresses in our study. (http://support.esri.com/en/knowledgebase/GISDictionary/term/Thiessen%20polygon) “Thiessen polygons are generated from a set of sample points. Each Thiessen polygon defines an area of influence around its sample point, so that any location inside the polygon is closer to that point than any of the other sample points.”

during the Hellenistic period. Utilizing the Thiessen polygon in this area provided better results.

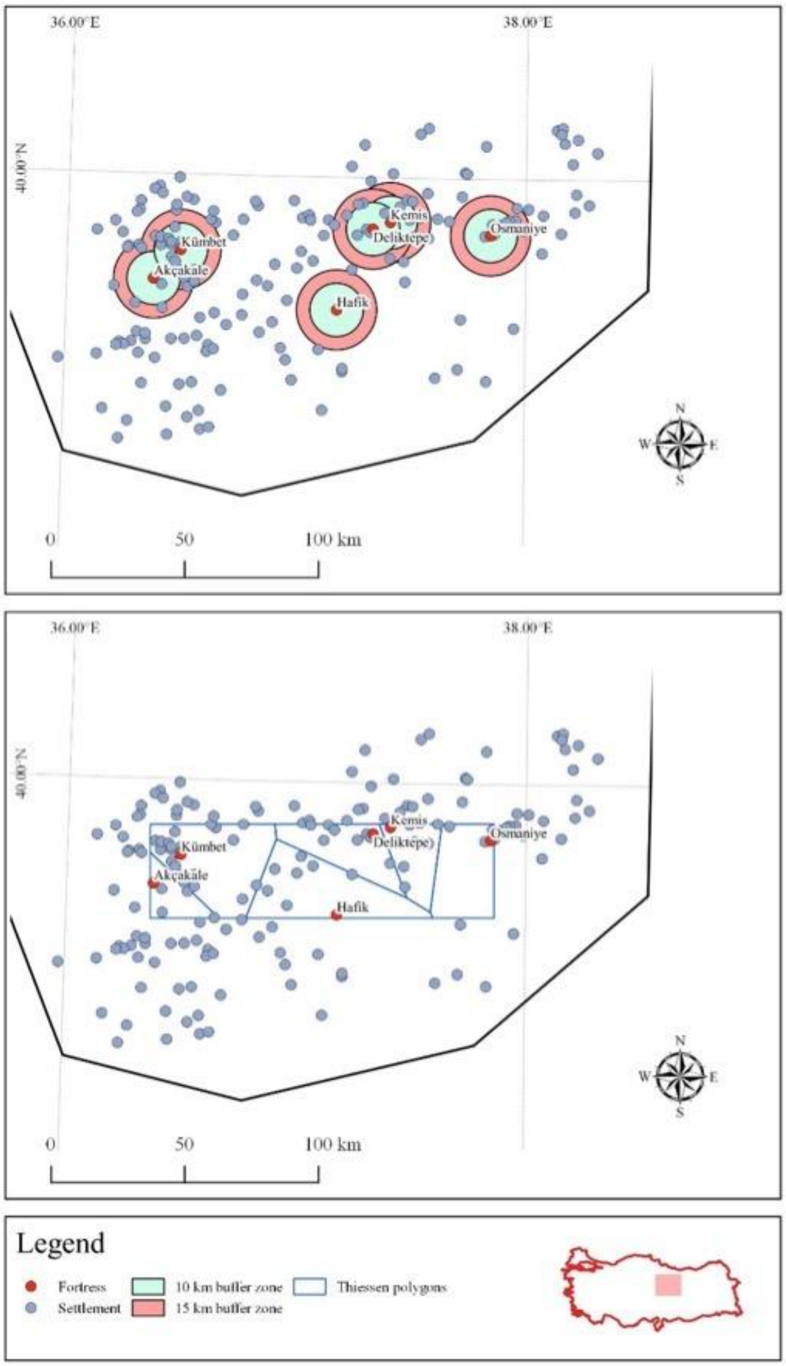


Figure 7.28 Settlements and the fortresses in the Upper Halys Valley and the thiessen polygon result

The settlements identified in surveys conducted in the Sivas area are numerous. This is due to meticulous record-keeping during surveys. The example focusing on the east of the study area shows that the Thiessen polygon was inadequate at determining relationships between fortresses and settlements. For example, the polygon suggests 2 settlements in the Osmaniye fortress area of influence, whereas 9 settlements are actually present in 10 kilometers of buffer zone (Figure 7.28).

7.3.5. Results and Discussion

Here is a summary of the basic spatial relationship analyses results in Table 7.5.

Table 7.5 The summary of the basic spatial relationship analyses results

	Fortress	**Settlement**
Elevation	Not Random < 1200 m	Not Random 200 – 800 m and 1200 – 1600 m
Terrain Ruggedness Index	Not Random > 5 m	Not Random < 6 m
Slope	Not Random 10° – 15° and 25° – 30°	Not Random < 12°
Aspect	Not Random North, then west	No significant divergence
Rock Type	No significant divergence	Not Random Recent sedimentary rocks

The results indicated that both fortress and settlement locations are clearly selected using certain criteria. As Table 7.5 shows, fortresses were built on elevation values of less than 1200 meters, TRI values higher than 5 meters, slope values in the 10°-15° and 25°-30° ranges and on north facing slopes. On the other hand, rock type probably did not affect on fortresses locations. Settlements were built on elevation ranges of 200-800 meters and 1200-1600 meters, TRI values smaller than 6 meters, slope values smaller 12° and recent sedimentary deposits. Aspect was not one of the important criteria for settlement location.

When the results for fortresses and settlements were compared to each other for each parameter, significant differences were found. Specifically, lower terrain ruggedness was preferred for settlements, whereas higher terrain ruggedness was preferred for fortresses. While low terrain ruggedness eases agricultural activities, transportation and communication, rugged terrain makes it harder to approach the site and easier to view the surroundings and construct enclosed areas. Similarly, lower slope values were preferred for settlements compared to fortresses. In general, the reasons for terrain ruggedness preferences apply to slopes. Aspect seems to be significant for fortresses, but not for settlements. This is reasonable because fortresses are founded on steeper slopes and the direction of slope should be significant. North and west directions were preferred. The mountain ranges in Pontos region majorly run east to west. Therefore, north and south facing fortresses were built to view each side of these mountains. Figure 7.29 shows clearly such an example for the Tokat plain. However, the mountain range where the Bükse, Simali, Hisarkavak, Sazak and Gökçeli fortresses are located extends northeast to southwest, and here the fortresses face west, northwest, east and southeast as would be expected. Conversely, rock type seems to be significant for settlements, but not for fortresses. Settlements are preferably founded on recent sedimentary rocks containing alluvial fans, which are fertile lands for agricultural activities. This is one of the most important resources for a settlement. On the other hand, rock type does not seem to be a criteria in fortress site selection. This is logical as well. Rock type can be important as a source for construction material, but the position of a fortress is more critical due to its function. Rock-cut tunnels are common features of the fortresses, and most probably this rock type allows the tunnels to be built easily.

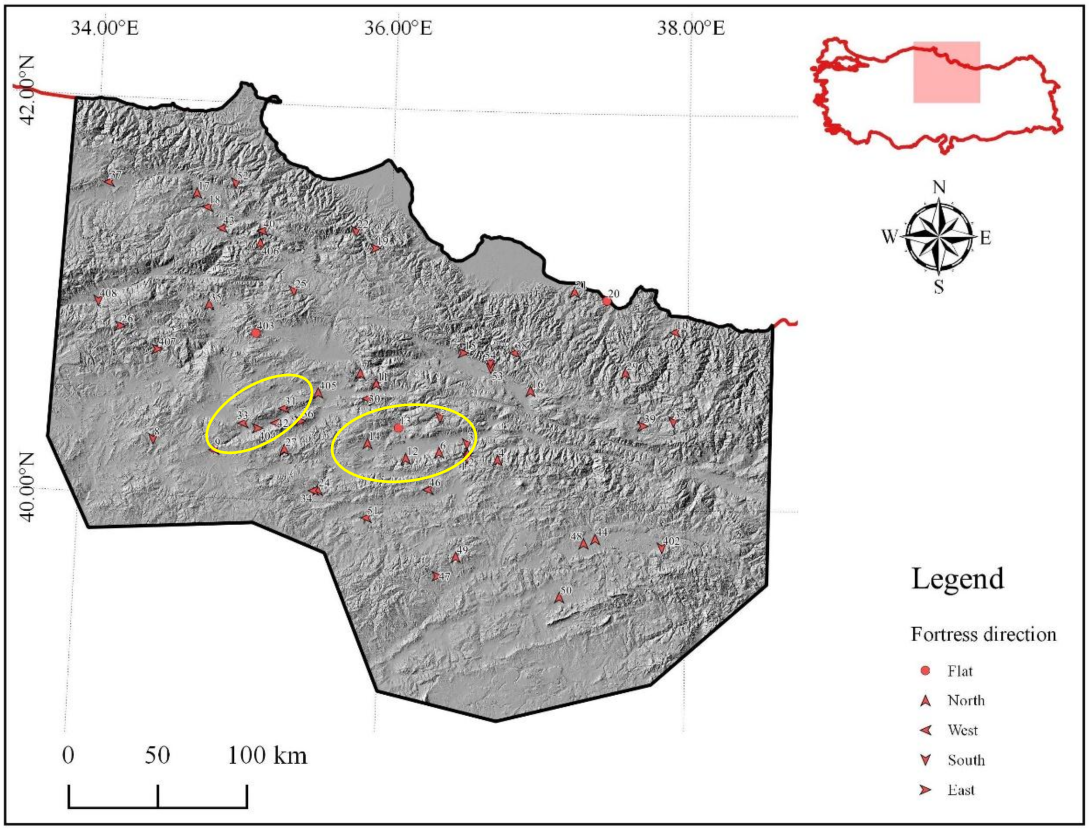


Figure 7.29 Fortress directions in the study area and effect of mountain range direction on fortress directions (yellow ellipses)

The proximity of the fortresses to rivers was also determined. Almost half of the fortresses are located less than one kilometer from rivers. The possibility that the rock-cut tunnels were constructed to access underground water sources was also considered. Some fortresses (Katırmağara, Çördük, Geyras, Küçükbağlar, Kaleboğazı) were located far from rivers. They are, however, located on aquifers, which supports the idea that tunnels were built to access water.

The spatial relationship of fortress and settlements was examined by the counting settlements in 5, 10 and 15 kilometer buffer zones around the fortresses and with Thiessen polygons. The fortresses were related to 2-5 settlements at a 15 kilometer distance. Unreliable data produced by Thiessen polygons and faults in surveys performed produced inadequate results for spatial relationships. The Sivas survey data showed that Thiessen polygons produced biased results.

Finally, it should be noted that the data type (i.e. point data) and the number of samples (especially for fortresses), the homogeneity of samples in the study area and accuracy and detail of input data (i.e. DEM, arable land) influenced the results. However, the results are promising and encourage further investigation of fortresses locations in the Pontic landscape.

7.4. Fortresses & Their Functions

Studies of fortresses indicate that the fortresses had multiple purposes such as administering and controlling strategic locations, natural passages and communication routes, guarding properties, providing residences and managing agricultural production (Bakirtzis, 2010: 352).

Fortresses are expected to be related to their locations. Therefore, in order to shed light on their function, their location is further investigated in this section. Kolb has constructed a system of classification based on the topography of the fortresses. While assigning functions to the fortresses, he posed a basic question related to topography: Was the fortress located in a narrow place in the valley, on a mountain pass or on a hilltop? Kolb his study relied on topographical 1/200,000 and 1/500,000 scale maps, therefore any evaluation that made use of these should be reconsidered.[205]

Besides the location of a fortress, its vicinity should pertain information about the function of the fortress. Remembering that, in Section 7.3.4, fortresses were found in connection with 2-5 settlements at most in a buffer zone of 15 kilometers. This close vicinity should be at a distance such that response of a fortress to any event in this area should be relatively rapid and most likely the same day. Fifteen kilometers can be walked in about three hours. How far one can see from a fortress is also important. However, it is difficult to determine this because the distance is actually more about the intensity of the light traveling from the source and the obstacles that absorb it. Here, only the effect of Earth’s surface curvature is considered. The horizon would be around 5 kilometers away from a person standing on the earth's surface. This distance increases with elevation. It should also be mentioned that distances in question can be somewhat higher when only signaling between the fortresses is considered. The possibility of signaling networks in this region is discussed in the next section (Section 7.5).

[205] Kolb’s point of view was discussed in detail in chapter 1.

The area within a 15 kilometer radius was also examined for variation in ruggedness. Among topographical parameters only ruggedness was included to the investigation of fortress vicinities because: (1) elevation is a regional factor and not comparable between fortresses, (2) ruggedness and slope are significantly correlated, therefore, slope is excluded, (3) even though the fortress site selection preferred certain directions, local topography significantly affects its evaluation as explained in Section 7.3.5.

Visibility in a 5 kilometer buffer zone was also studied: the amount of visible area, arable area and the visible arable area from the fortresses. The amount of visible land was considered to reflect fortressess' control over the surrounding area. The amount of arable area was taken as an indication of the agricultural potential of the area. The amount of visible arable land was considered to reflect control over agricultural areas.

There are other possible variables that could have been included in the analysis of the functions of fortresses, but was not. For example, visibility of Roman roads from fortresses in this limited area could have been included, but the roughness of the available data and the missing routes would have misled the results. This topic is also discussed in the road network analysis in the following section (Section 7.6.2). Similarly, the presence of any river in this zone as a water source could have been included, but there are other water sources in the region, and the data would be incomplete for the investigation. The use of number of settlements in the close vicinity could be considered, but was avoided because of the heterogeneity of survey results in the region, as discussed in Section 7.3.4.

In the following sections, first, data preparation for the vicinity of fortresses is shown, and then topographical and viewshed analysis results for them are provided. Afterwards, the fortresses were classified using two different methods: decision-making analysis using an equally weighted sum model and cluster analysis. Their results are compared in Section 7.4.4. Finally, the fortress functions are discussed on the valley level.

7.4.1. Data Preparation

The process of data preparation for the function analysis is summarized in Figure 7.31 For the analysis, the Terrain Ruggedness Index (TRI) map of the study area (Section 7.2.2.) was clipped for each fortress to an area with a 15 kilometer radius using a gdal algorithm called the clip raster by mask layer on QGIS 2.10 Pisa software. Afterwards, histograms for the TRI values of the vicinity of each fortress were plotted, and their distributions were examined. For viewshed analysis, 25 observer points covering an area of 125 meters x 125 meters were used to represent the potential observation points from the fortresses (Figure 7.30). Viewshed analysis was performed with a QGIS plugin called Advanced Viewshed Analysis.[206] In addition, a 10 meter observer height was used in the analysis to simulate the original walls of fortress.

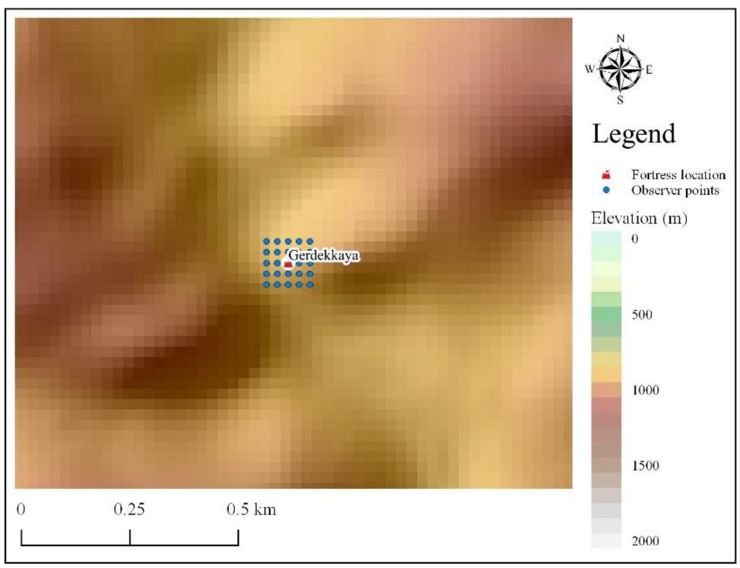


Figure 7.30 Observer points represent the Gerdekkaya fortress

[206] http://hub.qgis.org/projects/viewshed.

The details of the preparation of arable land map was already given in Section 7.2.2. The arable land maps of 15 kilometer vicinity around each fortress are similarly prepared by clipping of arable land map of study area. The visible arable land around fortress was a combination of arable and visible land of each fortress.

Further statistical observation and calculations on topographical and viewshed analysis are discussed in the following sections (Section 7.4.2. and Section 7.4.3.).

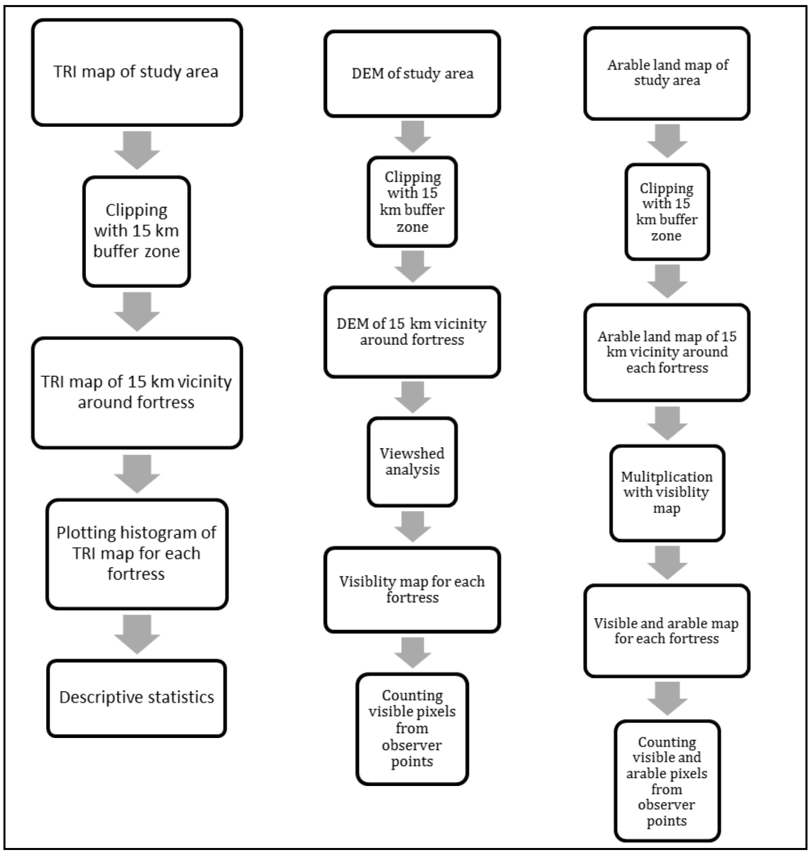


Figure 7.31 Data Preparation for the function analysis

7.4.2. Topographical Analysis

Topographical position is important for GIS-integrated archaeological landscape research. The relation between archaeological sites and their landscapes, topographic position and local topography are often described as important parameters for determining where settlements, ritual sites, military or defensive structures and so on, were situated in the landscape. (De Reu et al., 2011: 3435).

Among the topographical parameters discussed in Section 7.3, terrain ruggedness was used to investigate the fortresses' functions since the chi-square test showed clearly that the fortresses' ruggednesses are not randomly distributed. Vitruvius, the well known Roman architect, civil and military engineer, noted that fortifications should be on an uneven ground to impede access to them (Vitruvius, V. 2). Although terrain ruggedness affects access to fortresses, it is expected to differ depending on their function. For example, a fortress located in a narrow passage should be surrounded with different terrain characteristics than a fortress overlooking a large area.

7.4.2.1.Results

Descriptive statistics for the TRI values of each fortress vicinity are shown in Table 7.6, together with the individual TRI values of fortresses. Among the fortresses, Boğazkesen has the largest variation of TRI values for its vicinity with minimum of 0 m, maximum of 66.5 meters and standard deviation of 5.7 meters. On the other hand, Muratkolu has the smallest variation of TRI values for its vicinity with minimum of 0 meters, maximum of 21.3 meters and standard deviation of 2.4 meters.

The histograms of the fortress vicinities display three types of distributions: distributions where small TRI values are dominant, or vice versa, and distributions where middle values occur more frequently. Therefore, median values are considered better for classifying the TRI distributions of the fortresses' surroundings. Based on this classification (Table 7.7), seven of the fortress vicinities and six of fortresses were on level to nearly level terrain. Of 57 fortress vicinities, 41 were are categorized as rugged terrain, but only 22 of fortresses themselves are on rugged terrain. Only 9 fortress vicinties were on highly rugged terrain. On the other hand, 29 of 57 fortresses themselves are setting on a highly rugged terrain.

Table 7.6 Descriptive statistics of TRI values for the fortress vicinities and their individual TRI values

Id	Name	Vicinity						Fortress
		Min	Max	Mean	Std	Range	Median	Value
1	Çördük	0	30.02	5.30	3.28	30.02	4.82	5.50
2	Geyras	0	30.02	5.51	3.32	30.02	5.09	6.19
3	Tokat	0	30.02	5.57	3.33	30.02	5.24	6.05
4	Karagöz	0	35.68	6.50	3.32	35.68	6.21	5.50
5	Arhoy	0	27.76	5.48	3.31	27.76	4.99	9.60
6	Küçükbağlar	0	25.52	4.48	3.51	25.52	3.74	6.64
7	Amasya	0	40.22	5.92	4.52	40.22	5.05	7.45
8	Muratkolu	0	21.30	4.07	2.39	21.30	3.75	3.06
9	Gerdekkaya	0	32.66	2.80	2.56	32.66	2.07	6.62
10	Kurulkayası	0	37.15	8.50	5.01	37.15	7.83	6.00
11	Kaleköy	0	40.22	7.18	4.48	40.22	6.67	8.22
12	Kaledere	0	34.80	4.32	3.63	34.80	3.60	7.94
13	Turhal	0	36.57	4.90	3.81	36.57	4.32	3.68
14	Zile	0	29.46	3.73	2.71	29.46	3.14	2.96
15	Boğazkesen	0	66.51	6.83	5.58	66.51	5.66	4.53
16	Niksar	0	29.17	5.43	3.82	29.17	4.88	6.69
17	Salarköy	0	31.69	5.23	3.52	31.69	4.51	5.17
18	Boyabat	0	29.38	4.29	2.80	29.38	3.81	10.72
19	Tependeliği	0	69.04	7.75	3.95	69.04	7.21	5.82
20	Cıngırt Kayası	0	38.81	6.13	3.59	38.81	5.57	2.34
21	Kaleköy	0	31.30	5.59	3.62	31.30	5.03	7.26
22	Kapıkaya	0	69.04	8.55	4.43	69.04	8.32	13.42
24	Çürük	0	28.47	4.10	2.61	28.47	3.58	7.61
25	Kaletepe	0	29.90	5.42	3.57	29.90	4.63	12.89
26	Asarkaya	0	28.13	6.47	3.14	28.13	6.08	8.91
27	Kazankaya	0	55.81	5.16	3.52	55.81	4.54	10.31
29	Gölköy	0	34.90	8.81	4.13	34.90	8.37	13.77
30	Kayrak	0	37.06	5.64	3.84	37.06	5.08	5.77
31	Hisarkavak	0	30.35	4.62	3.25	30.35	3.92	4.44
32	Arık Musa	0	31.30	7.12	3.58	31.30	6.64	3.39
33	Sazak	0	29.70	4.03	2.88	29.70	3.44	10.24
34	Kızlarkayası	0	26.23	4.16	2.57	26.23	3.67	2.32
35	Osmancık	0	37.49	5.34	3.60	37.49	4.91	6.60
36	Gökçeli	0	30.35	5.44	3.50	30.35	4.91	8.04
37	Donalar	0	23.64	3.90	3.20	23.64	2.87	7.19
38	Kevgir	0	36.48	8.43	3.85	36.48	8.00	5.87
39	Esatlı	0	37.21	5.82	3.84	37.21	5.10	4.16

Table 7.6 (continued)

40	Terelek	0	221.47	7.58	4.65	221.47	7.29	16.06
42	Bükse	0	32.86	4.98	3.13	32.86	4.44	6.16
43	Yukarı Arım	0	221.47	5.71	4.34	221.47	4.88	5.04
44	Camisa	0	25.69	3.14	2.74	25.69	2.40	5.52
46	Kunduz	0	19.76	3.69	2.51	19.76	3.27	3.12
47	Akçakale	0	26.03	4.06	2.66	26.03	3.51	4.63
48	Deliktepe	0	25.69	3.11	2.70	25.69	2.40	4.95
49	Kümbet	0	21.36	3.90	2.55	21.36	3.36	4.36
50	Hafik	0	26.97	3.19	3.16	26.97	2.08	6.99
51	Ermelik	0	24.37	3.43	2.53	24.37	2.85	5.25
52	Çukurhan	0	47.13	6.59	3.82	47.13	5.86	15.55
53	Basamaklı Geçit	0	49.23	6.51	4.77	49.23	5.63	10.74
54	Simeri	0	49.23	7.10	4.96	49.23	6.47	10.55
402	Osmaniye	0	41.58	4.78	3.34	41.58	4.13	7.72
403	Katır Mağarası	0	26.92	5.32	3.59	26.92	4.76	1.65
404	Simali	0	23.87	4.58	2.85	23.87	4.02	12.57
405	Kaleboğazı	0	30.35	3.39	2.88	30.35	2.61	9.55
406	Eğrikale	0	221.47	7.72	4.65	221.47	7.48	10.54
407	İskilip	0	34.29	5.53	3.46	34.29	4.98	6.71
408	Gavurkayası	0	31.71	6.01	3.91	31.71	5.22	2.65

Table 7.7 Summary of TRI classes for fortress vicinities and fortreses.

TRI Values (m)	Classes	Fortress Vicinity (15 km)	Fortress
≤ 3.1	Level – Nearly Level	7	6
3.1 – 6.6	Rugged	41	22
≥ 6.6	Highly Rugged	9	29
	TOTAL	57	57

The fortresses’ surroundings have different terrain characteristics, expectedly, relating to their functions. The terrain ruggedness map and histogram of Gerdekkaya and Basamaklıgeçit are shown in Figure 7.31 as an example. Gerdekkaya is largely surrounded by level to nearly level terrain, and the fortress itself stands on a 6.6 meter TRI. Basamaklı Geçit is surrounded by rugged terrain, and the fortress itself stands on a 10.7 meter TRI. These results will be incorporated with the results of viewshed analysis in Section 7.4.4 for a preliminary classification of fortress functions.

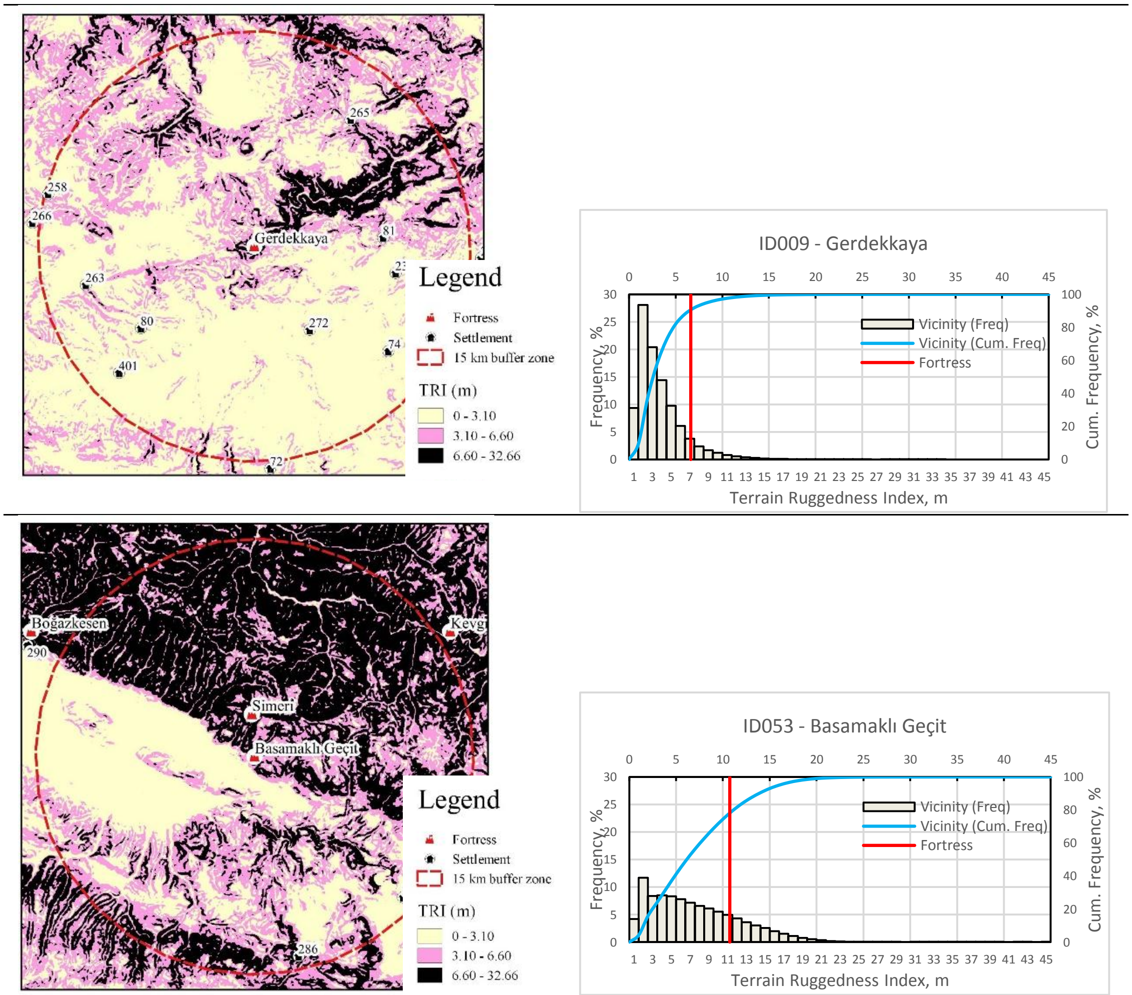


Figure 7.32 An example showing how TRI values are distributed differently for fortresses and their surrounding terrain.

7.4.3. A Viewshed Analysis of the Roles and Functions of Fortresses in the Mithradatic Kingdom

Despite limitations in the representativeness of terrain models and challenges involved in evaluating the multivariate data that pertains to site location, viewshed data permits investigators to evaluate patterns of site locations in new ways that better conform to human decision-making criteria.

Visibility analysis is thus an important element in the interpretation and understanding of the landscape use of past societies. It can help analyze the spatial distribution of features in the landscape or help determine why a particular site was in a particular place (Gillings and Wheatley, 2001: 26). The purpose of visibility analysis in landscape archaeology is to explore the visual organization of features across a landscape and examine their mutual relationships to the surrounding environment and physical and cultural landscape features (Lake and Woodman, 2003: 691).[207]

Viewshed analysis is a valuable tool because it helps to reconstruct the areas of visibility available from different fortifications at micro and macro scales. It is an application of areal procedures in archaeological GIS for revealing visual dominance and territoriality (Ebert, 2004: 320).

This study used viewshed analysis to determine fortresses' functions (defensive or administrative) and interactions and to establish the likelihood of defense systems based on visibility between fortresses. Viewshed analysis is commonly employed in archaeological studies of fortresses to interpret regional landscapes.

Studies of Mantineia, located in Peloponnessos, examine the viewshed relationships of watchtowers and fortresses to each other and to settlement structures. The defensive constructions in the valley of Mantineia were found to be specifically located with mutual visibility as the primary consideration (Topouzi et al., 2001: 562). According to this analysis, the watchtowers were built to monitor the plains and the roads.

Smith and Cochrane's study of the western islands of Fiji reveals that visibility is essential for placing defensive sites that protect highly fertile lands (2011: 76). To figure

[207] Lake and Woodman provide historical background about the usage of GIS' visibility option. Their work explores in depth: adapting landscape into archaeological discourse, the increase in GIS applications, presenting a more diversified point of view in processual and post-processual studies using GIS and archaeological visibility (Lake & Woodman, 2003: 694).

out whether views of fertile lands were important for fortress site selection, they investigated the amount of agricultural land within their viewsheds.

Viewshed analysis is based on the line of sight function. The analysis helps to calculate the visible territory from a single point by drawing lines of sight to all points in the surrounding area (Figure 7.33). If the line of sight to a point is interrupted, it means that the point is hidden. Otherwise, it will be visible. This study's viewshed calculations did not consider fortresses as single vantage points since it is inaccurate to assume that a fortress would have a single static surveillance point. Instead, polygons were drawn on top of the fortresses and line of sights was calculated from all points within them to generate a cumulative viewshed. GIS software[208] performs a series of line-of-sight calculations from the boundary polygon location's cell to every other cell in the study area.

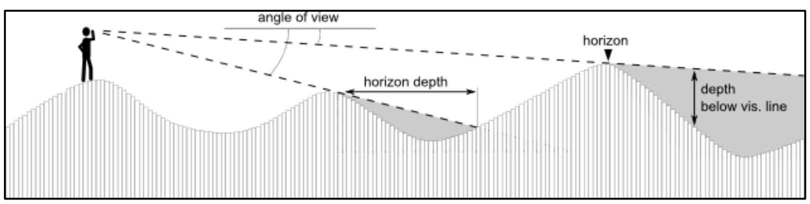


Figure 7.33 Represenatation of line-of-sight

The fortresses were mapped according their coordinates, and the elevations of the fortresses were increased by ten meters to obtain a plausible height for viewshed analysis (Vitruvius, V.2). Representation of the fortresses as a single point on the map would have produced inaccurate results. A study of watchtowers in the territory of Sagalassos has proven that analysis done with multiple viewpoints produces more accurate results than a single-point representation (Loots et al., 1999: 82-5). The viewsheds were calculated from the observation points that were studied (i.e., the watchtowers themselves), and they reveal the extent of visibility in the surrounding area from the observation points.

[208] QGIS 2.10 Pisa was used to perform the viewshed analysis.

This study defined a viewshed as the area that can help to understand the interaction of the fortresses with each other and their close vicinity (assumed to be an area with a 15 kilometer radius). Viewshed analysis was carried out from 25 points in the 250 square meter areas that represents the fortress, so the viewshed raster of each fortress is cumulative, not binary. The raster values range from 1 to 25.

The arable land map is a representation of agricultural potential around the fortress. The intersection of arable pixels with visible pixels for each fortress indicates the visible and arable lands, the agricultural activities of which could have been subjected to the fortress's direct control.

7.4.3.1.Results

Viewshed, arable land, visible arable land maps for each fortress are in Appendix 1. The percentage of visible, arable and visible arable land was calculated for each fortress as follows:

- Visible area %=100 x (visible pixel count x area of each pixel) / total area
- Arable area %=100 x (visible arable count x area of each pixel) / total area
- Visible arable area %=100 x (visible arable pixel count x area of each pixel) / total area

The percentages are shown in Table 7.8.

Table 7.8 Percentages of visible, arable and visible arable lands of fortresses

ID	Name	Visible area %	Arable area %	Visible arable area %
1	Çördük	2.34	14.05	0.10
2	Geyras	5.60	13.23	0.87
3	Tokat	6.55	13.35	1.01
4	Karagöz	5.48	5.43	0.38
5	Arhoy	0.61	10.36	0.01
6	Kale	12.61	23.16	3.99
7	Amasya	5.67	23.67	0.30
8	Muratkolu	6.57	11.82	0.74
9	Gerdekkaya	1.06	34.07	0.04

Table 7.8 (continued)

10	Kurulkayası	18.68	0.00	0.00
11	Kaleköy	6.31	16.44	1.51
12	Kaledere	25.64	31.44	17.18
13	Turhal	13.11	25.40	3.70
14	Zile	17.31	40.48	10.86
15	Boğazkesen	3.63	22.47	1.14
16	Niksar	21.60	14.86	10.27
17	Salarköy	15.41	11.09	4.18
18	Boyabat	10.26	11.58	1.95
19	Tependeliği	0.59	15.21	0.01
20	Cıngırt Kayası	1.78	0.04	0.00
21	Kaleköy	2.42	2.30	0.16
22	Kapıkaya	1.44	5.54	0.00
24	Çürük	12.37	26.72	4.56
25	Kaletepe	23.26	27.11	15.14
26	Asarkaya	2.03	5.07	0.68
27	Kazankaya	11.56	15.91	1.93
29	Gölköy	3.90	0.14	0.02
30	Kayrak	6.77	19.83	1.75
31	Hisarkavak	9.97	23.68	1.06
32	Arık Musa	1.17	0.00	0.00
33	Sazak	11.99	23.09	4.35
34	Kızlarkayası	16.13	25.09	6.61
35	Osmancık	10.00	15.29	2.15
36	Gökçeli	30.21	15.95	6.48
37	Donalar	2.42	27.75	0.54
38	Kevgir	1.21	1.05	0.00
39	Esatlı	1.40	0.00	0.00
40	Terelek	4.44	5.98	0.00
42	Bükse	13.86	16.53	3.17
43	Yukarı Arım	1.28	7.14	0.18
44	Camisa	14.17	24.56	5.02
46	Kunduz	0.77	20.31	0.04
47	Akçakale	0.45	18.49	0.01
48	Deliktepe	15.58	24.59	6.02
49	Kümbet	3.32	16.28	0.76
50	Hafik	24.57	30.61	11.80
51	Ermelik	14.85	29.74	4.08
52	Çukurhan	3.66	7.79	0.08
53	Basamaklı Geçit	18.58	16.62	7.46
54	Simeri	16.08	13.85	7.24
402	Osmaniye	12.50	10.51	3.62
403	Katır Mağarası	25.27	14.37	8.38
404	Simali	9.37	19.73	1.15
405	Kaleboğazı	6.56	41.80	4.29
406	Eğrikale	13.65	7.93	1.02
407	İskilip	2.95	23.50	0.76
408	Gavurkayası	2.60	13.31	0.71

In order to find out the potential pattern for topographical position and control over agricultural fields, visibility, arable land and visible arable land histograms were plotted, and statistics were calculated for each parameter (Figure 7.33 and Table 7.9).

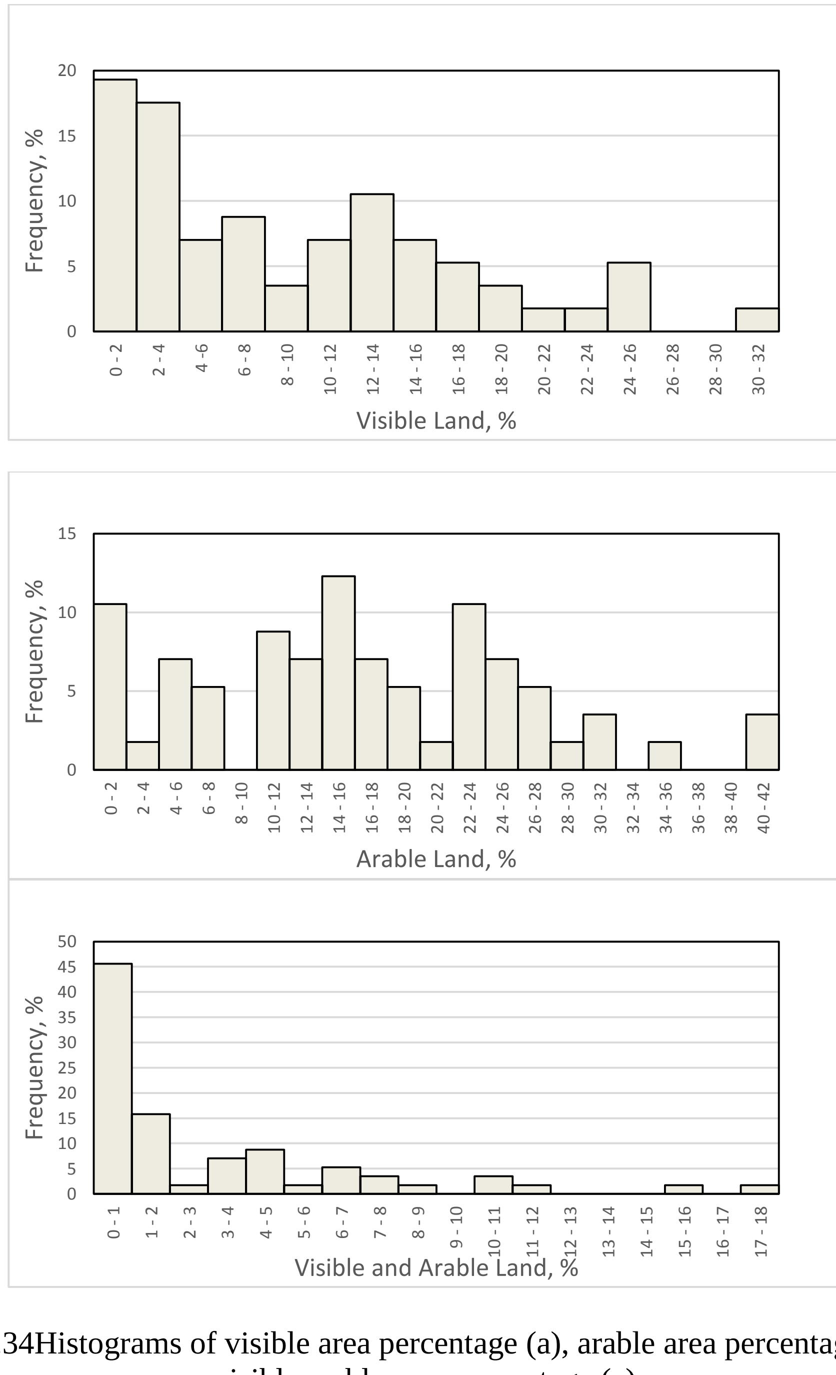


Figure 7.34Histograms of visible area percentage (a), arable area percentage (b) and visible arable area percentage (c)

Table 7.9 Summary of visibility analysis results

	Visible area %	Arable area %	Visible arable area %
Mean	9.36	16.43	2.97
Standard Error	1.03	1.35	0.53
Median	6.57	15.91	1.03
Standard Deviation	7.75	10.16	3.97
Sample Variance	59.99	103.30	15.73
Kurtosis	-0.20	-0.22	3.19
Skewness	0.79	0.28	1.81
Range	29.76	41.80	17.18
Minimum	0.45	0.00	0.00
Maximum	30.21	41.80	17.18
Count	57.00	57.00	57.00
Confidence Level (95 %)	2.06	2.70	1.05

The histogram of visible area shows that most of the data is on the left side of the histogram. The five fortresses that have the largest visible areas are: Gökçeli (30.21), Kaledere (24.64), Katırmağarası (25.27), Hafik (24.57) and Kaletepe (23.26). Akçakale (0.45), Tependeliği (0.59), Arhoy (0.61), Kunduz (0.77) and Gerdekkaya (1.06) are five fortresses that have small visible areas.

The arable area percentages vary from Kurulkayası, Arıkmusa and Esatlı, which all have zero percent arable area in their 15 kilometer vicinity to Kaleboğazı, which has 41.80 % arable area. The arithmetic mean is 16.45, standard deviation is 10.16, and the median is 15.91 for arable land distribution. Arable area distribution shows a nearly normal distribution. Kaleboğazı (41.80), Zela (40.48), Gerdekkaya (34.07), Kaledere (31.44) and Hafik (60.61) are the five fortresses that have largest arable area percentages and Kurulkayası (0), Arıkmusa (0), Esatlı (0), Cıngırtkayası (0.04) and Gölköy (0.14) are the fortress with least arable area in their vicinities.

Calculated visible areas ranges from Arhoy, Kurulkaya, Tependeliği, Cıngırt Kayası, Kapıkaya, Gölköy, Arık Musa, Kevgir, Esatlı and Terelek fortresses, which all have zero percent visible arable land in their 15 kilometer vicinity, to Kaledere, which has a 17.18 visible arable land percentage. The arithmetic mean is 2.97, the standard deviation is 3.97, and the median is 1.03 for visible arable land distribution.

The histogram shows that most of the fortresses have visible arable area percentages close to zero. Kaledere (17.18), Kaletepe (15.14), Hafik (11.80), Zela (10.86) and Niksar (10.27) are the five fortresses that have the largest visible arable area percentages. Kurulkaya, Cıngırt Kayası, Kapıkaya, Arık Musa, Kevgir, Esatlı and Terelek all have no visible arable area in their vicinities. The fortresses with 0% visible arable land are likely to have been established for solely defensive purposes. In fact, they are located in very narrow valleys and mountainous coastlines.

The parameters investigated are very useful for relating the geographical positions of fortresses to their vicinity. Viewsheds can be thought as an essential part of the rural landscape and considered to be a useful tool for understanding the spatial distribution of archaeological sites. In this section I tried to clarify the relationships between fortress's visibility and potential agricultural lands.

A sheet was prepared for each fortress based on the parameters in Appendix 1 and their topographic features were compiled. Here, Gerdekkaya and Basamaklı Geçit are two explanatory examples that will be discussed.

Gerdekkaya is one of the fortresses that has a large arable area (34.07) indicating its agricultural potential. (Figure 7.35). It also has relatively average visible area (1.06) due to its topographical position. The intersection of visible and arable lands, visible arable area is 0.04 is quite low.

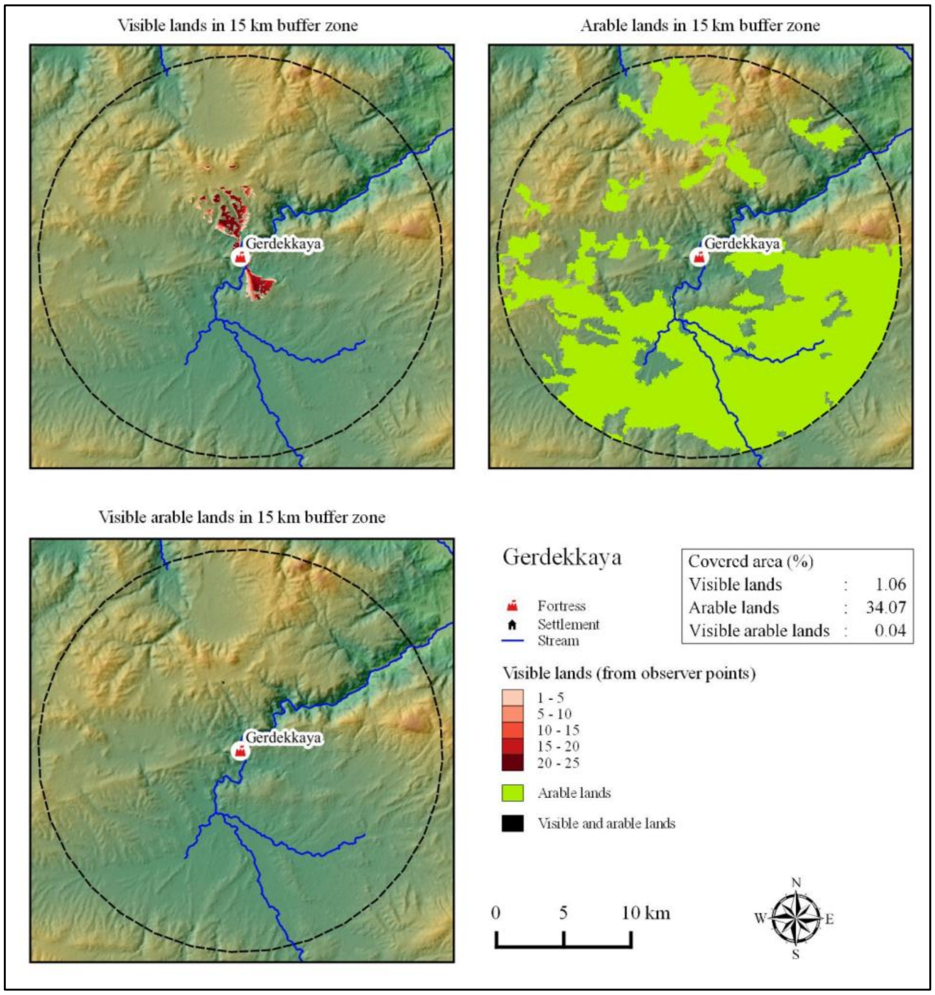


Figure 7.35 Visibility results for Gerdekkaya

Basamaklı Geçit is located on the Kelkit Valley has 16.62 percent arable land in its 15 kilometer vicinity (Figure 7.36). Its visible area percentage is large at 18.58. The visible arable area percentage for Basamaklı Geçit is 7.46.

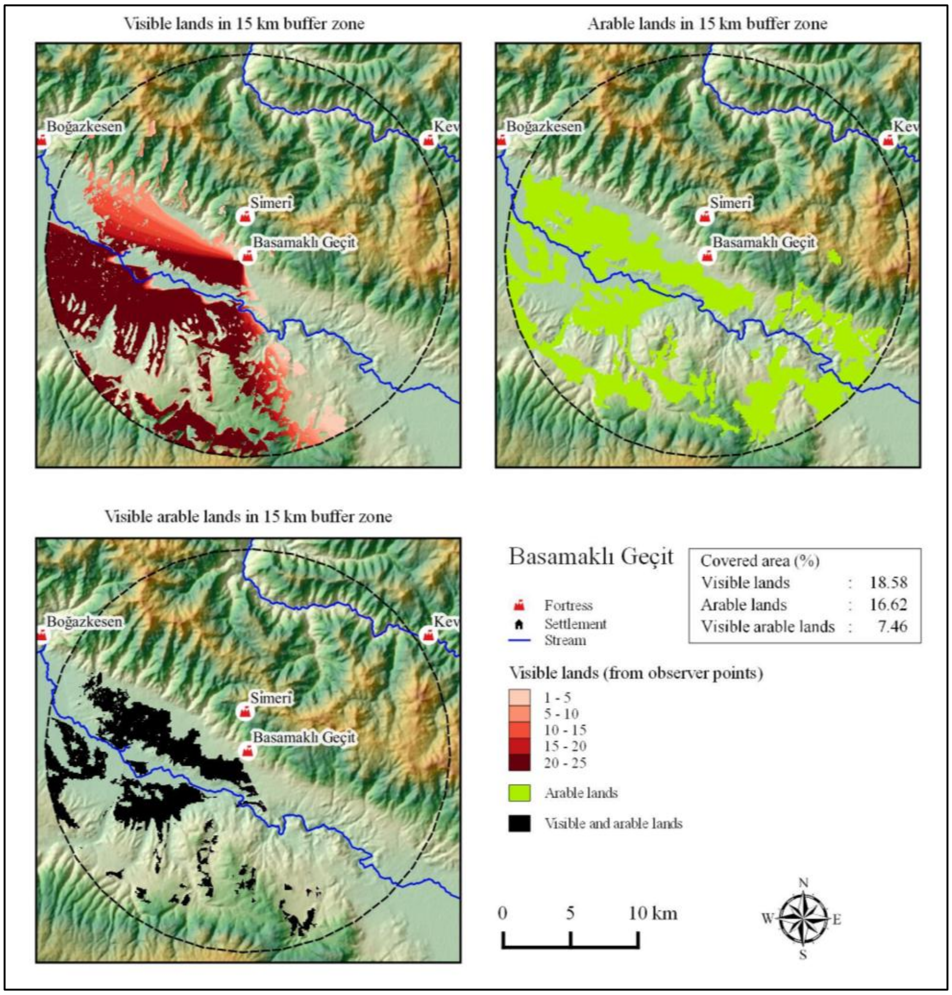


Figure 7.36 Visibility results for Basamaklı Geçit

Although Gerdekkaya has vast areas of agricultural land in its surroundings the amount of available agricultural lands within its limits of visibility is small. This prevented an identification of the function of the fortress. The case of Basamaklı Geçit is easier. The fortress is situated at a location that controls agricultural lands in its southwest. Therefore, the visibility values and the amount of agricultural lands within its area of visibility are large, indicating that the fortress also had an administrative function.

Topographical position, agricultural potential and controlling agricultural areas were discussed within the scope of viewshed analysis of fortresses. The results are important for the determining the possible different functions of the fortresses. Gedekkaya and

Basamaklı Geçit are two selected cases that may indicate different fortress functions.

7.4.4. A Preliminary Classification of the Fortresses

In this section of the dissertation, a preliminary classification is carried out to understand possible functions of the fortresses. Two different methods were used: decision making analysis and cluster analysis.

7.4.4.1. Decision Making Analysis

The results of individual topographical and viewshed analyses revealed that there are clear similarities and differences for fortress site selection. The results of both studies are incorporated using basic decision-making tool, the weighted sum model.

Since information on the function of the fortresses is limited, four attributes (terrain ruggedness, visibility in a 15 kilometer buffer zone, arable land and visible arable land) were used as criteria and evaluated for two alternatives, administrative or defensive, like Kolb's study. This division is thoroughly discussed in chapter 1. Here, the administrative function is considered to include residence, guarding properties, managing agricultural production and the like, whereas the defensive function is considered to include controlling strategic locations, natural passages and communication routes. A decision matrix was created. The effect of each attribute on fortress function was considered to be equal. In other words, no weight was given to any attribute. The administrative function was scored as 1, and the defensive function was scored as 0. For instance, if the arable land percentage was greater than 16% around a fortress, it was deemed that the function of fortress should be closer to administrative, and it was scored as 1. Fortresses with less than 16% arable land around them were scored as 0.

Since each attribute is evaluated for two alternatives, half of the fortresses were scored as administrative, and the other half as defensive based on the literature and common intuition. In other words, median values were used as threshold values (Figure. 7.37). In the end, each fortress received 4 scores with different combinations of administrative and defensive scores. Afterwards, the weighted sums of their scores were calculated, and the function of each fortress was finally assigned as administrative (ADM) or defensive (DEF) or not determined (ND).

The median value for terrain ruggedness was 4.88 meters. Fortress vicinities with less than 4.88 meter TRI values were considered to be administrative and scored as 1. Defensive fortresses that control natural passages or have a good view of their surroundings were expected to be situated on more rugged terrain than administrative fortresses, which were expected to be more related to settlements, arable lands, trade and the like.

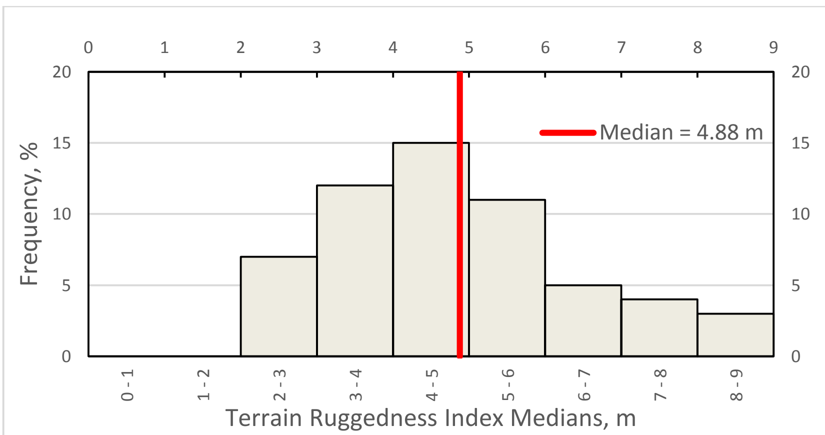
Higher visibility from a fortress within the buffer zone was considered more critical for the defensive function than the administrative. Hence, fortresses with more than 6.57% visibility in the buffer zone were assigned a defensive function (0).

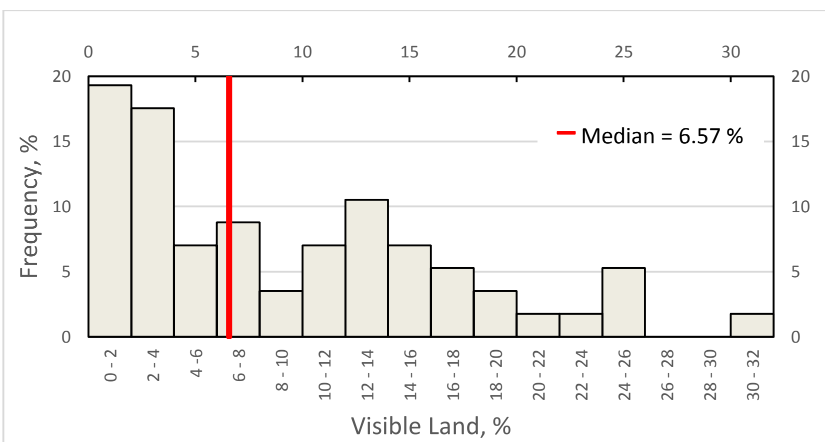
The median value of the percentage of arable land in the buffer zone of the fortresses was 15.29. More arable land is clearly expected around the fortresses with an administrative function due to their role of guarding properties and close relations to settlements. The fortresses were scored accordingly.

Even though the amount of arable land available in a buffer zone was considered as one of the decision criteria, its visibility may also be an indication of administrative function or defensive function. To determine the function of fortresses (ADM or DEF), the percentage of visible agricultural land within the buffer zone and the amount of agricultural lands controlled by the fortress are crucial.

The fortresses with more than 1.01% of visible arable land in their buffer zones were scored as 1, administrative. The others were scored as 0 (Figure 7.35).

The decision criteria used are shown in Table 7.10 and example calculations are provided. Finally, the results of the weighted sum of scores and the classification of fortress functions are shown in Table 7.11. Of the 57 fortresses, 25 were classified as administrative, and 21 were classified as defensive. The function of 11 of the 57 fortresses could not be determined. It will be more accurate to interpret the functions of fortresses while taking into account their dispersion throughout the valley. Insights about the regional administrative policies of the Mithradatic kingdom may thus be acquired.





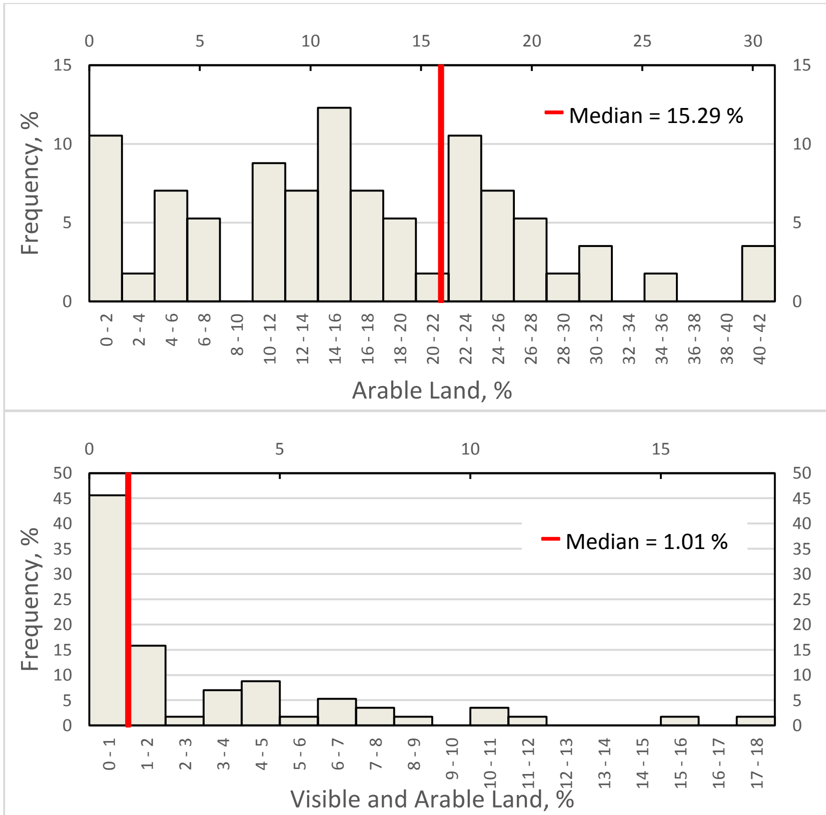


Figure 7.37 Median results of the attributes

Table 7.10Decision criteria

Attribute	Treshold value	Administrative Score 1	Defensive Score 0
Rugg, m	4.88	<	>
Vis Land, %	6.57	<	>
Arb Land, %	15.29	>	<
Vis & Arb Land, %	1.01	>	<

Table 7.11Calculations for Classifications

	Rugg, m	Vis Land, %	Arb Land, %	Vis&Arb Land, %	
Weights	0.25	0.25	0.25	0.25	
	Scores				**Weighted Sum**
Ex1	1	1	1	1	((1*0.25) + (1*0.25) + (1*0.25) + (1*0.25))/1 = 1
Ex2	1	1	1	0	((1*0.25) + (1*0.25) + (1*0.25) + (0*0.25))/1 = 0.75
Ex3	1	1	0	0	((1*0.25) + (1*0.25) + (0*0.25) + (0*0.25))/1 = 0.5
Ex4	1	0	0	0	((1*0.25) + (0*0.25) + (0*0.25) + (0*0.25))/1 = 0.25
Ex5	0	0	0	0	((0*0.25) + (0*0.25) + (0*0.25) + (0*0.25))/1 = 0

One can argue that the assignment of administrative and defensive alternatives to the fortresses could be done differently from this study (Table 7.12). This is a preliminary classification, and this should be noted by future studies when more information is available about the functions of fortresses which are supported with archaeological excavations, plan and size of the fortresses and so on. This preliminary classification can be elaborated, and with GIS analysis the results can be improved and new fortresses can be located.

Table 7.12 Results to Determine Functions of the fortresses

ID	Fortress	Rugg Medians, m	Vis Land, %	Arb Land, %	Vis &Arb Land, %	Scores				Wt. Sum of Scores	Function
						Rugg	Vis Land	Arb Land	Vis & Arb Land		
1	Çördük	4.82	2.34	14.05	0.10	1	0	0	0	0.25	DEF
2	Geyras	5.09	5.60	13.23	0.87	0	0	0	0	0	DEF
3	Tokat	5.24	6.55	13.35	1.01	0	0	0	0	0	DEF
4	Karagöz	6.21	5.48	5.43	0.38	0	0	0	0	0	DEF
5	Arhoy	4.99	0.61	10.36	0.01	0	0	0	0	0	DEF
6	Küçükbağlar	3.74	12.61	23.16	3.99	1	1	1	1	1	ADM
7	Amasya	5.05	5.67	23.67	0.30	0	0	1	0	0.25	DEF
8	Muratkolu	3.75	6.57	11.82	0.74	1	1	0	0	0.5	ND
9	Gerdekkaya	2.07	1.06	34.07	0.04	1	0	1	0	0.5	ND
10	Kurulkayası	7.83	18.68	0.00	0.00	0	1	0	0	0.25	DEF
11	Kaleköy	6.67	6.31	16.44	1.51	0	0	1	1	0.5	ND
12	Kaledere	3.60	25.64	31.44	17.18	1	1	1	1	1	ADM
13	Turhal	4.32	13.11	25.40	3.70	1	1	1	1	1	ADM
14	Zela	3.14	17.31	40.48	10.86	1	1	1	1	1	ADM
15	Boğazkesen	5.66	3.63	22.47	1.14	0	0	1	1	0.5	ND
16	Niksar	4.88	21.60	14.86	10.27	0	1	0	1	0.5	ND
17	Salarköy	4.51	15.41	11.09	4.18	1	1	0	1	0.75	ADM
18	Boyabat	3.81	10.26	11.58	1.95	1	1	0	1	0.75	ADM
19	Tependeliği	7.21	0.59	15.21	0.01	0	0	0	0	0	DEF
20	Cıngırt Kayası	5.57	1.78	0.04	0.00	0	0	0	0	0	DEF
21	Kaleköy	5.03	2.42	2.30	0.16	0	0	0	0	0	DEF
22	Kapıkaya	8.32	1.44	5.54	0.00	0	0	0	0	0	DEF
24	Çürük	3.58	10.78	26.70	3.80	1	1	1	1	1	ADM
25	Sagylion	4.63	23.26	27.11	15.14	1	1	1	1	1	ADM
26	Asarkaya	6.08	2.03	5.07	0.68	0	0	0	0	0	DEF
27	Kazankaya	4.54	11.56	14.09	1.68	1	1	0	1	0.75	ADM
29	Gölköy	8.37	3.90	0.14	0.02	0	0	0	0	0	DEF
30	Kayrak	5.08	6.77	19.83	1.75	0	1	1	1	0.75	ADM
31	Hisarkavak	3.92	9.97	23.68	1.06	1	1	1	1	1	ADM
32	Arık Musa	6.64	1.17	0.00	0.00	0	0	0	0	0	DEF
33	Sazak	3.44	11.99	23.09	4.35	1	1	1	1	1	ADM

Table 7.12 (continued)

34	Kızlarkayası	3.67	16.13	22.24	0.15	1	1	1	0	0.75	ADM
35	Osmancık	4.91	10.00	15.29	2.15	0	1	1	1	0.75	ADM
36	Gökçeli	4.91	30.21	15.95	6.48	0	1	1	1	0.75	ADM
37	Donalar	2.87	2.42	27.75	0.54	1	0	1	0	0.5	ND
38	Kevgir	8.00	1.21	1.05	0.00	0	0	0	0	0	DEF
39	Esatlı	5.10	1.40	0.00	0.00	0	0	0	0	0	DEF
40	Terelek	7.29	4.44	5.98	0.00	0	0	0	0	0	DEF
42	Bükse	4.44	13.86	16.53	3.17	1	1	1	1	1	ADM
43	Yukarı Arım	4.88	1.28	7.14	0.18	0	0	0	0	0.25	DEF
44	Camisa	2.40	14.17	24.56	5.02	1	1	1	1	1	ADM
46	Kunduz	3.27	0.77	20.31	0.04	1	0	1	0	0.5	ND
47	Akçakale	3.51	0.45	18.49	0.01	1	0	1	0	0.5	ND
48	Deliktepe	2.40	15.58	24.59	6.02	1	1	1	1	1	ADM
49	Kümbet	3.36	3.32	16.28	0.76	1	0	1	0	0.5	ND
50	Hafik	2.08	24.57	30.61	11.80	1	1	1	1	1	ADM
51	Ermelik	2.85	14.85	29.74	4.08	1	1	1	1	1	ADM
52	Çukurhan	5.86	3.66	7.79	0.08	0	0	0	0	0	DEF
53	Basamaklı Geçit	5.63	18.58	16.62	7.46	0	1	1	1	0.75	ADM
54	Simeri	6.47	16.08	13.85	7.24	0	1	0	1	0.5	ND
402	Osmaniye	4.13	12.50	10.51	3.62	1	1	0	1	0.75	ADM
403	Katır Mağarası	4.76	25.27	14.37	8.38	1	1	0	1	0.75	ADM
404	Simali	4.02	9.37	19.73	1.15	1	1	1	1	1	ADM
405	Kaleboğazı	2.61	6.56	41.80	4.29	1	0	1	1	0.75	ADM
406	Eğrikale	7.48	13.65	7.93	1.02	0	1	0	1	0.5	ND
407	İskilip	4.98	2.95	23.50	0.76	0	0	1	0	0.25	DEF
408	Gavurkayası	5.22	2.60	13.31	0.71	0	0	0	0	0	DEF

7.4.4.2. The Hierarchical Cluster Analysis (SPSS ANALYSIS)

Hierarchical cluster analysis was used as another method to investigate the classes of the fortresses. It is a widely used statistical technique in archaeology and in other natural and social sciences (Clarke, 1968: 13). The primary aim of cluster analysis is to identify previously unknown natural groups of cases. Cases (for us, fortresses) are grouped according to similarities between the attributes under consideration. In hierarchical cluster analysis, objects are clustered step by step until all objects, and clusters are joined in a complete classification tree. Objects are linked by similar attributes.

There are three basic steps that should be aware of while performing the hierarchical cluster analysis. The first one is distance measurement. The similarity between cases and attributes is determined by distance measurement. Distance measurement defines the formula for calculating distance. Squared Euclidian distance was used in this study. The second one is the clustering method that defines the rules for cluster formation. Intergroup linkage was used as the clustering method. In this method, the distance between clusters is the average distance of all data points within them. The final parameter is standardization. It is an optional parameter that organizes the effect of variables. Z score standardization was applied to equalize the effect of variables measured on different scales.

The same variables were used in the cluster analysis and the decision-making analysis to be able to compare their results. Cluster analyses were performed using intergroup linkage with squared Euclidian distance interval on SPSS 20 software. First, the analysis was performed for variables, and then for cases.

The similarity between variables is shown in Figure 7.38. According to the results, visibility and visible arable land has the closest distance. In other words, they were more similar than the other variables. Then, arable land was similar to visibility and visible arable land. Median TRI was the least similar to the other variables.

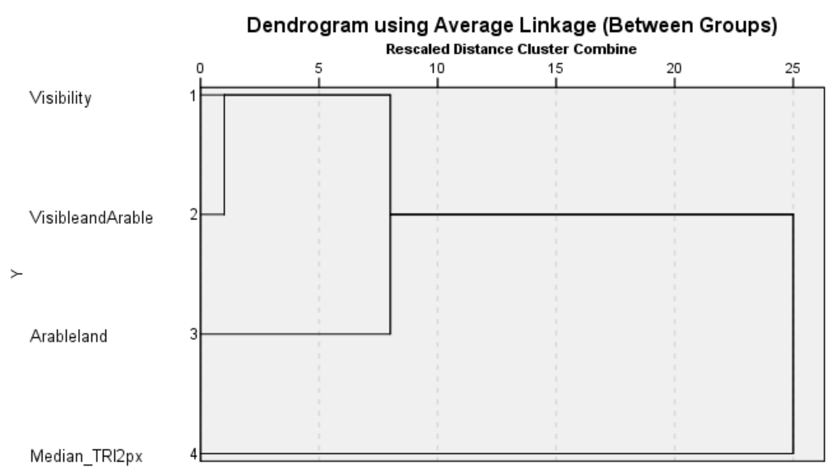


Figure 7.38 Dendrogram for the variables

The similarity between fortresses was calculated and plotted as shown in Figure 7.39. There are two groups (A and B), and group B has further subgroups (B1, B2m, B2n and

B2o).

Group A is separated from B by a percentage of high visible arable land. In general, group A has higher visibility than the others, but not necessarily more arable land than the others (Basamaklı Geçit, Simeri, Cabeira, Katırmağarası, Gökçeli, Kaledere, Kaletepe, Zile and Hafik). This group can be associated with agricultural activities and human occupation of their vicinities

Group B is divided into two subgroups, B1 and B2, and B2 is divided into three subgroups (B2m, B2n and B2o). Groups B1 and B2 differ by terrain ruggedness and percentage of arable land in the 15 kilometer buffer zone. Group B1 is surrounded by rugged to highly rugged terrain. Group B1 also has a much lower percentage of arable land percentage than group B2. Group B1 somewhat low visibility over the land. Defensive attributes seem to be characteristic of group B1. The fortresses in B1 (Kurulkayası, Eğrikale, Kaleköy, Esatlı, Cıngırtkayası, Asarkaya, Çukurhan, Arıkmusa, Gölköy, Kevgir, Kapıkaya and Terelek) look like they were surrounded with difficult terrain and watching over limited amounts of land. These fortresses were also identified as defensive by the previous analysis based on visibility. According to the dendrogram, the B2o group fortresses, Gerdekkaya, Donalar and Kaleboğazı, were less similar to the B2m and B2n subgroups. The B2o fortresses differ from the B2m and B2n by having level or nearly level terrain around them and by having high percentages of arable land. However, this group has low visibility over the land and are not particularly overlooking arable land, either. It is difficult to attribute any function to them. Among the B2 group, the B2m subgroup has high visibility over the land, high percentages of both visible arable land and level or nearly level to rugged terrain compared to the others. All the characteristics of this group seem be associated with agricultural activities and human occupation of their vicinities. Finally, the B2n subgroup fortresses have moderate amounts of arable land, low visibility over the land, overlook little of this arable land and are surrounded with more rugged terrain. This subgroup seems to have defensive characteristics, but not very clearly.

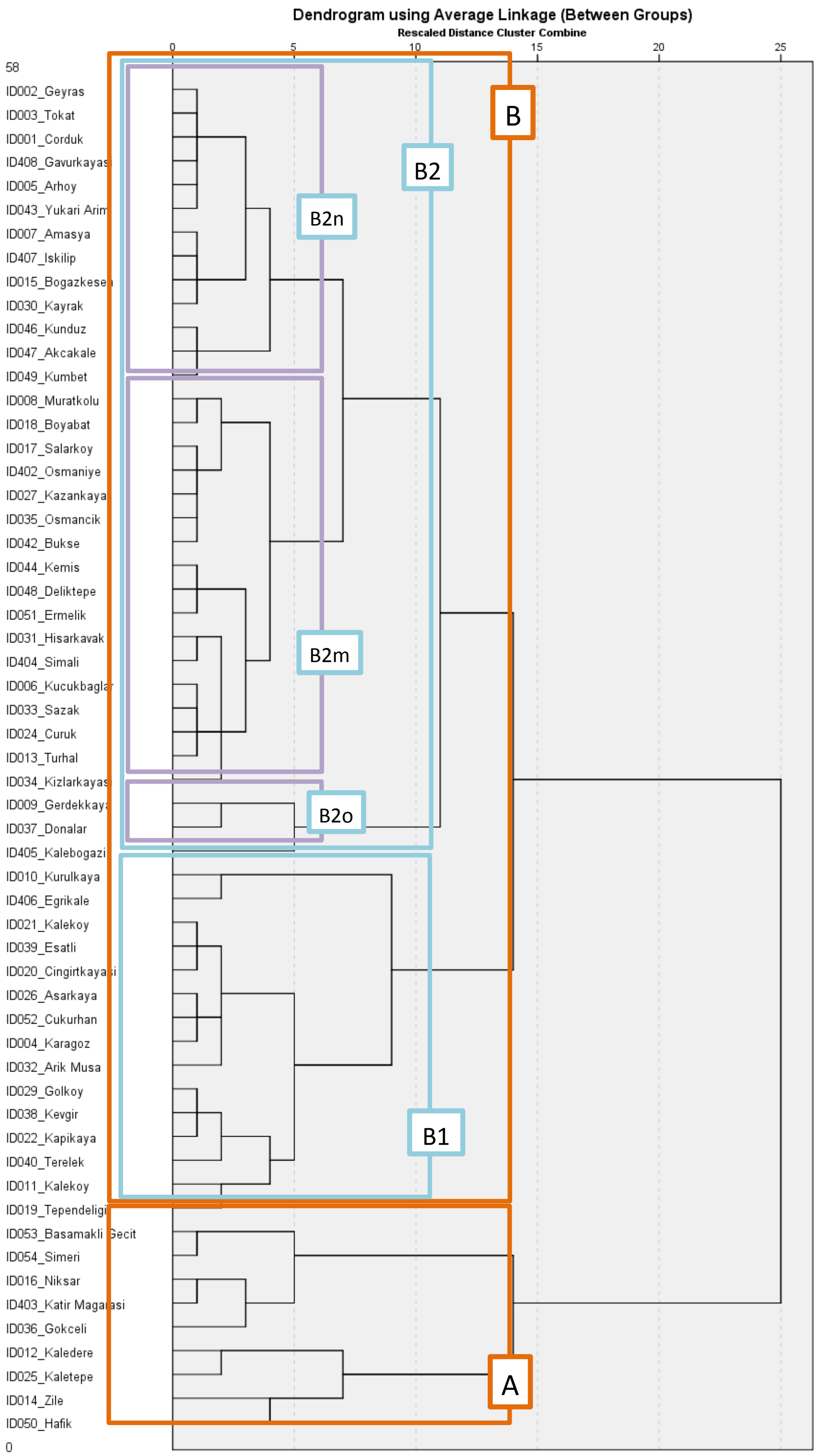


Figure 7.39 Cluster analysis results for fortresses

7.4.4.3. A Comparison of the Decision Making Analysis and the Cluster Analysis

The preliminary fortress classes formed using decision making analysis and cluster analysis are significantly similar. A summary of both analyses' results and characteristics of the fortresses groups is shown in Table 7.13.

Table 7.13 Comparison of decision making analysis and hierarchical cluster analysis results

FORTRESSES	DECISION MAKING ANALYSIS		HIERARCHICAL CLUSTER ANALYSIS	CHARACTERISTICS
	CLASSES	SUM OF SCORES	CLASSES	
ID012_KALEDERE	ADM	1	A	• Moderate to high arable land • High visibility over the land • Highest visible and arable land availability • In general, higher TRI value for individual fortresses compared to median TRI value of 15 km buffer zone
ID014_ZILE	ADM	1		
ID016_NIKSAR	ND	0.5		
ID025_KALETEPE	ADM	1		
ID036_GOKCELI	ADM	0.75		
ID050_HAFIK	ADM	1		
ID053_BASAMAKLI GECIT	ADM	0.75		
ID054_SIMERI	ND	0.5		
ID403_KATIR MAGARASI	ADM	0.75		
ID004_KARAGOZ	DEF	0	B1	• Lowest arable land availability • Low visibility over the land • Hardly visible and arable land • Highly rugged terrain
ID010_KURULKAYA	DEF	0.25		
ID011_KALEKOY	ND	0.5		
ID019_TEPENDELIGI	DEF	0		
ID020_CINGIRTKAYASI	DEF	0		
ID021_KALEKOY	DEF	0		
ID022_KAPIKAYA	DEF	0		
ID026_ASARKAYA	DEF	0		
ID029_GOLKOY	DEF	0		
ID032_ARIK MUSA	DEF	0		
ID038_KEVGIR	DEF	0		
ID039_ESATLI	DEF	0		
ID040_TERELEK	DEF	0		
ID052_CUKURHAN	DEF	0		
ID406_EGRIKALE	ND	0.5		
ID006_KUCUKBAGLAR	ADM	1	B2m	• Moderate to high arable land • High visibility over the land • Second highest visible and arable land availability • Level-nearly level and barely rugged terrain
ID008_MURATKOLU	ND	0.5		
ID013_TURHAL	ADM	1		
ID017_SALARKOY	ADM	0.75		
ID018_BOYABAT	ADM	0.75		
ID024_CURUK	ADM	1		
ID027_KAZANKAYA	ADM	0.75		
ID031_HISARKAVAK	ADM	1		
ID033_SAZAK	ADM	1		
ID034_KIZLARKAYASI	ADM	0.75		
ID035_OSMANCIK	ADM	0.75		

FORTRESSES	DECISION MAKING ANALYSIS		HIERARCHICAL CLUSTER ANALYSIS	CHARACTERISTICS
	CLASSES	SUM OF SCORES	CLASSES	
ID042_BUKSE	ADM	1		
ID044_KEMIS	ADM	1		
ID048_DELIKTEPE	ADM	1		
ID051_ERMELIK	ADM	1		
ID402_OSMANIYE	ADM	0.75		
ID404_SIMALI	ADM	1		
ID001_CORDUK	DEF	0.25	B2n	• Moderate arable land availability • Low to moderate visibility over the land • Hardly visible and arable land • Rugged terrain
ID002_GEYRAS	DEF	0		
ID003_TOKAT	DEF	0		
ID005_ARHOY	DEF	0		
ID007_AMASYA	DEF	0.25		
ID015_BOGAZKESEN	ND	0.5		
ID030_KAYRAK	ADM	0.75		
ID043_YUKARI ARIM	DEF	0.25		
ID046_KUNDUZ	ND	0.5		
ID047_AKCAKALE	ND	0.5		
ID049_KUMBET	ND	0.5		
ID407_ISKILIP	DEF	0.25		
ID408_GAVURKAYASI	DEF	0		
ID009_GERDEKKAYA	ND	0.5	B2o	• Highest arable land availability • Low to moderate visibility • Low to moderate visible arable land • Level-nearly level terrain
ID037_DONALAR	ND	0.5		
ID405_KALEBOGAZI	ADM	0.75		

Group A and subgroup B2m from hierarchical cluster analysis match the fortresses classified as administrative by decision-making analysis. In general, the fortresses grouped in A and B2m are surrounded by agricultural land and overlook the land in their vicinities. It is difficult to separate these groups in terms of function. However, the predominance of their administrative role might be different because, although they have similar characteristics, group A has high percentages of visible land and visible arable land relative to subgroup B2m. Among the not-determined (ND) class of the decision-making analysis, the fortresses, Cabeira, Simeri (Lycus Valley) and Muratkolu (Scylax Valley), appear in these groups. This may be acceptable considering these fortresses' relations with their valleys. The arable land percentage and terrain ruggedness of Niksar and Simeri were considered defensive characteristics in the decision-making analysis. The arable land and visible arable land percentages of Muratkolu were also scored as defensive.

Group B1 from the hierarchical cluster analysis overlaps remarkably well with the fortresses classified as defensive by the decision-making analysis. When looked into the results further, it overlaps more particularly with the defensive fortressses with total scores of zero. Highly rugged terrain, low visibility and low arable land availability in this group suggests defensive characteristics.

Subgroup B2n has a considerable percentage of arable land and overlooks little arable land. On the other hand, low to moderate visibility over the land and rugged terrain may suggest defensive characteristics. It is difficult to suggest a function for these fortresses. When the fortresses classified using decision-making analysis are compared to B2n group, even though defensive fortresses are seen most frequently (Geyras, Tokat, Çördük, Gavukayası, Arhoy, Yukarıarım, Amasya, İskilip), there are still some fortresses that could not be classified (Boğazkesen, Kunduz and Akçakale).

Subgroup B2o differs from all the other groups. The fortresses in this group (Gerdekkaya, Donalar and Kaleboğazı) have the highest arable land percentages, but in comparison they have low visibility. The Gerdekkaya and Donalar fortresses could not be classified using decision-making analysis, whereas Kaleboğazı was classified as administrative.

Both classification methods attained very similar results, but additional variables are needed to understand the function of fortresses in detail. As discussed earlier, distance to water sources and visibility of Roman roads, plans and sizes of fortresses, number of settlements can be listed among potential criteria. The size of the buffer zone and the point locations used for visibility analysis are other factors that affected the results.

7.4.5. Discussion

In the light of the results of above classification and clustering analyses, the fortresses should not be evaluated only by location, but also according to their relation to the valleys on a larger scale, making their functions more comprehensible.

The Amnias Valley

The Gökırmak River flows from west to east through the valley of Amnias. There are six fortresses in this valley: Donalar, Salarköy, Boyabat, Çukurhan, Yukarıarım, Terelek and Eğrikale. The fortresses are situated very close to the Gökırmak and Kızılırmak Rivers and their tributaries. The road through the region also runs from east to west.

Viewshed analysis shows that fortresses had the valley of Gökırmak and most of the main road across the valley in their lines of sight. Donalar, Çukurhan, Yukarıarım, Terelek and Eğrikale protected the passage in their locations. They do not have direct visual relationships with Amnias Valley's agricultural areas. However, the fortresses of Salarköy and Boyabat were situated at positions that provided more visibility over the valley's agricultural areas (Figure 7.40). The fortresses of Terelek, Eğrikale, Çukurhan and Yukarıarım are located within small valleys that connect to the valley of Amnias. Their areas of influence are thus limited to their small valleys. Although function of the Eğrikale fortress could not be determined by the decision-making analysis, the hierarchical cluster analysis classified it as defensive. When topographical information of the fortress is assessed along with the Terelek fortress, it can be suggested that it performed a defensive task, functioning as a control point for river transportation. Boyabat and Salarköy are situated at locations that directly control the Amnias valley. They possess visibility over vast areas of agricultural land. The case for Donalar is more complicated. Although the valley of Amnias is located in an area that has control over agricultural lands, Donalar's visibility is limited because it is situated in the valley of Karadere 10 kilometers north of Amnias. This valley connects the Amnias Valley to the Devrekani Valley. It has control of this passageway. Although it was not classified as such, it could be thought of as defensive.

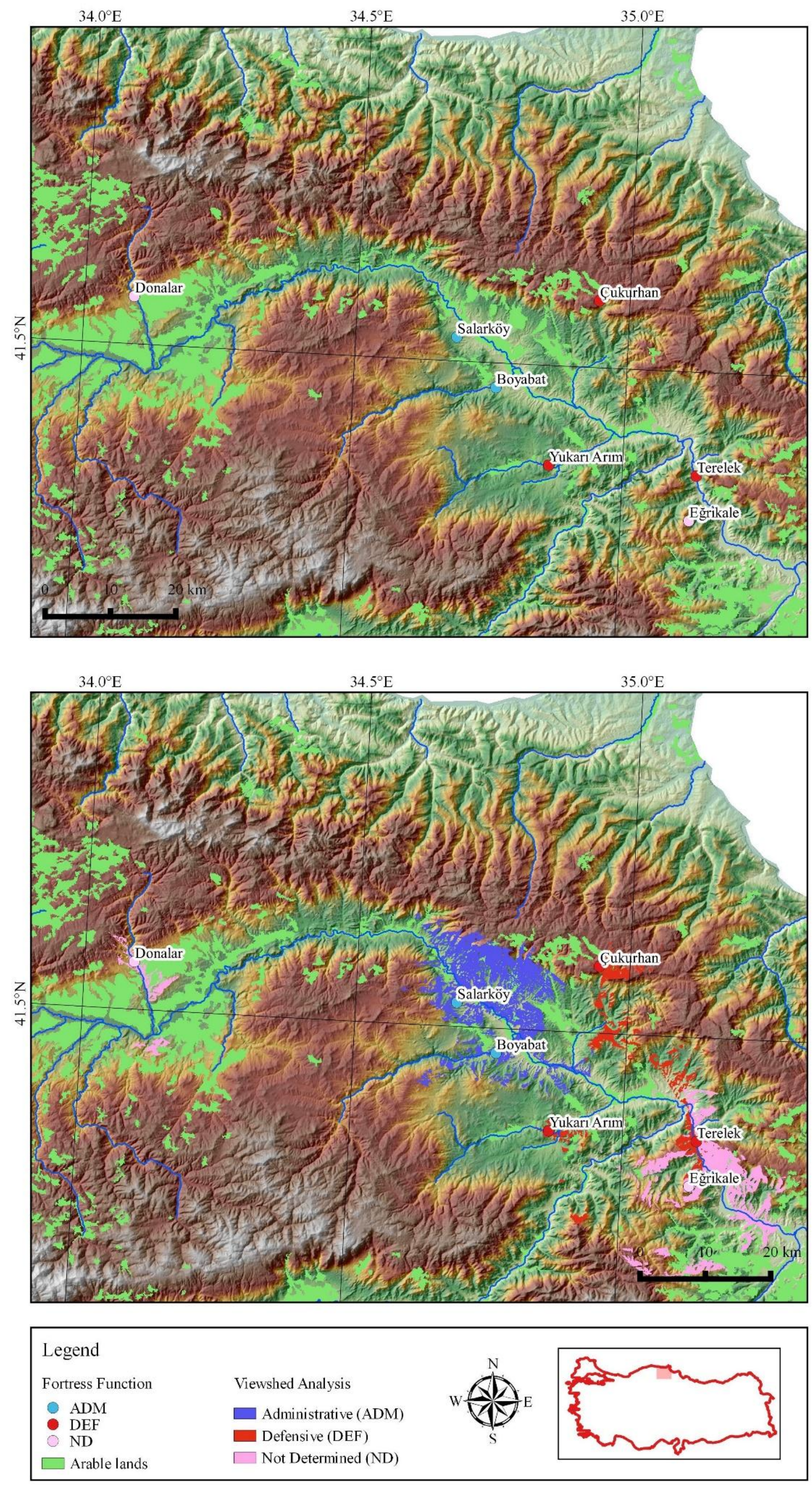


Figure 7.40 Criteria and Function based distribution in the Amnias Valley

The Dazimonitis Valley

There are nine fortresses in the Dazimonitis Valley: Zela, Gazioura, Küçükbağlar, Kaledere, Arhoy, Tokat, Geyras, Çördük and Karagöz. The Yeşilırmak River flows through the valley, and with the exceptions of Arhoy and Karagöz, these fortresses were built near the Yeşılırmak and its tributaries. The roads in the region emanate from Zela and Gazioura. One heads east from Tokat (Dazimon), while another heads south.

Viewshed analysis found that almost the entire valley of Dazimonitis and its roads are visible from the fortresses. The fortresses of Geyras and Çördük have the road to the south in their lines of sight. The fortresses of Çördük, Geyras, Arhoy, Tokat, Karagöz are stationed at the gateways and narrow passages of the valley. These fortresses overlook very little agricultural area. Their function was determined to be defensive. The fortresses of Zela and Gazioura located on the western side of the Dazimonitis Valley, along with the fortresses of Kaledere and Küçükbağlar, can surveil large agricultural regions and almost the entire valley of Dazimonitis (Figure 7.41). Both analyses found them to have an administrative function.

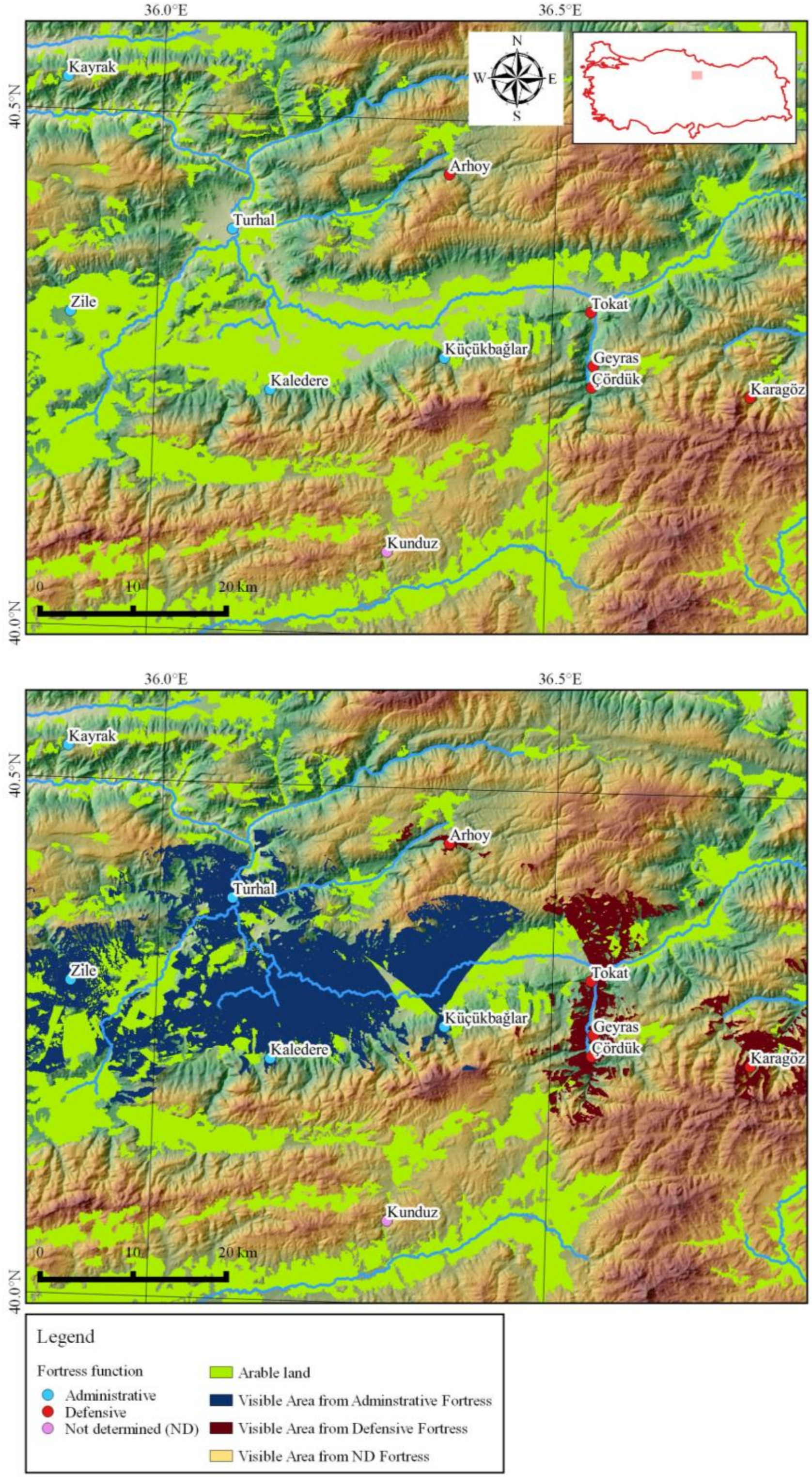


Figure 7.41 Criteria and function based distribution in the Dazimonitis

The Plains of Chiliocomon and Diacopane

There are five fortresses in these plains, Katırmağara, Amaseia, Kaleboğazı, Kaleköy and Kayrak. It has three major rivers: the Salhan, which passes through Chiliocomon and Diacopane plains; the Çekerek River, which passes by Kaleboğazı to the southwest, and the Yeşilırmak, which passes by the Kayrak fortress to the southeast near Amaseia. Having followed the valleys where these rivers meet, the Roman roads also merge at their intersection. This valley also has access to the Scylax Valley on its northeast side. Katırmağarası is the most dominant fortress over the Diacopene plain. Kaleboğazı seems to keep the lands where Scylax Valley connects to Chiliocomon. Kaleköy and the Kayrak fortresses are located in the narrow valley that extend to Amaseia.

The viewshed analyses showed that the southern side of the Chiliocomon and the west side of the Diacopane plains are visible from the fortresses. Fortresses dominated some part of the Chilicomon, but I expected more dominance over the plain because, historically, Chiliocomon served as the administrative center of the kingdom. It was an important plain known from ancient sources for hosting 400 villages that belonged to Mithradates VI. This may indicate the possibility of undiscovered fortresses to the north of Chiliocomon. The fortress of Amaseia was the capital of the kingdom and controlled only the valley where it was located, where the Yesilirmak River also passes, and the terraces within the valley. Excluding Amaseia (DEF), all the valley's other fortresses are associated with the control of agricultural lands (ADM) (Figure 7.42).

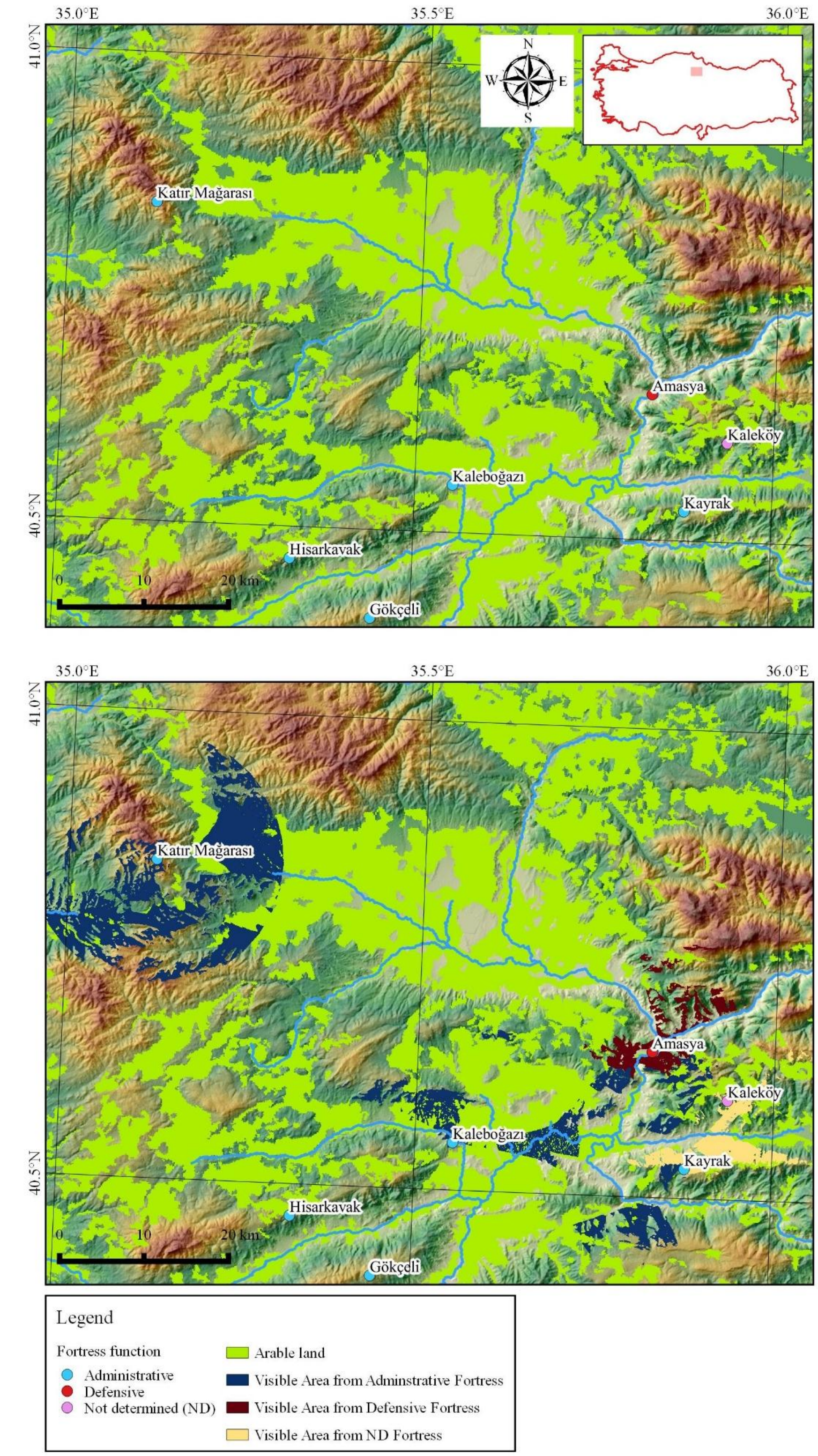


Figure 7.42 Criteria and Function based distribution in the Chiliocomon and Diacopene

The Lower Halys Valley

There are seven fortresses in the Lower Halys: Asarkaya, Pimolisa, Kaletepe (Sagylion), İskilip, Gavurkayası, Kapıkaya and Tependeliği. All seven of them are associated with tributaries of the Halys River. The roads in this region follow the valleys created by the tributaries of the Halys River, and run both east to west and north to south.

Kapıkaya and Tependeliği are situated in north part of the region where the Kızılırmak River nears the Black Sea. They watch over the narrow valley created by the Kızılırmak River in the north. Due to their topographical position and inability to watch over agricultural lands, defense may have been their only purpose. The Kaletepe (Sagylion), Pimolisa and Asarkaya fortresses not only watch over the roads running from the southwest to the northeast, but also overlook nearby agricultural lands, indicating that they had administrative functions (Figure 7.43). Furthermore, Pimolisa was mentioned as an administrative fortresses by an ancient source (Strabo, XII.3.40).[209] Sagylion had significant importance for Phazemon and its vicinity, Phazemonitis (Strabo, XII.3.38). The fortress kept the settlement and its territory safe and under control. İskilip is located in a narrow valley connecting to the valley of Halys. It controls this narrow valley in the northwest that connects the valley of Halys to the valley of Amnias.

[209] This fortress also issued coins during the reign of the Mithradatids. Fortresses where coins were minted (Taulara, Gazioura, Cabeira, Amaseia and Chabackta) can be assumed to have had administrative functions (Højte, 2009).

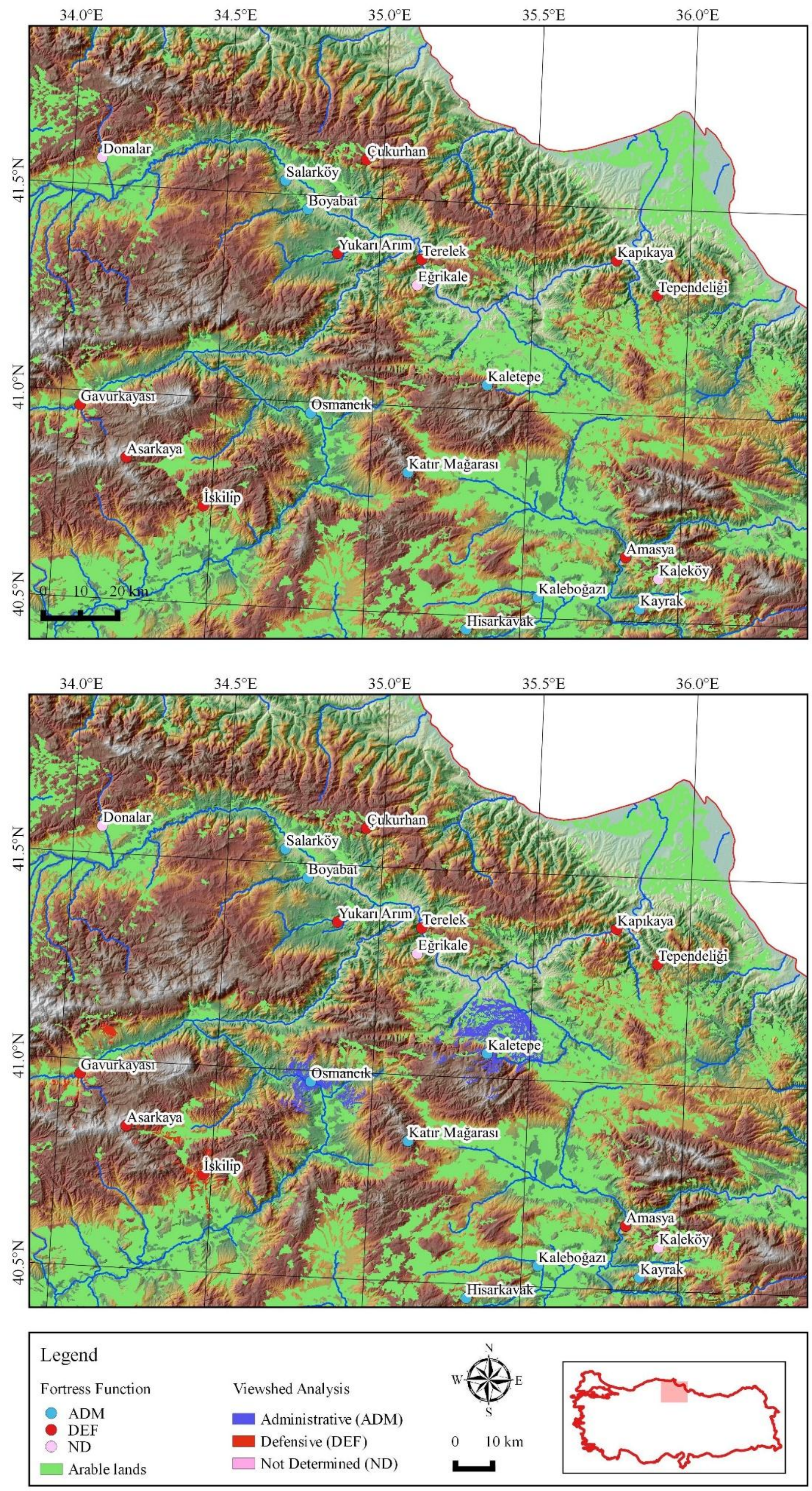


Figure 7.43 Criteria and Function based distribution in the Lower Halys Valley

The Lycus Valley

There are seven fortresses in the Lycus Valley, Boğazkesen, Simeri, Basamaklıgeçit, Kevgir, Cabeira, Esatlı, Arımusa and Gölköy. The River of Kelkit (Lycus) flows through the valley from east to west. The road first follows the river along the Kelkit Valley, and then ramifies in four direction at Boğazkesen to the north and south before heading to to the Black Sea. Most of the Lycus Valley is well within the visibility range of the Simeri, Basamaklı Geçit and Cabeira fortresses. The roads that pass through this valley are also in their visibility range. These fortresses were identified as ADM by both analyses. Boğazkesen seems much more defensive, it is located one kilometer north of the junction of two rivers (the Iris and the Lycus), obviously guarding the entrance to the valley from the north. As Appian stated, the Roman army marched from Amisus over the mountains to reach the Lycus Valley, and Mithradates' phylax signaled, possibly from Boğazkesen, about the Roman army approaching Cabeira where the king's army was camped (App. Mithr. 79). If Boğazkesen was a guard post, its function was defensive.

The Kevgir Fortress is identified with Kainon Chorion by scholars. It is located near a smaller tributary of the Kelkit River in an impregnable valley. Historically, it was where Mithradates kept his treasury (Strabo, XII.3.31). Due to its location, the fortress definitely functioned as defensive. The Gölköy, Esatlı and Arıkmusa fortresses are located further to the northeast and associated with narrow valleys created by the Melet River. These valleys open to the Lycus vertically. Their position enables them to watch over the valleys where they are located. Therefore, these fortresses can be considered defensive. The Boğazkesen, Simeri, Basamaklı Geçit and Cabeira fortresses, with their extensive viewsheds on the agricultural fields of Phanaroia, had an administrative function (Figure 7.44). The Phanaroia Plain was important as the place where part of the Third Mithradatic War occurred. Mithradates VI's army was camped in Cabeira, and the Roman army camped on a hill just across from them. Mithradates VI escaped to Comana from here while his camp struggled in chaos. He may have followed the route just across the Cabeira that reaches Comana in the narrow valley of today’s Niksar-Tokat road. During the Third Mithradatic War, the army moved up along this valley towards Armenia.

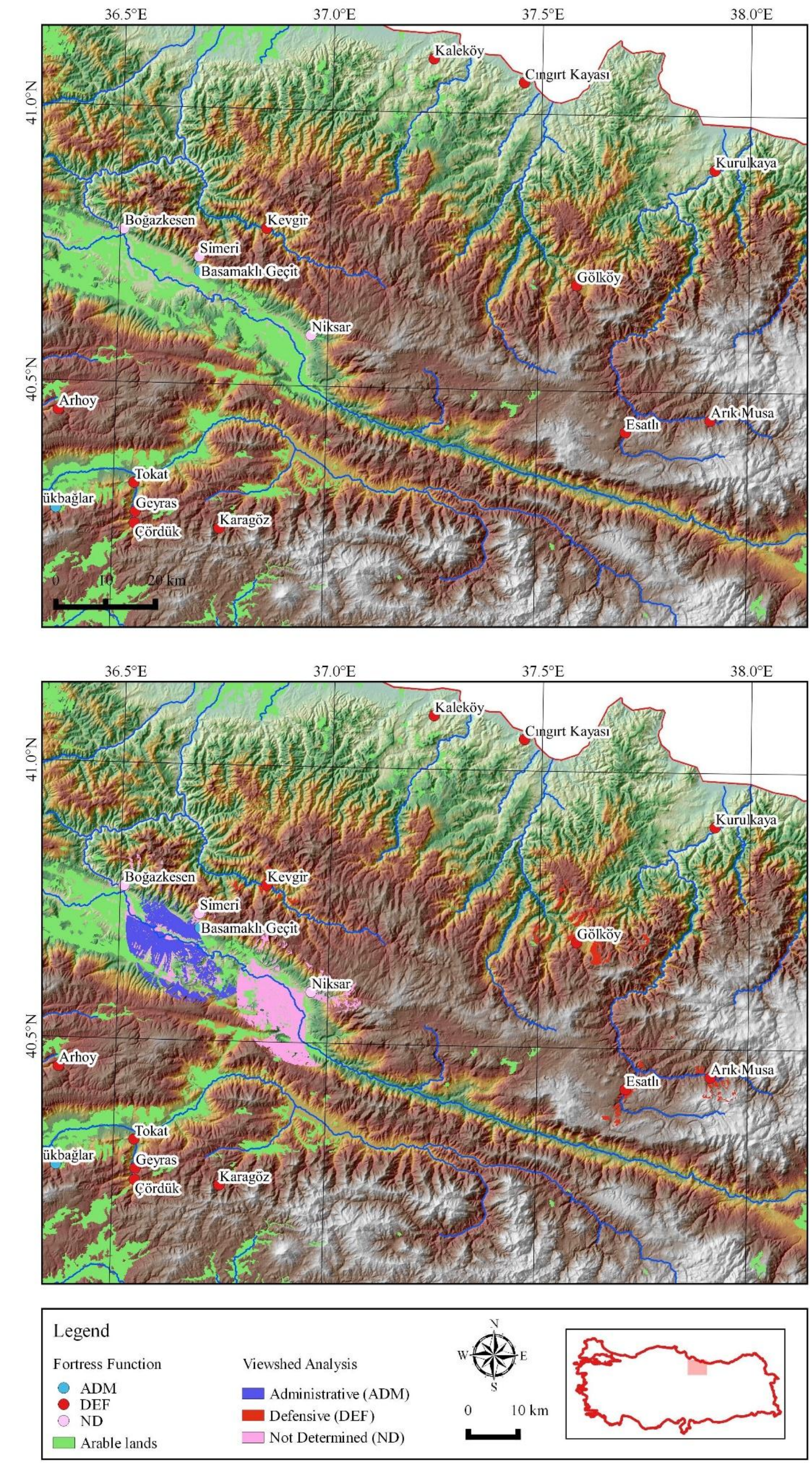


Figure 7.44 Criteria and Function based distribution in the Lycus Valley

The Scylax Valley

There are twelve fortresses in the Scylax (Çekerek) Valley. They can be divided into two groups: fortresses surrounding Göynücek Valley and Kazankaya (Sazak, Simali, Bükse, Hisarkavak, Gökçeli and Kazankaya) and fortresses on possible southwestern border of the Pontic kingdom and Galatia (Muratkolu, Gerdekkaya, Pleuramis, Kızlarkayası and Ermelik). There are also two rivers in the valley, the Çekerek and the Çorum. The fortresses are distributed along these rivers. The roads, on the other hand, follow the Çekerek River in the south and run east to west in the north.

The fortresses positioned at edge of the Göynücek Valley overlook agricultural fields. They were all defined as administrative by both analyses. Cluster analysis classified these fortress as B2m, except for Gökçeli, which has most highest percentage of visibility and arable visible land, and was therefore analysis put in the administrative group A. Kazankaya is in the Kazankaya Canyon, and its sole purpose to control this narrow valley that opens to Göynücek.

The Ermelik, Kızlarkayası, Çürük (Pimolisa), Gerdekkaya and Muratkolu fortresses can be considered the southwest limits of the kingdom. As mentioned in chapter 5, Gerdekkaya is considered the border fort, Mithradateion, established by Mithradates VI against Galatia (Strobel, 1997: 146). Olshausen and Biller took the expansion of the Pontos to have included these fortresses, Muratkolu, Kızlarkayası, Çürük and Ermelik (1884: pl. I-II). According to the decision-making analysis, Ermelik was administrative and Çürük was not determined. Cluster analysis put all of them in the B2m subgroup, except for Gerdekkaya (B2o). This uncertainty provides no concrete ideas about the border forts (Figure 7.45).

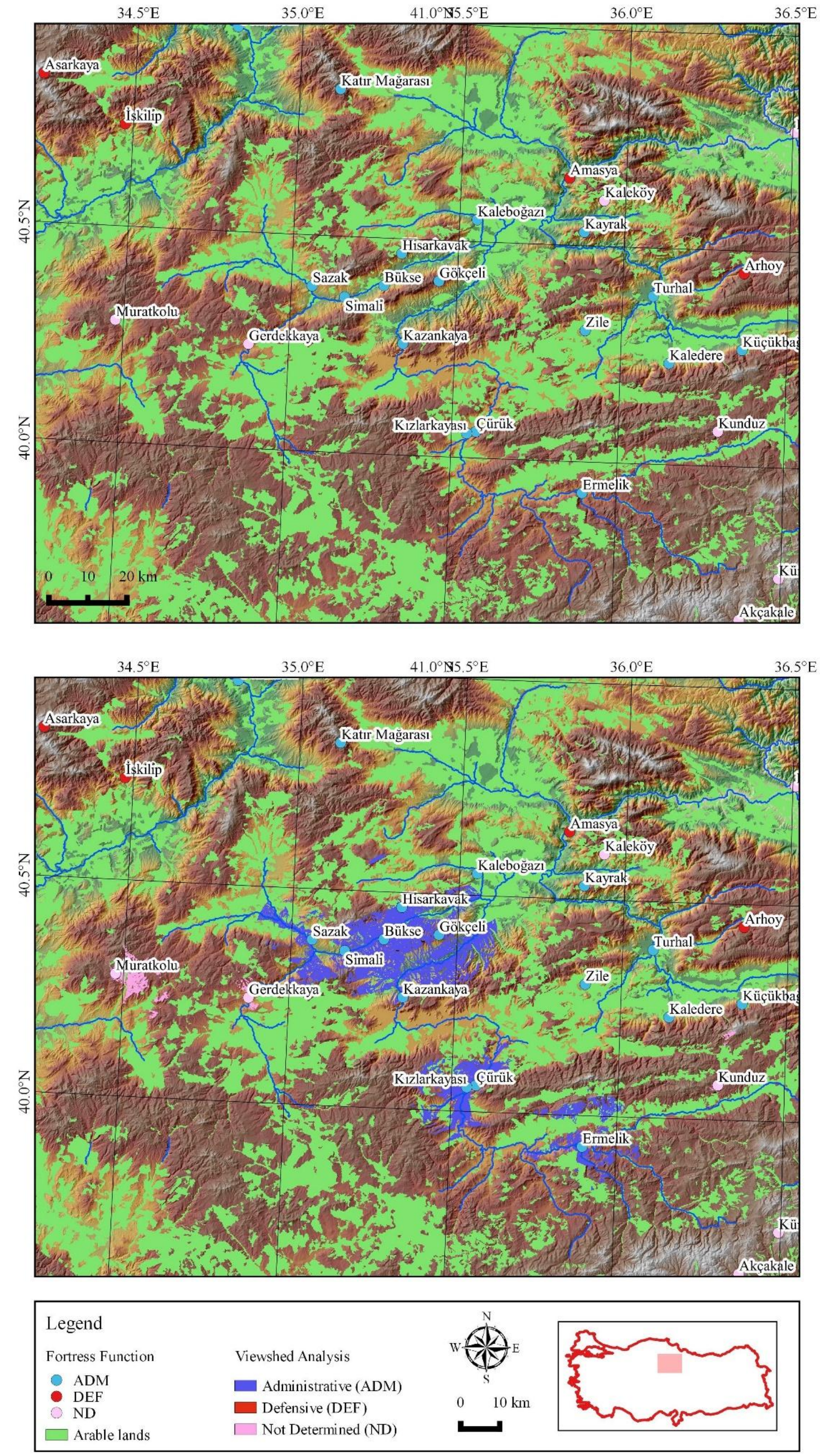
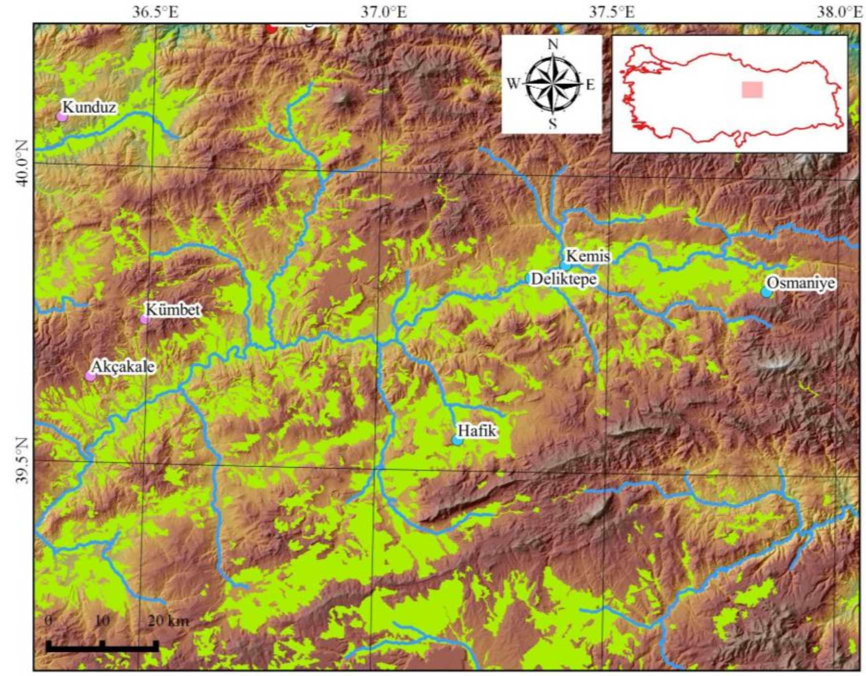


Figure 7.45 Criteria and Function based distribution in the Scylax Valley

The Upper Halys Valley

The Upper Halys Valley has six fortresses: Kümbetkale, Akçakale, Hafik, Deliktepe, Camisa and Osmaniye. This valley was formed by the Kızılırmak River, and its fortresses are situated along this river and its minor tributaries. The road network passing through the valley runs parallel to the Kızılırmak River (Figure 7.46).

These fortresses are thought to constitute the southern border of the kingdom (Olshausen and Biller, 1984; Strobel, 1997). They are located on agricultural land and have high visibility. Hafik, Osmaniye, Kemis and Deliktepe were identified as administrative. Cluster analysis put them in the B2m subgroup, which was largely administrative. Kümbet and Akçakale are located to the south of this group. They are topographically similar and connected by lines of sight. Their functions were not determined, and cluster analysis put them in the B2n subgroup because, although they are situated at positions of control over agricultural lands, the actual amount of agricultural land within their limits of visibility is scant.



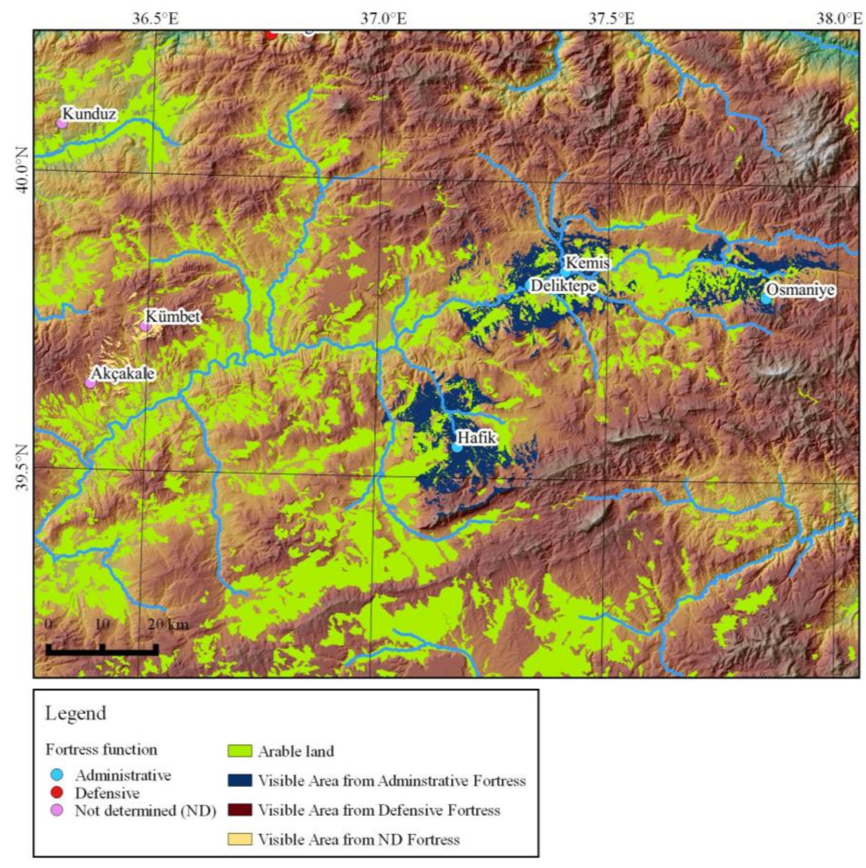


Figure 7.46 Criteria and Function based distribution in the Upper Halys Valley

7.5. Signaling

It will be beneficial to investigate fortresses' relations to each other with respect to communications in order to explore the signaling hypothesis. Thus, visibility analysis was done by changing the 15 kilometer buffer zone used for fortresses in the viewshed analysis to 100 kilometers.

It is a possibility that there was a communication network of signaling. Archaeologists have used visibility networks as a method for studying the role visibility network patterns could have in structuring past human behavior, for example through communication networks using fire signaling, or the visual control settlements exercise over surrounding settlements. Fossey, who conducted research in Boeotia in the last decades, believes that military systems of fortifications were also communications networks based upon the principle of intervisibility and signaling (Fossey, 1988: 112).

Archaeological evidence of temporary installments is rarely detected. They could have been built with easily destructible materials such as wood and positioned on top of the fortresses and left almost no trace behind.

Visual signals based on pyrotechnics are essential for long distance communication. Beacons are an ancient form of visual signaling and were often used in relay to cover long distances. Information about ancient military signaling methods is scarce. However, some ancient sources partially reveal that signaling networks were used to transmit messages during wars.

Polybius states that the signaling is an effective practice in warfare. Messages can be transmitted in a short period of time over long distances that would otherwise require several day of travel. The only concern about signaling is that it must contain a predetermined message (Polybius, Histories, 43).

One of the sources on this topic is Aeschylus's play, *Agamemnon*, which starts with the lines: "And now I am watching for the signal of beacon, the blaze of fire that brings a voice from Troy and tiding of its capture" (Aeschylus, *Agamemnon*, 1-34). Aeschylus states in Agamemnon that fire signals were used to send the message from Troy to the city of Argos (approximately 600 kilometers away) of the victory by the Greeks with beacons (Jones, 1994: 18).

About transmitting the message of victory across the Aegean Sea, Jones offers this footnote regarding Aschoff's study of the visibility of fire:

> "To cover an average of 150 kilometer on a clear night takes a fire with a light output of between 10^4 and 10^5 candela (A candela is a unit for measuring light densities). At this distance, such a fire produces an image with a brightness of 10^{-6} to 10^{-7} lux, which is near the minimum that can still be seen. Aschoff also measured that a large fire produces about 0.2 candela/cm^2, from which the minimum size of the stack can be derived. Originally it was defined as the amount of light produced by a single candle. It is now standardized more precisely as /60th of the amount of light produced by one cm^2 blackbody, that is heated to the melting temperature of platinum. One lux is the illumination projected on a surface by a light source of one candela at a distance of one meter. For comparison, daylight has brightness in the order of 10^4 to 10^5 lux. At dusk this reduces to about 10^2 lux" (Jones, 1994: 18-20).

Another source is Herodotus. During the battle of Artemision (480 BCE) between Persians and Greeks, a fire signal from Sciathos Island was lit to warn Greek fleets stationed in Artemisium about the approaching Persian navy (Herodotus, VIII).

Roman fortifications and networks of signaling towers had the capability of transmitting messages back to the interior of the Roman Empire as well as along the frontier itself (Wooliscroft, 2001). In the field of visual signaling the Romans had a number of simple predetermined signals such as the lighting of a beacon or the hoisting of a flag or a beam to convey a single piece of information. Warning of an incursion or notice of the withdrawal of an enemy can easily be transmitted by such methods (Donaldson, 1988: 350).

Beacon systems were commonly employed for communication along the Roman *limes*, some towers of which at least carried a fire signal at the end of a long pole extending from the second floor well above the roof of a three-story watchtower, as is recorded for example in a relief carved on Trajan's Column (Figure 7.47) (Schleiermacher, 1938: 251).

Figure 7.47 War preparation scenes on Trajan's column[210]

The scene on Trajan's column offers clues about signaling. The torches from the watchtower were probably used for signaling, and the log piles and haystacks could be lit to serve as beacons.

[210] (http://www.dartmouth.edu/~trajan/?flagallery=trajans-column-scenes-1-5-preparations-for-war)

Mitchell notes that in the Byzantine period, especially during the Arab threats to Constantinople, most of the fortresses located on hilltops created a chain of intervisibility. Beacons could be lit to carry information from locations where military actions occurred (Mitchell, 1993: 129).

Archaeologists have used visibility networks as a method for studying the role particular visibility network patterns could have in structuring past human behavior, for example through communication networks using fire signaling, or the visual control settlements exercise over surrounding settlements. The purpose of visibility analysis is to explore the visual organization of features across a landscape (Wheatley and Gillings, 2000: 3). Visibility analysis helps to assess possible beacon functionality of the fortresses. Beacons require significant fields of vision (long lines of sight) for observing and signaling. Intervisibility, or line of sight, is the basis of signaling. Visibility analysis was implemented in order to determine whether the fortress dispersion could have provided a functioning network of communication. In this study, viewshed analysis of the fortresses was used to determine possible visual pathways, signaling networks and functionality.

In order to assess the viability of communication by signaling of the fortresses in the study area, a 100 kilometers limit was added to the evaluation of the results of the visibility analysis. The fortresses' line of sight was analyzed according to the valley systems as in the viewshed analysis section. All the valley systems were examined regarding to signaling possibilities of the fortresses located in them. In addition, possible fortress locations were detected around these valleys by investigating 1/25,000-scale map sections of the study region, especially on hilltops.[211] These locations plotted on valley maps in order to see the relation with the fortresses that were studied in this thesis and possible fortresses that were as yet unidentified. This added a source of information

[211]Hilltops defined as *kale* on 1/25,000 scale maps were plotted on digitized maps. For this purpose, following map sheets were checked: G35, G36, G37, G38, H35, H36, H37 and H38,. For the entire list of locations, see appendix 4. A similar approach was used by Kolb (1982). He plotted all the *kale* hilltops on his map. His approach is appreciated; however, he built his study on these fortresses both historically known and fortresses known only by name on topographical maps. Therefore, we do not know for certain that all the fortresses he catalogued physically exist.

not present in the analysis, enabling us to postulate what seems to be missing in the line of sight analysis. These hilltops are very suitable and likely fortress locations for controlling valleys and plains.

The majority of the fortresses dispersed throughout the Scylax Valley were determined to be located in ideal positions for signaling (Figure 7.48). The fortress of Gökçeli appears to be in communication with all others in its surroundings due to having the highest level of visibility in the valley. The viewshed could be interpreted to mean that there was a signaling network stretching from Simali to Hisarkavak and Bükse, from Hisarkavak to Gökçeli, and from Gökçeli to Kayrak and Kaleköy (Table 7.14).

Table 7.14 Fortresses that seen each other in the Scylax Valley and distances

Fortresses	Distance, km
Kaleköy - Kayrak	9.6
Simali - Bükse	10.5
Hisarkavak - Gökçeli	11.9
Hisarkavak - Simali	18.4
Gökçeli - Kaleboğazı	18.6
Gökçeli - Kayrak	39.2
Gökçeli - Kaleköy	47.1

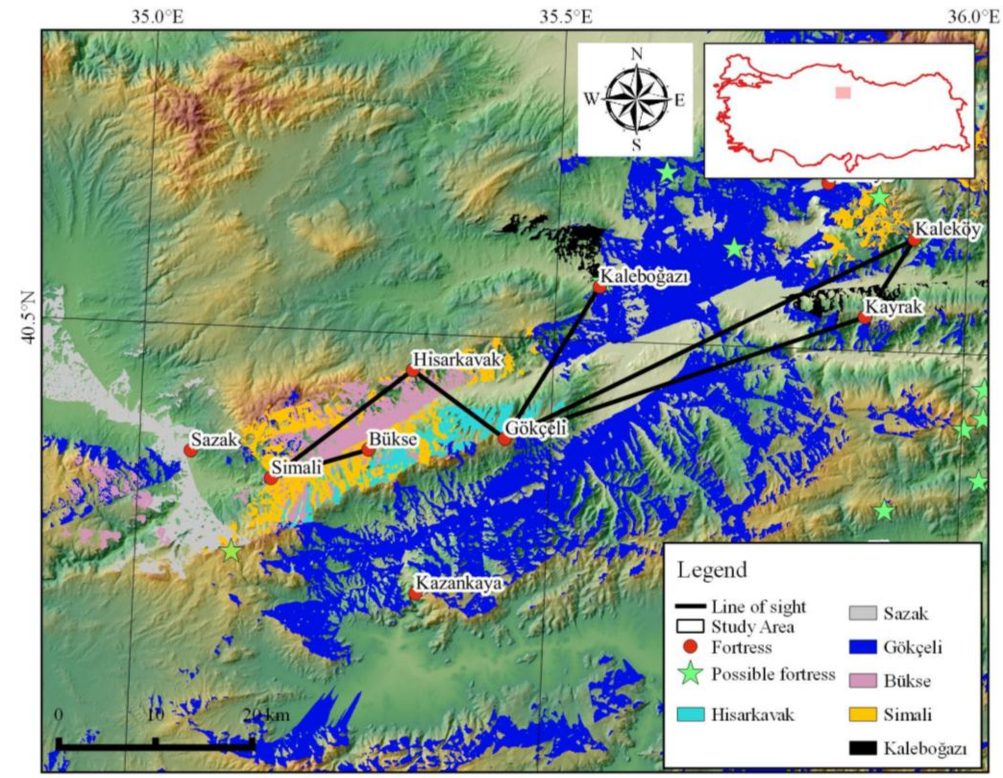


Figure 7.48 Visibility and lines of sight between fortresses and possible fortresses located in the Scylax Valley

Upon considering the possibility of having another fortress positioned in the line of sight of the Simali fortress, a possible fortress was noticed in the western location where the valley narrows.[212] The location of this fortress would have occupied an area that would have made a line of sight that surrounds the Scylax Valley.

[212] This fortress, Osman Kale, was discovered by Sipahi and Yıldırım during their surveys in 2006. The survey notes on this fortress were limited to the identification of third and second millenium BCE pottery sherds (Sipahi and Yıldırım, 2008: 283).

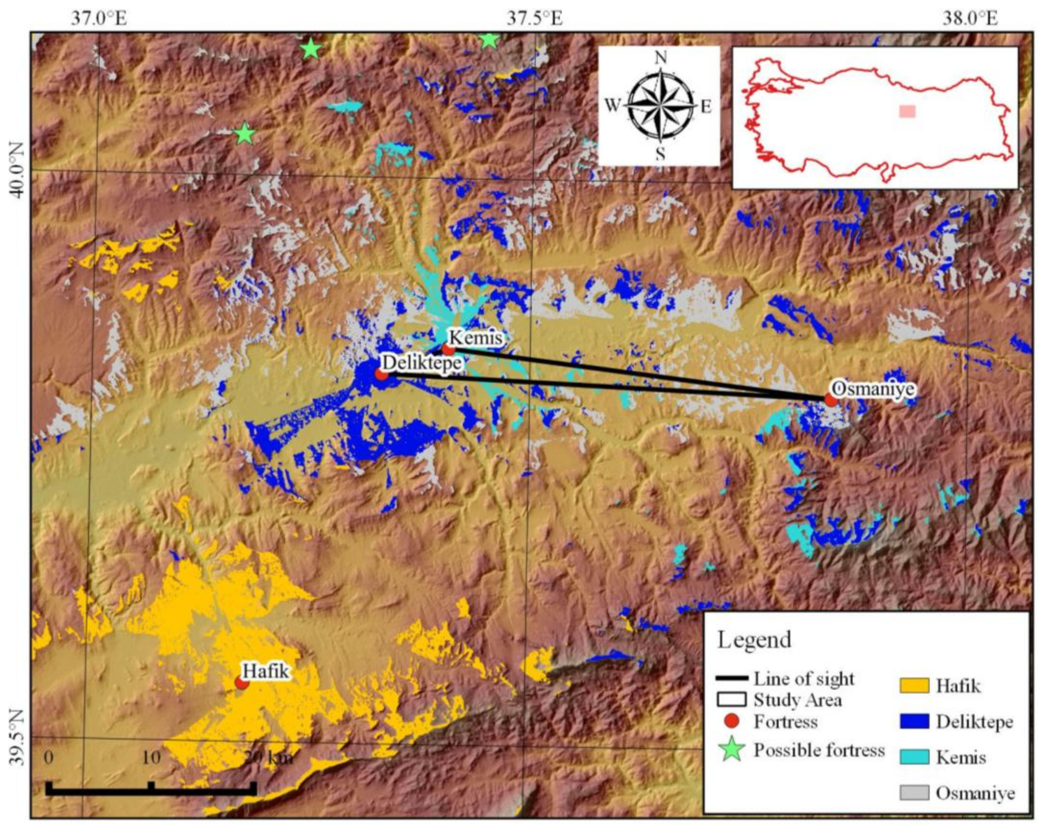


Figure 7.49 Upper Halys Valley lines of sight of the fortresses

The other valley system located in the southeast part of the kingdom is the Upper Halys Valley. The re is a relationship of visibility and line of sight between Camisa and Deliktepe and these two fortresses with the fortress of Osmaniye. This fortress can be thought of as being located at the border of an area to which Mithradates had expanded. However, there is no substantial evidence to prove this. No other possible locations of fortresses were detected at Camisa and Deliktepe (Figure 7.49).

Table 7.15 Fortresses seen each other at Upper Halys Valley and distances

Fortresses	Distance, km
Deliktepe - Camisa	7.0
Osmaniye - Camisa	37.7
Osmaniye - Deliktepe	44.0

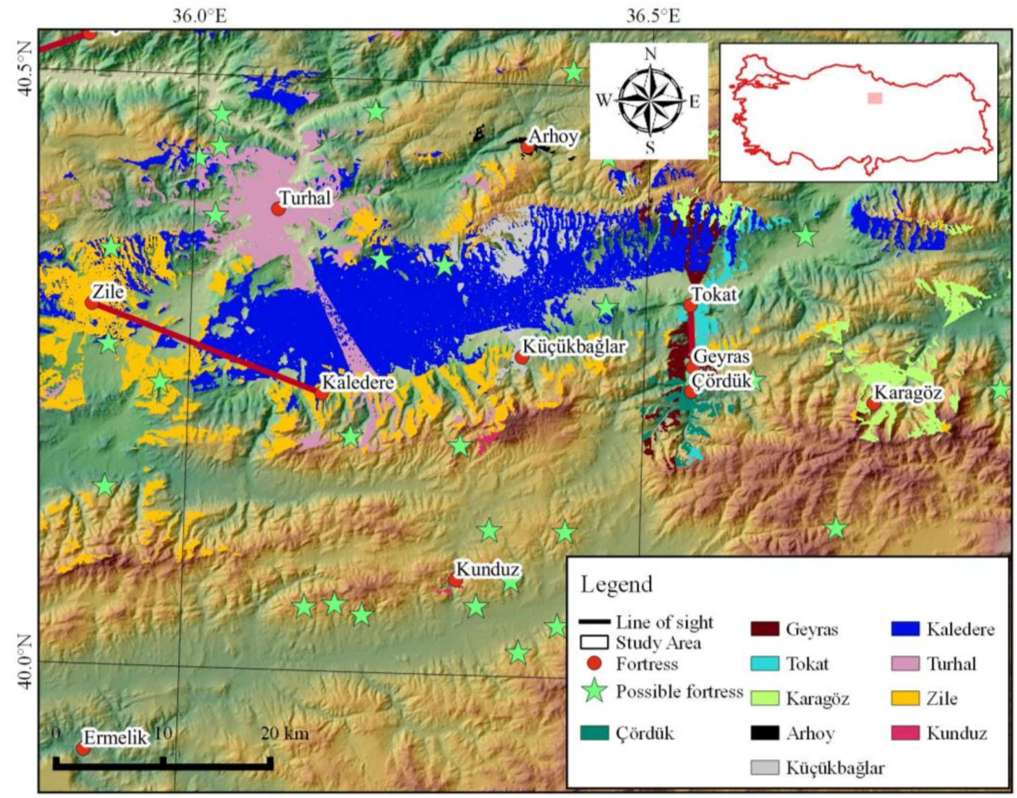


Figure 7.50 Dazimonitis Valley lines of sight and visibility of the fortresses

Two areas of line of sight were identified in the Dazimonitis Valley. The first is the narrow valley where the Tokat fortress located and the intersection between Tokat and Geyras where this valley extends towards the south. It has to be noted that the fortress of Çördük does not have a connection of visibility with the other two fortresses' (Geyras and Tokat, 5.8 kilometers apart). This would mean that the Çördük fortress guarded against any threats directed towards the valley to Dazimonitis on the southern side. Whether or not it had any means of communications with the Tokat and Geyras fortresses is for now questionable. The second area of line of sight in the Dazimonitis Valley is the western Kaledere and Zela fortresses (23 kilometers apart), which are in visible communication with each other by line of sight (Figure 7.50).

It turned out that other possible fortresses may be in the northwest entrance of the Dazimonitis plain after we plotted the possible fortresses on the map. What is interesting is that these points seem to have been located at where monitoring is needed in the plain. Missing unidentified fortresses on the northern edge of the plain could explain the gap in visibility coverage. The narrow part of the western side of the plain contains a possible fortress location, and the location suggests considering this hypothetical approach carefully. Another remarkable point appeared in the small valley where the Kunduz fortress was located. There are many possible fortresses extracted from 1/25,000-scale topographical maps in the valley. Their coherent distribution on the edge of the ridges facing the plain seems to have been formed like links in a chain around it.

Line of sight investigation did not provide the expected results for the Phanaroia Plain where the Third Mithradatic War began. Fortresses on the northern edge of the plain did not interact each other in terms of line of sight. However, they all have total visibility coverage over the plain. On the southern side of the plain, several possible fortress were detected on the edges of the valleys. Two of these are in the visibility area of the three fortresses (Figure 7.51). This is remarkable, because a communication network for signaling requires any units on this side of the plain to have a line of sight. However, lacking archaeological and historical data on possible locations prevents us from drawing a conclusion about this communication.

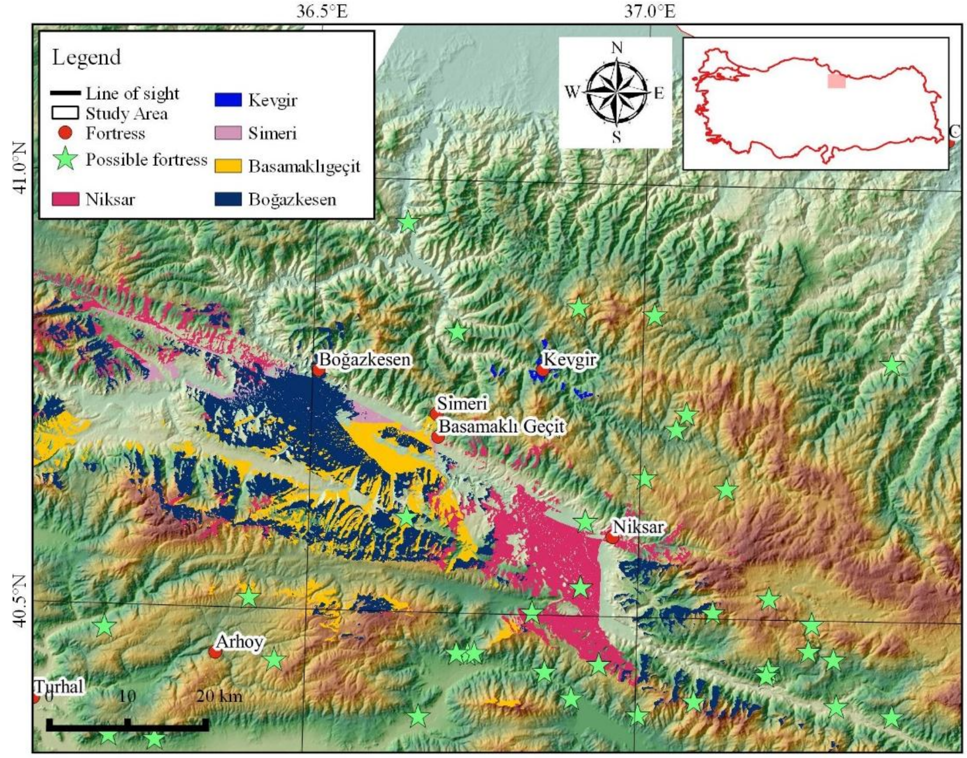


Figure 7.51 Visibility situation and distribution of possible fortress locations on the Phanaroia Plain

Ther only account we have of signaling during the Mithradatic wars comes to us from Appian. He states that Phoenix, the commander of the advanced guard in the Bogazkesen used a beacon in order to signal to Mithradates VI who had his army gathered in Cabeira that the Roman army was approaching the Kelkit valley. The account is as: “προφυλακαι δ’ ηγαν εκεινω κωλυειν τε Λευκολλον, και διαπυρσευειν οι συνεχως, ει τι γιγνοιτο. (Mithradates who had stationed advanced posts to hinder his approach, and to signal continuously with beacons whenever anything should happen)” (App. Mithr. 79).[213] The problem with this account is that viewshed analysis does not indicate a direct relationship of visibility between Cabeira (Niksar) and Boğezkesen from where Phoenix is said to have sent the signal (Figure 7.51).

[213] Διαπυρσευω: to throw a light over (Liddell & Scott).

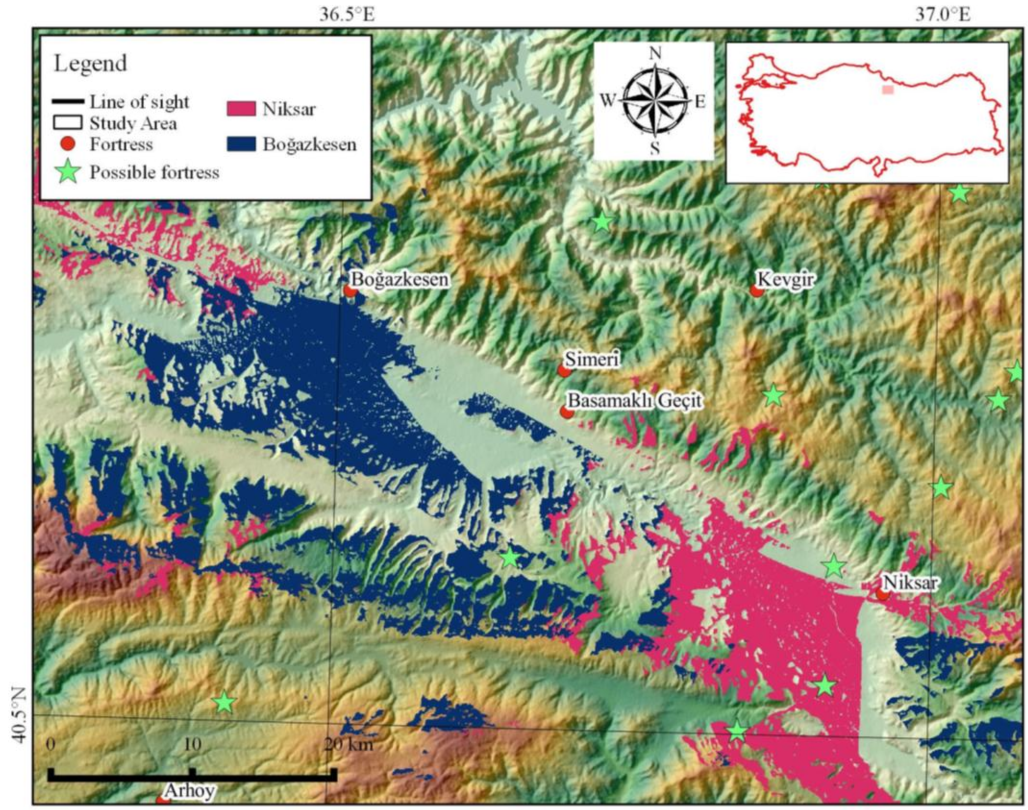


Figure 7.52 Visibility situation between the Cabeira and Boğazkesen fortresses

The Boğazkesen fortress's line of sight is directed towards the southeast, Cabeira has control on the south-west direction. Since both fortresses faced south, looking toward and controlling the valley, they cannot be considered to have had a line of sight in between them. The Basamaklı Geçit and Simeri fortresses are located between these fortresses, and they also faced towards the valley. It may be presumed that the valley played a role in the transmission of signals between certain positions in the south (Figure 7.52).

Aschoff's statement that was based on Aeschylus' account and reached the conclusion that the signal was detectable, although the distance between the two signaling stations was 150 kilometers. The distance between the two Mithradatic fortresses is 43.5 kilometers as the bird flies, and the likelihood of perceiving any signal (smoke or fire) that may have been transmitted would have been high.

This hypothetical study enabled us to examine whether there was signaling between the fortresses. The suggestion made by Aschoff has been encouraging in working towards understanding the relationship between the fortresses in the region with respect to their lines of sight. Significant results were obtained by including possible fortress locations that are not yet identified, but that were on hilltops and marked as fortresses. The presence of a strong line of sight between the fortresses in the Scylax Valley is cause for assuming that signaling was likely to have been employed. A comprehensive network encompassing the valley in nearly its entirety emerges with the addition of a possible fortress plotted on the south of the valley. In the south of the valley of Dazimonitis and where the fortress of Tokat and the strait connecting the valley to the south is, signaling appears to have been used. Finally, there seems to be no direct lines of sight between the archaeologically ascertained fortresses in the valleys of Phanaroia and Lycus, which are where the wars of Mithradates VI took place. However, when possible fortress locations situated to the south of the valley are taken into consideration, an intertwining communication network becomes a likely hypothesis.

7.6.Road Network

7.6.1. Archaeological Background

Due to its familiarity and the availability of information in Anatolia, our subject here is the Roman road network.[214] After coming under Roman rule and becoming a Roman state, a transportation system that provided effective transport and commerce of people and goods between cities was built in Pontos. The road network in Pontos was studied by Ramsay (1890), Wilson (1960: 311-414) and in greater detail by French (2013), providing updated information. Olshausen and Biller further studied Peutingeriana regarding the Pontos in detail, and current places corresponding to at Peutingeriana's locations were investigated (Olshausen and Biller, 1984: 41 ff).[215] Milestones found in

[214] The Roman road network in the *Barrington Atlas* was digitized for use in the analysis.

[215] The Persian Royal Road went in between Pontos and Cilicia. There are multiple propositions regarding the route of this road. Calder suggests that the road goes through Sebasteia after passing from Comana

the Pontos indicate a date of construction of the major road network between 80 and 122 CE (Mitchell, 1993: 124).

Roads were essential in creating and effective administration, trade, and communication as well as for the transportation of troops. Major routes have been identified in the Anatolian network in Galatia, and city of Ancyra plays a key role in three of them. One starts from Byzantium and Nicomedia and runs all the way across the valleys of Paphlagonia and Pontos, through Pompeiopolis, Neoclaudiopolis, Neocaesareira (Cabeira) and Nicopolis to the Satala (Rennel, 1831: 216-8). This has been thought to be the road that Mithradates, Lucullus and Pompey marched back and forth on in the first century BCE. This road links the cities that Pompey founded during his reorganization in Pontos (Mitchell, 1993: 129). In 71 BCE, Lucullus left the Amisus siege to Murena and passing through the Paryadres Mountains he arrived at this road where Eupatoria is located and met Mithradates' army. It is highly probable that this road was also used by Mithradates to return to his country in 67 BCE during the later stages of the war with Rome after three years of hiding in Armenia. Olshausen and Biller suggest that there were roads on both sides of the river in the Kelkit Valley. The two sides of the river are connected by the bridge in Buzköy (Olshausen and Biller, 1984: 43). Across the bridge at Buzköy, a road may have led to the main road from right of Comana to Seramisa (now Gözova) and Laodicea without detouring through Neocaesareia (Rennel, 1831: 211)

The other route starts in the northeast at the Bosporus and crosses central Anatolia. Roads on this route meet at Ancyra and extend as far as Tavium, Zela, Gazioura, Sebastopolis and Sebasteia (Mitchell, 1993: 129).

(Calder, 1925: 8). The road continued to be used during the Roman period. Besides having been built for and functioning for trading activities, the road from Sardis to Susa could also have been used for military maneuvers since it also had sophisticated communication networks and developed infrastructure (French, 1998: 15-48). Ancient sources provide some information on the infrastructure of the road. Sources indicate details such check points, a messenger system including relay points and intervals (Herodotus, 7. 239) , and signaling systems including the use of fire and mirrors for instant communication (Herodotus, 9.3, 7.115). The infrastructure of the royal road provided secure transport for trade and ease of mobility for large armies. The economic and military advantages provided by this road to the Persians were great.

Roads that lay vertically across the kingdom and linked to the hinterland to the coast should be discussed. The road from Amisus to Zela was of great commercial importance to the region, since it stretched from north to south and gave the hinterland access to the coast. It was the route that allowed the wealth of interior regions to reach international circulation (Munro, 1901: 53).

The road that came from Cabeira, the central city of the Phanaroia Valley, was linked to Chabackta over Paryadres Mountains and passing through Amisus. This route linked the Phanaroia Valley with a commercial network. The route is partly identified by tracking milestones and discovery of its traces near Cabeira (Niksar) (Olshausen and Biller, 1984). The road extending over Amaseia reached Cabeira passing through the valley of Dazimonitis and Comana, and the road from Zela stretched to Nicopolis from over the Upper Halys Valley (Rennel, 1831: 213; Munro, 1901: 55). Amaseia had a direct link to the valley of Phanaroia. The road beyond Amaseia passes through the Chiliocomon and goes to Pimolisa (Munro, 1901: 55). In 72 BCE, the Roman army entered Cabeira from the Galatian border, advanced along the Göynücek Valley reaching Chiliocomon and from there, by entering the valley of Phanaroia they besieged the city of Amisus.[216]

There were also major and minor roads coming from the northwestern Pontos that provided connection between the heartland of the kingdom and Sinope. These roads linked Paphlagonia's interior areas to Sinope through valleys that were discussed by Johnson (2010: 47). The valley of Amnias reaches Oymaağaç alongside the Kızılırmak running into Amisus. Czichon indicates the importance of the route from Oymaağaç to Amisus (2008: 270). This east-west road linking Phazemonitis to Phanaroia was used since the Hittite period. It probably became known as a Roman road after Pompey's reorganization (Bekker-Nielsen and Czichon, 2015: 209-304). The western section of this road passes from Amnias Valley and divided in two branches: one goes to Amaseia, and the other goes to Sinope. The valley of Amnias was the place where the battle of

[216] Lucullus looted wherever he passed and took advantage of the wealth of the interior parts of the kingdom, amassing large quantities of supplies (Arslan, 2007: 347).

Bithynia-Mithradates took place during the first years of the First Mithradatic War. The army of Nicomedes advanced through Paphlagonia, passing from the valley of Amnias, and faced the army led by Mithradates' commander at the junction to Sinope.

7.6.2. Fortresses and Roman Roads

Fortresses are crucial factors in establishing control over transportation enabling military movements, and securing a safe trade route. The earliest known road network is dated to the Roman period, and this road network was integrated into the study in order to determine any relationships the fortresses might have had with it. In the last section, the roads spread across the area were compiled in the *Barrington Atlas* based on records and data in the literature and archaeological studies. Most of the roads in the *Atlas* are based on studies conducted by the French. This study used a digitalized version of the Roman period road network present in the *Atlas*. However, the incompatibility brought about because of the 1/500,000 scale of the road data in the *Atlas* and the data we used generated a problem. The topographic data conflicted with each other and were insufficient in many instances. Despite all of its deficiencies, the Roman road network data can be a valuable aid in establishing aspects of the relationships between fortresses.

Modelling Road Network

GIS analysis can predict trails, paths and roads on the basis of topography when archaeological evidence for these features is absent. Calculating cost pathways models had become widely used to understand rural landscapes. The creation of roads and paths is related to topography and causes physical changes in the landscape as a result of the practices of daily life. The analysis is associated with the idea that human behavior is not random. Fortresses are scattered in the kingdom according to a logical utilization of the landscape. Environmental considerations for site selection include topography, fresh water supply and ease of movement through the valleys. Environmental factors are decisive in the creation of roads, and the reorganization of landscape raises political, economical and military concerns accordingly. Least cost analysis proposes a premise for this study by considering environmental factors in creating the most effective roads between fortresses.

7.6.3. Least Cost Path Analysis: Measuring Fortresses' Areas of Influence

Rapid communications are essential for militaries' ability to move troops and supplies efficiently between fortresses. Messenger systems are quite common throughout history. During the second and first millennium in both Egypt and in China, messengers on horseback communicated between forts with military and diplomatic letters (Breasted, 1906: 490-497).

The communication system by which Persians linked their western capital Sardis with Susa is a good example (Mitchell, 1993: 129). In *The History*, Herodotus describes how the relay system operated when Xerxes ruled Persia, between 486 and 465: "There is nothing of mortal origin that is quicker this system of messengers. This is how the Persians arranged it: they saw that for as many days as the whole journey consists in, that many horses and men are stationed at intervals of a day's journey, one horse and one man assigned to each day" (Herodotus, *The History*, Book VIII, 98).

During the Roman period, commanders used fast-riding couriers to meet their communication needs. No doubt the most important messages were encrypted, and we have an example from Caesar, albeit unsophisticated, of a coded message (Donaldson, 1988: 356): "He, after perusing it, reads it out in an assembly of the soldiers, and fills all with the greatest joy. Then the smoke of the fires was seen in the distance, a circumstance which banished all doubt of the arrival of the legions" (Hanc Graecis conscriptam litteris mittit, ne intercepta nostra ab hostibusconsilia cognoscantur) (Caesar, BG V, 48).

I summarized the historical data as well as the information available on the road network in the Pontos above. However, concrete evidence about the kingdom's road network during the Hellenistic period is not available. There is no doubt that there were communication and transportation paths in this region where military operations were conducted, and many fortresses were built. Considering that there should be roads for military communications, especially between fortresses, GIS software's least cost path analysis was used in this study. As Branting notes, LCPA provides information on movement between forts, quantifying the logistics of military campaigns (Branting, 2012: 209). A hypothetical road network was created with least cost path analysis by taking environmental factors into consideration.

Method

Least cost path analysis is a relatively new tool in archaeology. It is based on the assumption that humans will economize aspects of their behavior and decreases the costs of traveling over the topography (Surface-Evans and White, 2012: 2). Thus, when cost increases in a specified area, the likelihood of travelling to that area decreases, as does interaction in the area. When paths are known to be of least-cost, then archaeologists are able to hypothesize networks of travel, as well as estimate other locations where paths, trails, or roads may occur. GIS software's least cost path analysis addresses the problem of how to get from point A to point B in the most efficient way possible. Herzog offers a general overview of this method and indicates that the least cost analysis is especially useful for modeling access to natural resources (Herzog, 2014: 225). A study conducted in South America tried to model the connection between the Paleo-indian sites on the Pacific coast and obsidian resources in the hinterland (Rademaker et al., 2012: 36). In addition to accessing resources, Roman and Medieval commercial routes have been repeatedly studied using this approach (Verhagen and Jeneson, 2012; Güimil-Fariña and Parcero-Oubiña, 2015: 33). LCPA is also helpful for locating roads that have lost their physical integrity and visibility due to dynamic environmental conditions (Phillips and Leckman, 2012: 50).

Before starting the LCP analysis, the costs that will be used in the cost analysis model need to be identified. In order to do this, factors that influenced the past movements need to be determined. This stage can be considered the foundation of the study. The number and type of factors that constitute the costs are determined according to the scope of the study (Herzog, 2014: 225). There can be one or more factors involved, and these can have negative or positive effects on movement. Surface-Evans and White classify them as environmental, cultural and physiological factors (Surface-Evans and White, 2012: 5). Topographical parameters (slope, hydrology, land use) are the most common environmental factors used in modeling. Political borders can be considered a cultural factor, while calorie intake is a physiological factor (Bell et al., 2002: 6). These costs differ in each analysis and constitute the accumulated cost surface.

There are two types of cost surfaces according to whether or not they are affected by the direction of the movement. Some costs are affected by the direction of movement (anisotropic costs) while others are not (isotropic costs). For instance, slope is an anisotropic cost that is affected by the direction of movement, while land use and cultural interdictions are isotropic costs (Herzog, 2012: 183). In studies that use anisotropic costs, different routes will be found when the origin or the destination point is changed. Surface-Evans and White define anisotropy as a main determinant of road morphology (Surface-Evans and White, 2012: 12).

A mathematical algorithm is needed to identify the least cost path between given starting and destination points. The most common algorithm in many disciplines as well as archaeology was developed by Djikstra (Dijkstra, 1959: 270). With this algorithm, the path is identified by creating the lowest cost path between the origin, the other points in the landscape (nodes) and the destination point. The shortest path in this study was drawn using the r.drain module in the GRASS GIS 6.4.3 software (Gietl et al., 2007: 4).

7.6.3.1.Process of Data

The process used to reveal the least cost paths between starting and destination points is show below:

1. Identifying cost criteria and preparing cost maps (Figure 7.49).
   a. Walking speed
   b. Land use
   c. Flow accumulation
      1. Identifying cost weights and creating the total cost data
      2. Identifying starting and destination points
      3. Identifying sub-regions that contain the starting and destination points
      4. Creating accumulated cost surfaces of the sub-regions
      5. Drawing the routes with the r.drain module

Variables which may have influenced the rapid movement armies were indicated. The accumulated cost surface (ACS) needs to be generated in order to identify the least cost path between the starting and destination points. The accumulated cost surface is generated with the GRASS version 6.4.3 "r.walk" module, and the shortest routes are drawn with the "r.drain" module of the same software (Gietl et al., 2007: 5).

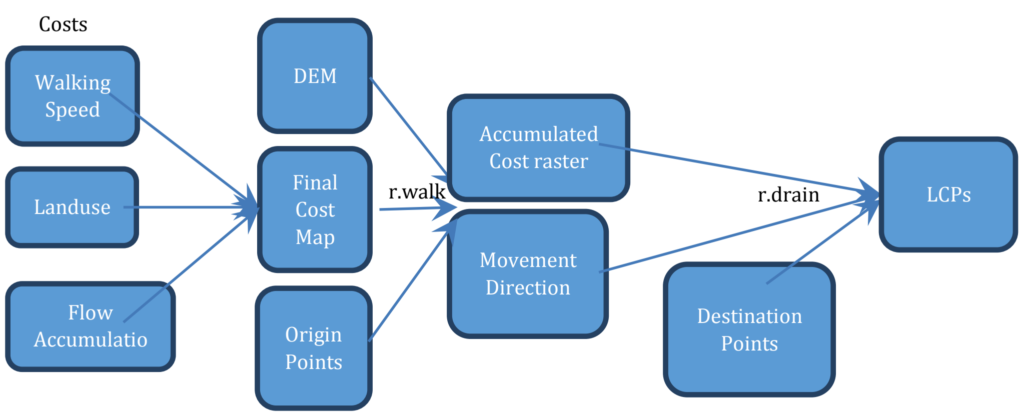


Figure 7.53 Flow chart for LCP

7.6.3.2.Cost Factors

Cost may be affected by factors such as slope, vegetation and water. Tobler formulated the model for calculating slope’s effect on movement in order to create a cost surface (1993). Cost surface is linked to an origin point, and the least cost from the origin point to each cell in the raster is calculated. The important point to keep in mind is that, since the least cost rasters are generated from origin points, they always represent movement away from the origin, not movement from the destination to the origin.

Three criteria were used in order to generate the cost surface and these criteria are shown in Table 7.16. The reasons for choosing these criteria are the effects of transportation speed on road routing, the effect of land use on the accessibility of the land, the effect of hydrological conditions on transportation and the effect of the Roman paths revealed by previous studies.

Table 7.16 Criteria and reasons used for cost factors

Cost factors	Reasons
Walking speed	Reaching the destination point in a short time
Landuse	The land cover affects the movement
Flow accumulation	Water related factor affect the movement

Walking Speed

Reaching destinations as quickly as possible is a top priority in transportation. Therefore, the speed of transportation was identified as one of the most important cost factors in determining transport routes between fortresses. Walking speed is usually high on flat terrain and slower on slopes. Thus, slope is the main factor that determines walking speed. In order to use walking speed as a cost factor, we need to convert the values on the slope map into walking speed with the help of an algorithm.

The most common equations are the Tobler's hiking function (Tobler, 1993) and Naismith's rule. The relationship between walking speed and slope was defined slightly differently from Tobler's approach by Herzog (2010: 5), and Llobera and Sluckin (2007) (Llobera and Sluckin, 2007; Herzog, 2010). Tobler's hiking function was used in order to understand the distance travelled from the fortresses. In this study, slope values were converted into walking speed values using Tobler's hiking function (Equation 3). The changes between slope values and walking speeds are shown in Figure 7.50.

Equation 3Tobler's hiking function

$$\text{Walking speed (km/h)} = 6 \exp(-3.5 * \text{abs}(\text{slope percent} + 0.05))$$

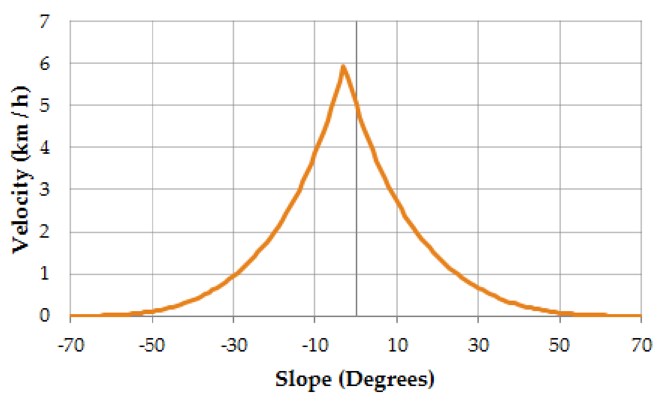


Figure 7.54 Slope vs velocity diagram reproduced from Tobler 1993

In order to obtain the walking speed cost surface, first the digital height data is converted into slope values (slope percentages), and then the slope values are converted into walking speed in a few steps, according to the Tobler's hiking function (Figure 7.54). In order to obtain walking speed cost data, the highest raster values are reversed and made smallest. All values are normalized between 0 and 100. Least cost analysis was used to calculate the distance between forts that would be accessible to the army.

Landuse

Characteristics of the terrain, such as forests, marshlands or barren land, are an important factor that affect transportation today, as they did in the past (Howey, 2007: 1835; Chandio et al., 2012). Therefore, land use was chosen as a parameter of cost of transportation between the fortresses. Land use raster data is the 17th updated edition of the Corine 2006 land use map with 100 meter resolution, published by the European Environment Agency. According to this map, the land use of the project site consists of mainly agricultural land (42.5%) and forested/natural areas (46.9%) (Figure 7.55).

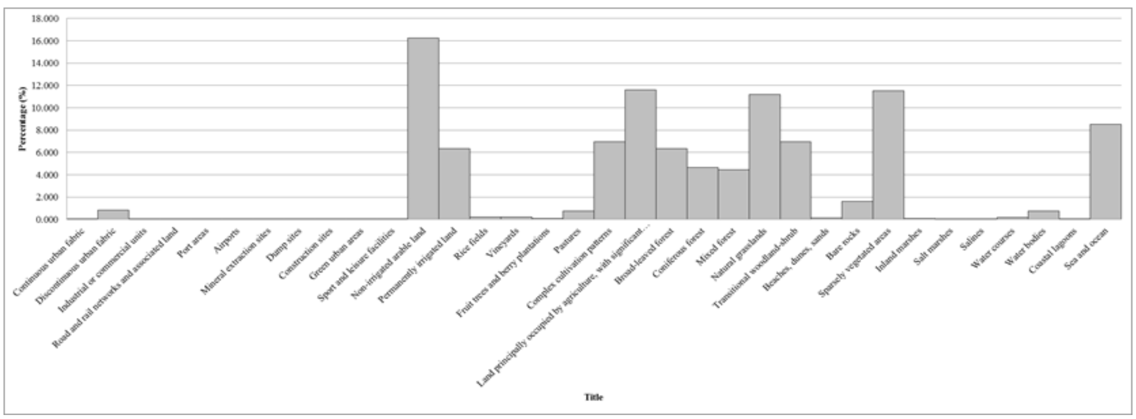


Figure 7.55 Histogram of Landuse classes in study area

The 44 suBCElasses under the 5 main classes of land use given in the original map were reclassified, considering their effects on transportation in the past. In this reclassification, low cost values are given to artificial surfaces considering that they were usually near cities and established on flat terrain. Various cost values were assigned to agricultural areas according to crop types, and high cost values that vary according to vegetation types were given to forests and semi-natural areas with the assumption that they usually affect transportation negatively. Generally, high cost values were assigned to wetlands and the suBCElasses included in the bodies of water class, considering that hydrological conditions would affect transportation negatively (Table

7.17). The cost values for land classes are shown in Table 7.17, and the land use cost map is shown in Figure 7.56.

Table 7.17 Assigned cost values for landuse classes (Current data on distribution of forests)

Landuse Type		Assigned Cost Value
Artificial surfaces		10
Agricultural areas		
	Non-irrigated arable land	5
	Permanently irrigated land	10
	Rice fields	30
	Vineyards	10
	Fruit trees and berry plantations	20
	Pastures	10
	Complex cultivation patterns	30
	Land principally occupied by agriculture, with significant areas of natural vegetation	30
Forest and semi natural areas		
	Broad-leaved forest	65
	Coniferous forest	65
	Mixed forest	65
	Natural grasslands	20
	Transitional woodland-shrub	30
	Beaches, dunes, sands	60
	Bare rocks	40
	Sparsely vegetated areas	30
Wetlands		
	Inland marshes	80
	Salt marshes	80
	Salines	80
Water bodies		
	Water courses	0
	Water bodies	100
	Coastal lagoons	100
	Sea and ocean	100

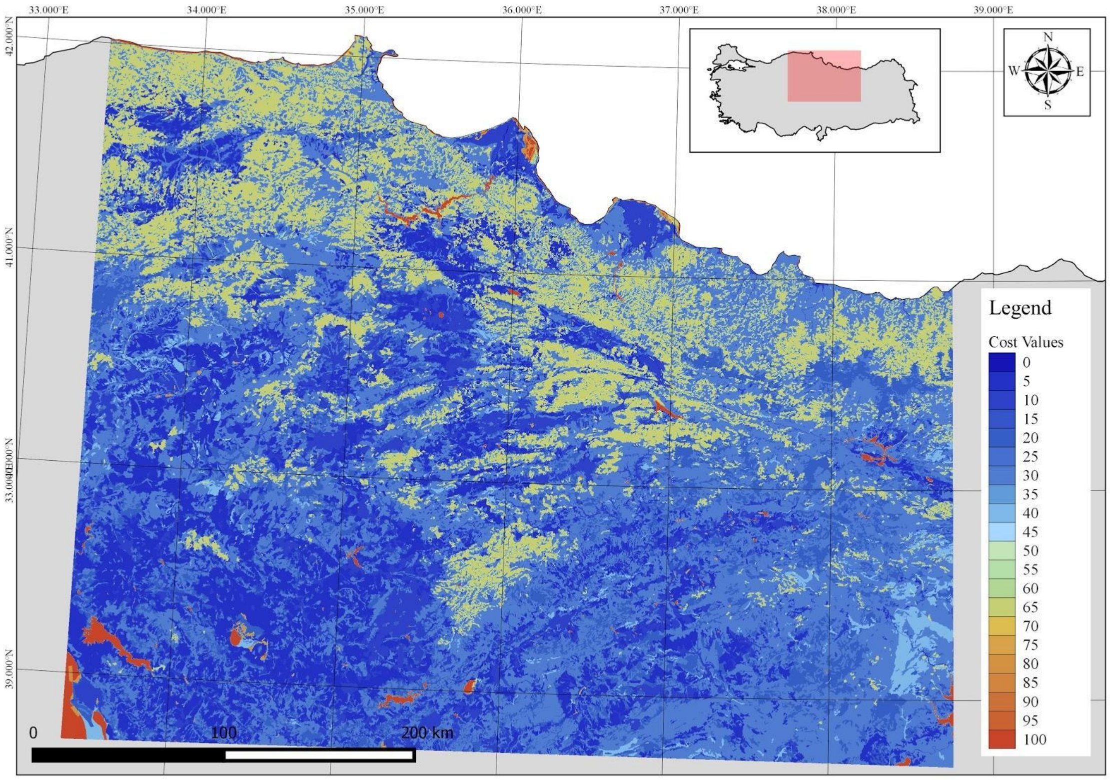


Figure 7.56 Landuse cost map

Flow accumulation

Hydrological conditions such as wetlands, watercourses and flood zones are factors that make transportation more difficult. Therefore, hydrological factors are used as parameters in path model studies (Fiz and Orengo, 2008: 317). In this study, a flow accumulation map was used as an indicator of the effect of water on transportation (Figure 7.57). The flow accumulation map was generated using the digital elevation model. The digital elevation model was corrected with the pit fill process, which eliminates small pits that can cause errors in hydrological studies. The flow accumulation map was then generated from this modified digital elevation model. The raster map that was achieved was normalized so that 0 and 100 would be the minimum and the maximum values.

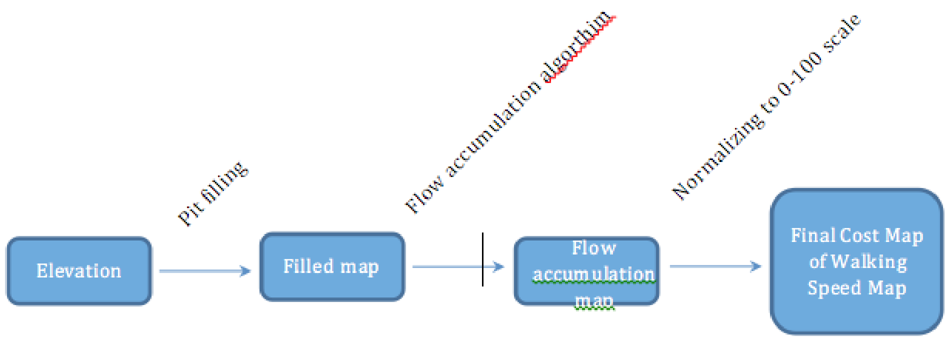


Figure 7.57 Process of the flow accumulation map

Final Cost Surface

People have always preferred to establish an efficient way with the shortest distance in between origin and destination, requiring the least amount of effort. The conditions of the topography impose limitations on mobility. A cost surface was conceived by taking the factors mentioned above into account. Although the criteria was established based on modern data, the agricultural productivity and abundance of the area with regards to land use during the Hellenistic period can be supported by references to ancient resources (Strabo XII.3.15; XII.3.30; XII.3.39). The final cost surface was created considering the effects of walking speed, land use, flow accumulation and cost surfaces of distances to ancient roads on the percentages given in Table 7.18 (Figure 7.58). The criteria employed in calculating cost surface depend on subjective propositions (Howey, 2007: 1840). The main constituent of criteria determining the movement is the rugged terrain (rough topography) of the surface area. The pixels that have slopes above 40 degrees were considered inaccessible. Therefore, these pixels were removed the total cost map. A surface scheme according to elevation was then developed. This criteria is suggested to have a 50% effect on cost. In fact, in studies similar to this, the criteria of walking speed appears to be the employed the most. The flow accumulation criteria assembled by the DEM is thought to have affected mobility by 10%. Areas with many streams and rivers result in an increased cost for human mobility. The effect of this criteria in this area is not substantial.

Table 7.18 Weighted cost

Cost Surfaces	Weights
Walking Speed	50%
Landuse	40%
Flow Accumulation	10%

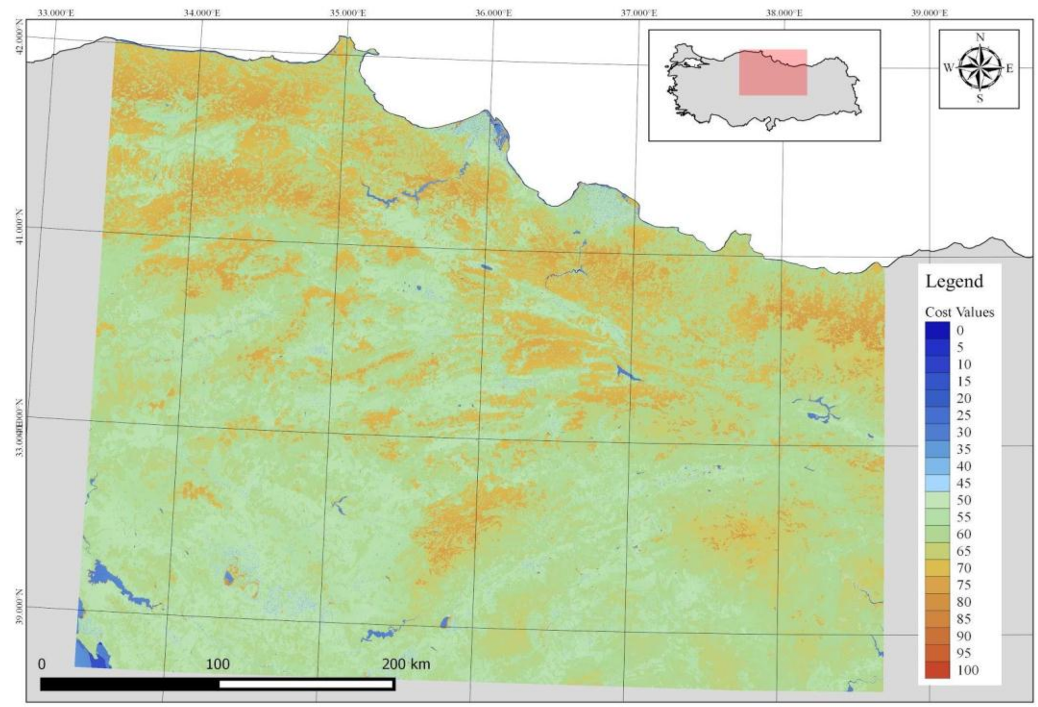


Figure 7.58 Final cost surface

LCP Roads

Routes were drawn between the origins and destination points shown in Table 7.19. The origins and the destination points were chosen based on the assumption that all the fortresses are connected to each other so that the road network can be revealed. The destination points include some major settlements as well as fortresses.

Table 7.19 Origin and destination locations used in the LCPA

No	Origin	Destination	No	Origin	Destination
1	Amaseia	Yassıçal Kaleköy Kayrak Eupatoria Kaleboğazı	**10**	Camisa	Hafik Deliktepe Osmaniye Kalesi
2	Bogazkesen	Simeri Basamaklıgeçit Kainon Chorion Caberia	**11**	Kapıkaya	Tependeliği Sagylion Asarkale Terelek
3	Caberia	Esatlı Arıkmusa	**12**	Karagöz	Comana Caberia
4	Chabakta	Cıngırtkayası	**13**	Kümbetkale	Akcakale Hafik Deliktepe
5	Dazimon	Arhoy Geyras Taulara Caberia	**14**	Kurulkayası	Esatlı Arıkmusa Gölköy
6	Donalar	Salarköy Asarkaya	**15**	Sagylion	Pimolisa Asarkaya Amaseia Andrapa
7	Gazioura	Kayrak Kaleköy Amaseia Kaletepe Arhoy Dazimon Comana	**16**	Taulara	Kümbetkale Akçakale Kunduz Karagöz Ermelik Kale
8	Gerdekkaya	Bükse Gökçeli Sazak Hisarkavak Kazankaya Murat Kolu Simali	**17**	Yukarı Arım	Boyabat Kalesi Salarköy Pimolisa Çukurhan Kale Terelek-Durağan
9	Kainon Khorion	Simeri Basamaklıgeçit Chabakta Caberia	**18**	Zela	Ermelik Kale Kızlarkayası Pleuramis Gazioura

7.6.3.3.Results

For the LCP analysis, 71 routes were drawn from 18 origins in the study area (the maps can be found at the end of this chapter). These routes are shown in Figure 7.59.

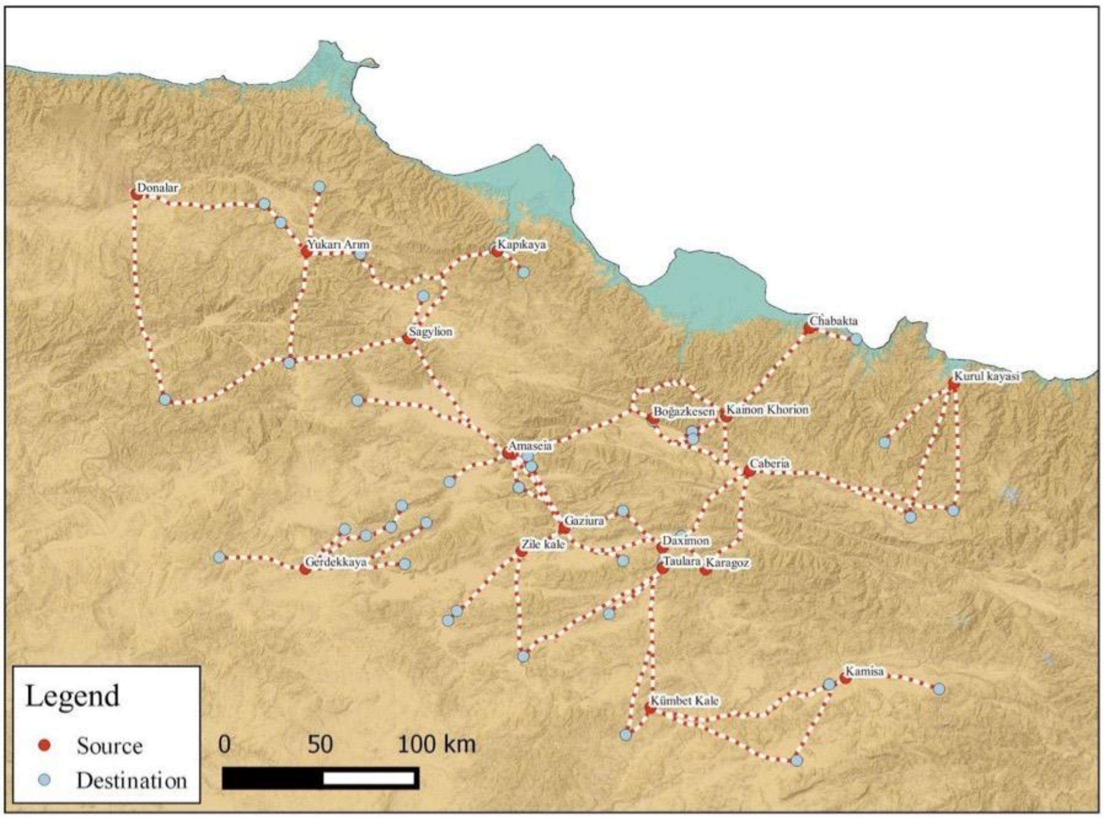


Figure 7.59 LCPs generated in study area

These paths, their lengths and the total costs of transportation (the cumulative costs along the route) are shown in Table 7.20. The cost of transportation was calculated by creating 15 meter wide buffer zones (7.5 meters on each side of the road) and using zonal statistics with this buffer zone and the total cost map. The 30 meter pixel size of the final cost map was taken into consideration, and the total size of the buffer zone was set as 15 meters to prevent excessive number of pixels from falling into these buffer zones.

The results of the analysis indicate that the cost of a route increases as its length increases (Figure 7.60). In order to understand accessibility between origins and destination points, distance rank and cost rank are assigned to each destination point, beginning at every origin.[217] A place where the distance rank minus cost rank value is positive shows that transportation from this origin to this destination point is easy, while negative values indicate more difficult transportation.

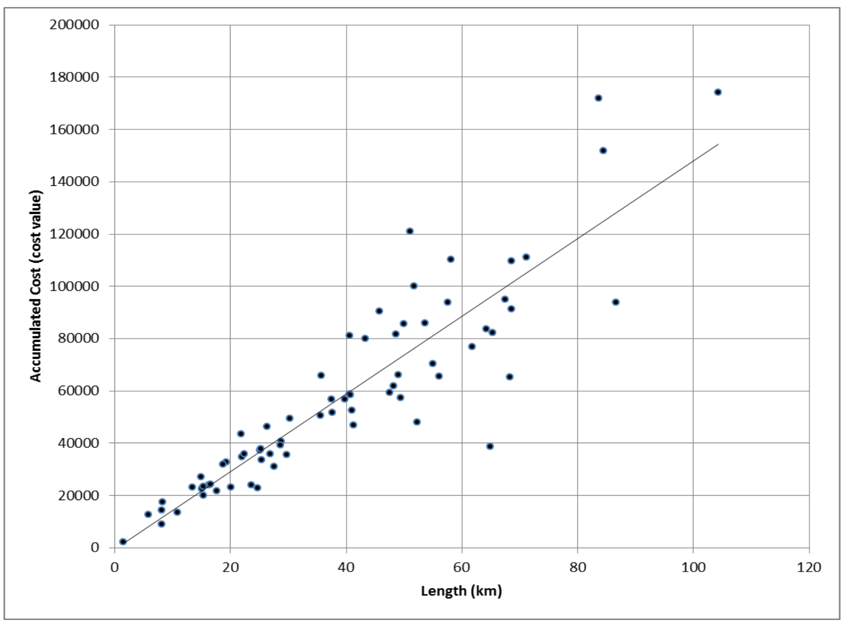


Figure 7.60 Accumulated cost values – length of LCPS

According to the results of the study, there is a strong correlation between the length and the cost of a path. The distance rank-cost rank values, two routes are exceptional to this correlation: Gazioura-Arhoy, Gazioura-Kaleköy. The distance rank-cost rank value for the Gazioura–Arhoy route is -3 while its distance rank is first (the closest destination point to Gazioura) and its cost rank is last (the destination point with the highest cost).

[217] This accessibility approach was applied to a movement modeling study for late prehistoric Michigan (Howey, 2007).

Taking a close look at the Gazioura-Arhoy route reveals that the high cost value of the surroundings of Arhoy inverts the relationship between distance and cost. The Gazioura-Kaleköy route is third in the distance rank and first in the cost rank, meaning the most accessible route. However, the straight line of the Gazioura-Kaleköy route crosses high hills. Therefore, slope values were examined for the Gazioura-Kaleköy, Gazioura-Arhoy and Gazioura-Comana routes (Figures 7.61, 4.62 and 7.63). The examination found that the Gazioura-Kaleköy route continuously follows a trajectory with high slopes. Therefore, this route does not comply with the minimum effort assumption in real life human transportation preferences. As a result, it is thought that factors other than cost might have affected the formation of this route. The slope histograms for the Gazioura-Arhoy and Gazioura-Comana routes give closer results to the minimum effort preference principle mentioned above. The higher cost of the Gazioura-Arhoy route in comparison to other routes starting from Gazioura results from land use costs.

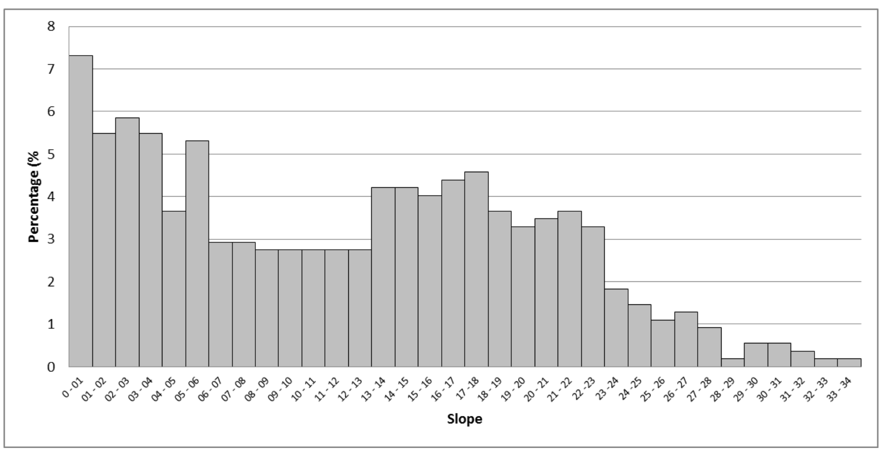


Figure 7.61 Slope histogram of the Gazioura – Kaleköy route

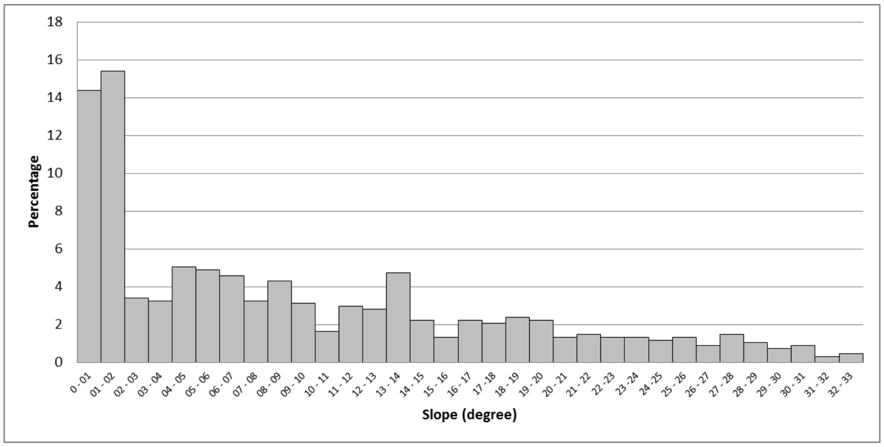


Figure 7.62 Slope histogram of the Gazioura - Arhoy route

The spatial relation between Gazioura and Arhoy is important because, according to textual evidence during the Third Mithradatic War, Romans captured these fortresses and while using the Gazioura as a command center, they used the Dadasa fortress as a weapons depot. There are some assumptions that the Dadasa can be identified with Arhoy. My personal communication with Professor Olshausen, who has done colossal work on historical geography of the Pontos, encouraged me to link Arhoy with Dadasa. So the location of Arhoy was kept quite secret to keep the weapons safe. The path from Gazioura to Arhoy may have been quite important for this reason.

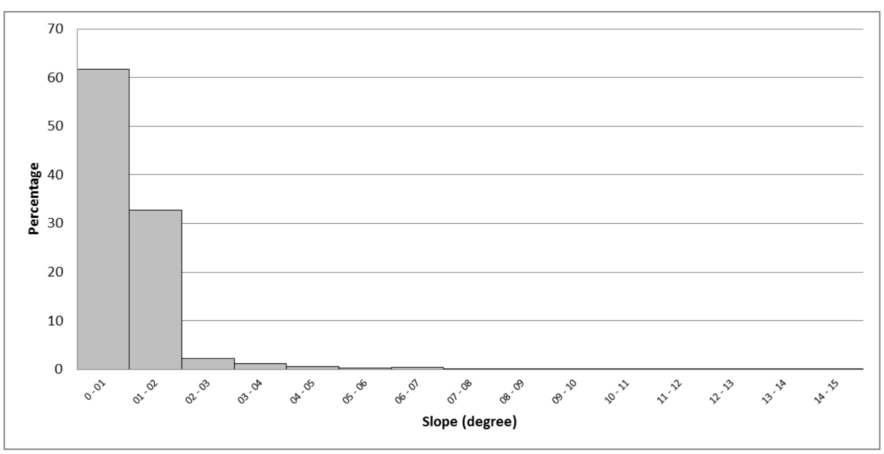


Figure 7.63 Slope histogram of the Gazioura - Comana route

Table 7.20 The length and cost of the least cost paths

Source	Dest_ID	Destination	Length (km)	Cell Count	Total Cost	Distance Rank	Cost Rank	Distance Rank - Cost Rank
Amaseia	A_01	Kayrak	14.99	458	27059.58	3	3	0
Amaseia	A_02	Kaleköy	10.85	242	13562.78	2	1	1
Amaseia	A_03	Yassıçal	8.10	253	14275.17	1	2	-1
Amaseia	A_04	Eupatoria	65.29	1715	82252.51	5	5	0
Amaseia	A_05	Kaleboğazı	26.93	696	35788.30	4	4	0
Bogazkesen	A_06	Katırmağara	67.49	1984	95063.48	6	6	0
Bogazkesen	B_01	Simeri	24.67	659	23003.93	2	1	1
Bogazkesen	B_02	Basamaklıgeçit	23.67	686	23952.46	1	2	-1
Bogazkesen	B_03	Kevgir	64.92	1746	38794.88	4	3	1
Bogazkesen	B_04	Caberia	52.27	1469	48037.88	3	4	-1
Caberia	Ca_01	Esatlı	68.54	1869	109797.23	1	1	0
Caberia	Ca_02	Arıkmusa	84.52	2579	151792.05	2	2	0
Chabakta	Ch_01	Cıngırtkayası	19.33	557	32882.09	1	1	0
Dazimon	Da_01	Caberia	49.39	1214	57513.71	4	4	0
Dazimon	Da_02	Geyras	5.87	226	12749.71	1	1	0
Dazimon	Da_03	Çördük	8.28	309	17577.84	2	2	0
Dazimon	Da_04	Arhoy	21.98	589	34700.45	3	3	0
Donalar	Do_01	Salarkoy	51.75	1684	100184.25	2	2	0
Donalar	Do_02	Asarkaya	83.71	2830	171958.09	3	3	0
Gazioura	Ga_01	Kayrak	25.36	603	33658.49	2	2	0
Gazioura	Ga_02	Kaletepe	29.70	809	35521.23	4	3	1
Gazioura	Ga_03	Arhoy	25.07	678	37296.45	1	4	-3
Gazioura	Ga_04	Toka	47.55	1400	59419.22	6	6	0
Gazioura	Ga_05	Comana	54.94	1630	70283.90	7	7	0
Gazioura	Ga_06	Amaseia	37.60	930	51658.15	5	5	0
Gazioura	Ga_07	Kaleköy	27.63	550	30994.18	3	1	2
Gerdekkaya	Ge_01	Bükse	39.74	1008	56756.36	4	3	1
Gerdekkaya	Ge_02	Gökçeli	53.60	1533	86032.74	7	7	0
Gerdekkaya	Ge_03	Sazakkale	22.44	592	36008.33	1	1	0
Gerdekkaya	Ge_04	Hisarkavak	49.04	1204	66082.41	6	5	1
Gerdekkaya	Ge_05	Kazankaya	40.61	1483	81003.07	5	6	-1
Gerdekkaya	Ge_06	Muratkolu	35.69	1163	65942.53	3	4	-1
Gerdekkaya	Ge_07	Simali	28.73	699	40652.79	2	2	0
Kainon Chorion	Kk_01	Simeri	15.06	355	22581.52	1	1	0
Kainon Chorion	Kk_02	Basamaklıgeçit	16.31	373	23928.12	2	2	0
Kainon Chorion	Kk_03	Chabackta	48.56	1281	81715.24	4	4	0
Kainon Chorion	Kk_04	Caberia	30.35	990	49583.57	3	3	0
Camisa	Km_01	Hafik	41.25	967	46978.75	3	2	1
Camisa	Km_02	Deliktepe	8.10	245	9070.74	1	1	0
Camisa	Km_03	Osmaniye	41.07	1151	52467.07	2	3	-1
Kapıkaya	Kp_01	Tependeliği	13.49	344	23164.86	2	2	0
Kapıkaya	Kp_02	Sagylion	56.10	1547	65674.26	3	4	-1

Source	Dest_ID	Destination	Length (km)	Cell Count	Total Cost	Distance Rank	Cost Rank	Distance Rank - Cost Rank
Kapıkaya	Kp_03	Asarkale	1.51	40	2371.61	1	1	0
Kapıkaya	Kp_04	Terelek	68.29	1895	65275.70	4	3	1
Karagöz	Kg_01	Comana	16.64	386	24423.17	1	1	0
Karagöz	Kg_02	Caberia	48.22	1321	62038.34	2	2	0
Kümbet	Kb_01	Akçakale	15.39	345	20085.36	1	1	0
Kümbet	Kb_02	Hafik	64.22	1580	83750.68	2	2	0
Kümbet	Kb_03	Deliktepe	86.60	2507	93713.65	3	3	0
Kurulkayası	Kr_01	Esatlı	57.54	1519	93748.01	3	2	1
Kurulkayası	Kr_02	Arıkmusa	51.13	1927	120977.56	2	3	-1
Kurulkayası	Kr_03	Gölköy	37.52	988	56856.41	1	1	0
Sagylion	S_01	Pimolisa	49.92	1615	85523.88	2	3	-1
Sagylion	S_02	Asarkaya	104.32	3191	174260.03	4	4	0
Sagylion	S_03	Andrapa	17.67	411	21822.68	1	1	0
Sagylion	S_04	Amaseia	61.84	1461	76951.19	3	2	1
Taulara	T_01	Kümbet	58.06	2043	110133.08	3	4	-1
Taulara	T_02	Akçakale	71.09	2048	111158.37	5	5	0
Taulara	T_03	Kunduz	28.65	712	39282.23	2	2	0
Taulara	T_04	Karagöz	18.71	513	31885.53	1	1	0
Taulara	T_05	Ermelik Kale	68.54	1723	91255.98	4	3	1
Y. Arım	Y_01	Salarköy	25.25	655	37941.42	3	2	1
Y. Arım	Y_02	Boyabat	15.35	396	23359.80	1	1	0
Y. Arım	Y_03	Pimolisa	45.79	1474	90350.30	5	5	0
Y. Arım	Y_04	Terelek	21.84	719	43532.94	2	3	-1
Y. Arım	Y_05	Çukurhan Kale	26.34	774	46439.67	4	4	0
Zela	Z_01	Ermelik	43.30	1468	79882.44	4	4	0
Zela	Z_02	Kızlarkayası	40.77	1079	58458.97	3	3	0
Zela	Z_03	Pleuramis	35.60	943	50457.39	2	2	0
Zela	Z_04	Gazioura	20.12	460	23039.55	1	1	0

The problems with LCPA are that it idealized the terrain of the study area and created routes that sometimes do not reflect the way roads were used in the past (Branting, 2012: 212). In addition, human behavior does not display uniformity. In other words, people do not move in a linear manner. Cognitive and social factors affect their movements (Branting, 2012: 219). Therefore, the pathways obtained by this analysis should be considered hypothetical. However, these hypothetical routes could possibly lead to undiscovered forts sites and features. When partial routes are discovered, cost path analysis can be used to determine the missing extensions of the routes.

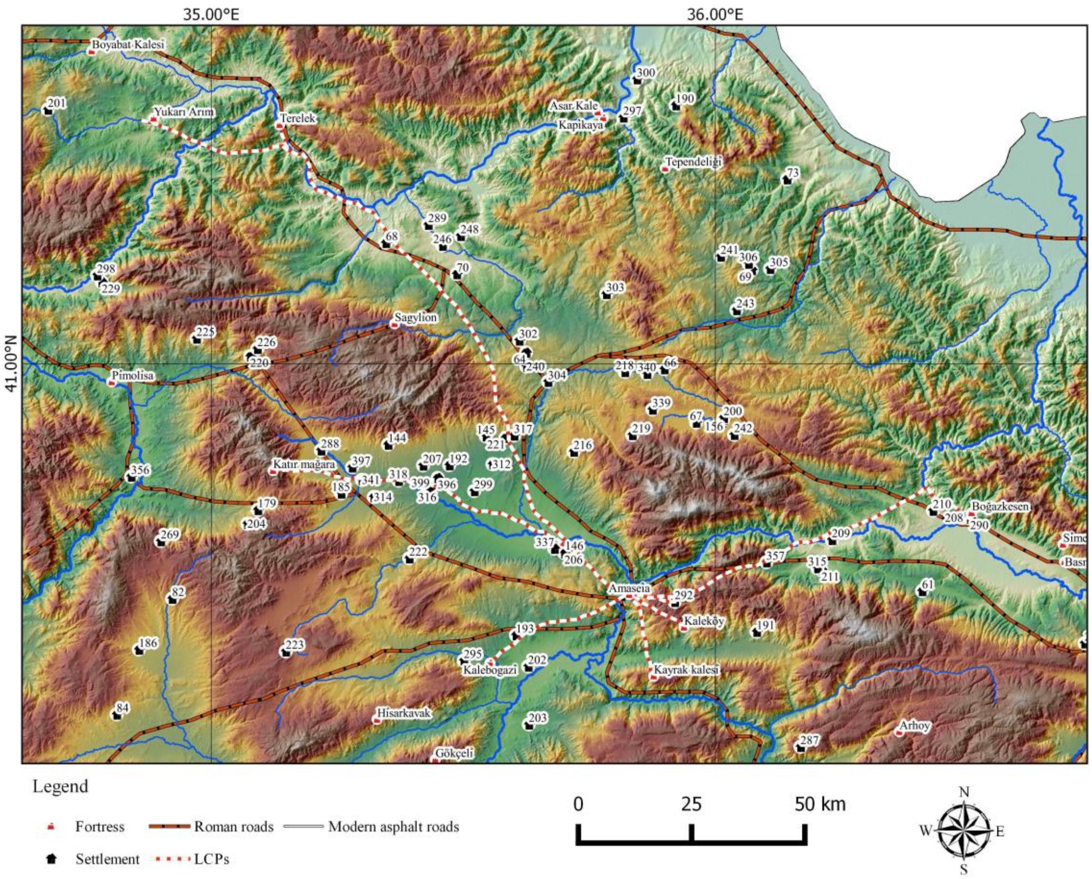


Figure 7.64 Amaseia originated routes

7.6.3.4. A Comparison of LCPA Routes with Roman Roads

Here the hypothetical roads obtained by LCP analysis are evaluated by comparing them to the Roman roads.

Subregion 1 – Northwest Region (the Amnias Valley)

The routes that originate in Donalar, Yukarı Arım, Kapıkaya and Sagylion are in the northwestern part of the study area (Figure 7.65).

The northern branch of the Roman road follows the Gökırmak River through the northwest region west of Donalar. The western edge of the Roman roads for our study region is limited by Pompeiopolis, approximately 10-15 kilometers southeast of Donalar. There are no Roman roads from Donalar to Doğanlı (Do_03) or to Asarkaya (Do_02). On the other side, the route for Donalar to Salarköy (Do_01) parallels a Roman road.

The routes from Yukarıarım reach their final destinations in three directions, north, east and south. The routes north, Y_01 and Y_02, are parallel until Boyabat, where route Y_01 goes through the small valley in the west instead of following the Gökırmak to Salarköy. The route from Yukararım to Çukurhan (Y_05) follows a valley close to the Dodurga settlement (394). There are no Roman roads near this route.

The route from Yukarıarım to Pimolisa (Y_03) parallels the Kızılırmak and the modern asphalt road. Settlements located near Kızılırmak, Aşıbükü (229) and Erenler Tepesi (298) strengthen the likelihood of its following the Kızılırmak. The route from Yukarıarım goes to Terelek and this route cannot be associated with any ancient roads (Y_04).

The route from Tependeliği to Kapıkaya (Kp_01) follows the modern road over slopes. Asarkale is located very close to Tepedenliği and these two fortresses are connected by a short route (Kp_03). The routes from Kapıkaya to Terelek and Sagylion (Kp_04 and Kp_02) pass over the modern Altınkaya reservoir. This can be explained by topographical changes due to the dam.

The routes from Sagylion to Andrapa (S_03) and west to Pimolisa (S_01) follow the Roman roads. To the west, the route from Pimolisa to Asarkaya (S_02) separates from the Roman road and follows a branch of the Kızılırmak to Asarkaya. Along the route to Pimolisa, the Akkaya (220) and Kaleciktepe (226) settlements prove the accuracy of both the Roman road and the LCPA route. Another route from Sagylion heads southeast and joins the Amaseia road. This route suggests a route to Chiliocomon through the mountains instead of Roman roads crossing Havza (304). After plain of Chiliocomon, the route follows the Roman road, passes various settlements and reaches Amaseia.

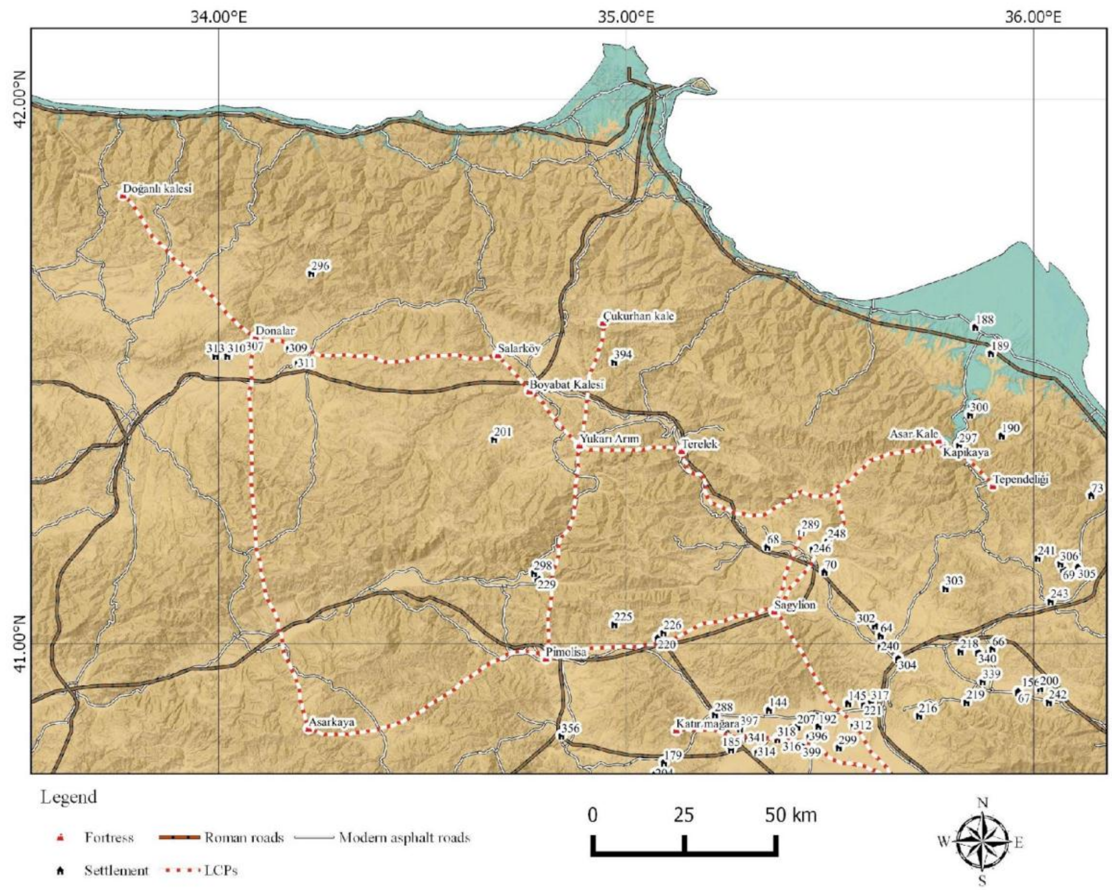


Figure 7.65 Subregion 1 – Northwest region

Subregion 2 – The Central Region

This subregion is in the middle of the study area and has seven routes from Amaseia, Dazimon, Gazioura, Gerdekkaya, Karagöz, Taulara and Zela. The Roman roads that connect the inner part of the region are: the road from Havza to Boğazkesen, roads from Amaseia to Diacopene, the road to Muratkolu fortress, roads to Zela and roads to Dazimon and Sebasteia (Figure 7.66).

The first road from Amaseia leads to Katır Mağarası (A_06). This road also intersects with two Roman roads from the northwest. The road that connects with Kaleboğazı to the west (A_05) also parallels the Roman road in the same direction. Doğantepe (193), which lies on this route, appears to confirm its existence. The route that connects Kayrakkalesi (A_01), Yassıçal (A_03) and Kaleköy (A_02), which are closer to Amaseia, does not pass through any Roman or Hellenistic settlements. The road from Amaseia and to Boğazkesen (Eupatoria) (A_04) passes near Kalekalehöyük (209), İkiztepe I (211), Kale Hizarönü Tepe (315), Yukarıbaraklı Tepe (357) and intersects a Roman road. The problematic area in this route is where it goes to Boğazkesen. The plateau formed by the dam reservoir on this part of the road was identified as least cost on the cost map.

A very important route that can provide us information lies between Amaseia and Eupatoria. In fact, during the Third Mithradatic War against Rome, Mithradates VI's main headquarters were in Amaseia, and this route was probably used to send military aid to the valley of Phanaroia.

The second conjunction is formed by a number of roads thought to have Gazioura as their point of origin. The road from Gazioura to Amaseia (Ga_06) lies in the same direction as the roads to Kayrak Kalesi (Ga_01) and Kaleköy (Ga_07). The Roman road to Amaseia, on the other hand, parallels the Yeşilırmak. The road from Gazioura to Arhoy goes east to west (Ga_03). There are no Roman roads for this route. The roads east from Gazioura connect Kaletepe (Ga_02), Dazimon (Ga_04) and Comana (Ga_05), respectively, and parallel the Yeşilırmak and the Roman road. The Alitepesi (55) and Burga (59) settlements and the Roman road confirm its existence.

There are two roads to Zela from the southwest. These roads come from Kızlarkayası (Z_02) and Pleuramis (Z_03). After leaving Zela, these roads deviate from westbound Roman road to the south as they approach to these two final destinations. The Kayapınarıtepe (199) and Salur (196) settlements are located on this route. The road from Zela to Ermelik (Z_01) follows a more linear route than the Roman road. There seem to be no settlements that confirm this route. The road that connects Zela to

Gazioura (Z_04) overlaps with the Roman road.

The roads south to Taulara (Da_03) and Geyras (Da_02) follow the Roman road. The Dazimon-Cabeira (Da_01) connection, on the other hand, follows the Roman road and the modern asphalt road. There are no Roman roads on the Arhoy connection (Da_04).
The roads from Gerdekkaya are not associated with any Roman roads except the Muratkolu fortress road (Ge_06) that reaches Gerdekkaya from the west crossing the Roman road. The Hacılarhanı (217) and Kalehisar (258) settlements are located near this route. On the hand, roads go northeast and east near Sazakkale (Ge_03), Simali fortress (Ge_07), Bükse (Ge_01) and Hisarkavak (Ge_04) and Pazarlı settlement (265). The roads south to Gökçeli (Ge_02) and Kazankaya (Ge_05) follow the modern road. Akpınar (81), Gökören Höyük (23), Soğucak (239), Kızılhamza Höyük (271), Asar (260) and Hocasultantepe (273), which are located near this route, confirm its presence.
The roads that originate in Taulara usually connect Taulara to southern fortresses. Only the Karagöz connection (T_04) is north of Taulara. Close to the Karagöz conjunction there is the Sevindik (291) settlement. The Ermelik (T_05) and Kunduz fortress (T_03) roads, although in fragments, follow the Roman road. On the other hand, the Akçakale and Kümbet fortress connections follow Roman roads south. There are many settlements on and around these routes.

Roads from the Karagöz fortress, on the other hand, go north to Comana and Cabeira. One goes to Comana, which is closer. The other goes directly north to Cabeira instead of using the Roman road through Comana.

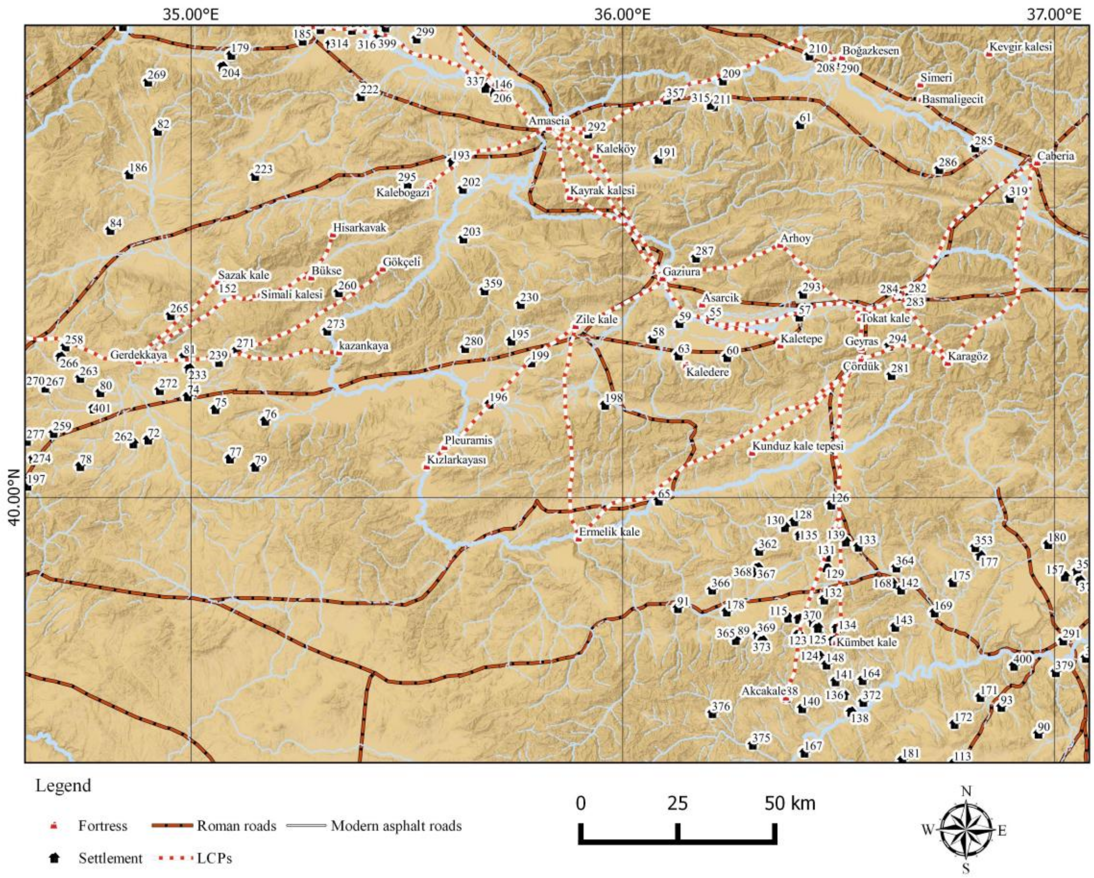


Figure 7.66 Subregion 2- The Central Region

Subregion 3 – The Southeast Region

The routes in this region originate in Camisa and Kümbetkale. The Roman road follows the Kızılırmak River from east to west direction and divides into four branches from north to south at Sebasteia (291) (Figure 7.67).

The Kümbetkale route goes to Akçakale (Kb_01) with a small path to the southwest. This route cuts through the valleys and passes near the Yücebaca Kalesi (148) settlement. The route to Hafik (Kb_02) on the south intersects the Roman roads to Sebasteia. This route passes close to the Küllük Tepesi (171), Dedeli Kale (90) and Kurtderesi (93) settlements. The route east parallels the Roman road by the Kızılırmak

River and goes to Deliktepe (Kb_03). Along this route there are many settlements.

The Camisa route goes to Hafik (Km_01) in the south and to Deliktepe (Km_02) in the west and along the Kızılırmak parallel to the Roman road to the Osmaniye fortress (Km_03).

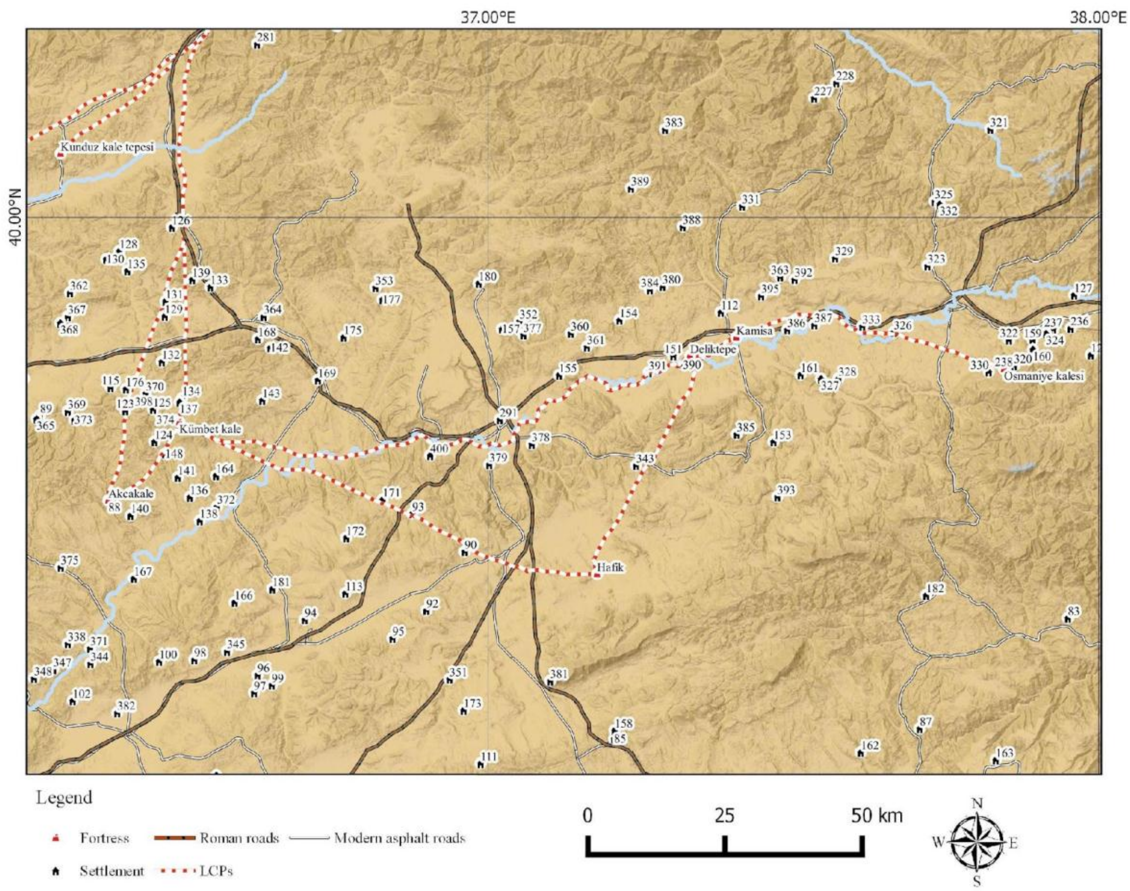


Figure 7.67 Subregion 3- The Southeast Region

Subregion 4 –The North Region

The northern region has five road networks. The points of origin of these roads are at Boğazkesen, Cabeira, Kainon Chorion, Chabakta and Kurulkayası. The Roman road network in this area is comprised of two routes located on the coast of Black Sea and in the valley of Kelkit, both east to west. These two roads are connected to each other by the road from Kaleönü, close to the Black Sea, and branch into other roads in the south.

Connection points are with Cabeira and with roads to Esatlı in the Kelkit Valley from north to south (Figure 7.68).

The first road network in the most western location of the northern region is the network which has Boğazkesen at its center. This route extends to the southeast alongside the Kelkit Valley and reaches Simeri (B_01), Basmalıgeçit (B_02) and Cabeira (B_04). This road follows the Roman route along the valley of Kelkit. The fortress of Kevgir (B_03) is located to the northeast of Boğazkesen and connects to Boğazkesen across the Yeşilırmak.

The roads from Cabeira go east to the Esatlı (Ca_01) and Arıkmusa (Ca_02) fortresses. This road was positioned east to west and ran parallel to the main Roman road 20 kilometers north in the Kelkit Valley. The branch of this road going to Arıkmusa intersects the Roman road from north to south.

The Kainon Chorion (Kevgir) is a substantial road because it joins numerous roads from east to west. The Kevgir fortress joins with Ünye in the north (Kk_03) and with Simeri (Kk_01), Basmalıgeçit (Kk_02) and Cabeira (Kk_04) in the south. The roads extending towards the south are relatively short and reach their destinations in the Kelkit Valley without contacting any Roman roads. The northern road goes to the fortress of Ünye located in the Black Sea region. This road is parallel to the modern road and has no Roman roads on its route. One other road situated in the north goes from Chabakta (Ünye fortress) to Cıngırtkayası (Ch_01) along the coast of the Black Sea from east to west.

Routes from Kurulkayası go to Gölköy, Esatlı and Arkmusa in the west. The route between Kurulkayası and Gölköy (Kr_03) and the route to Arıkmusa (Kr_02) follow the modern roads. The route to Esatli follows the Melet River and goes to Esatlı fortress (Kr_01).

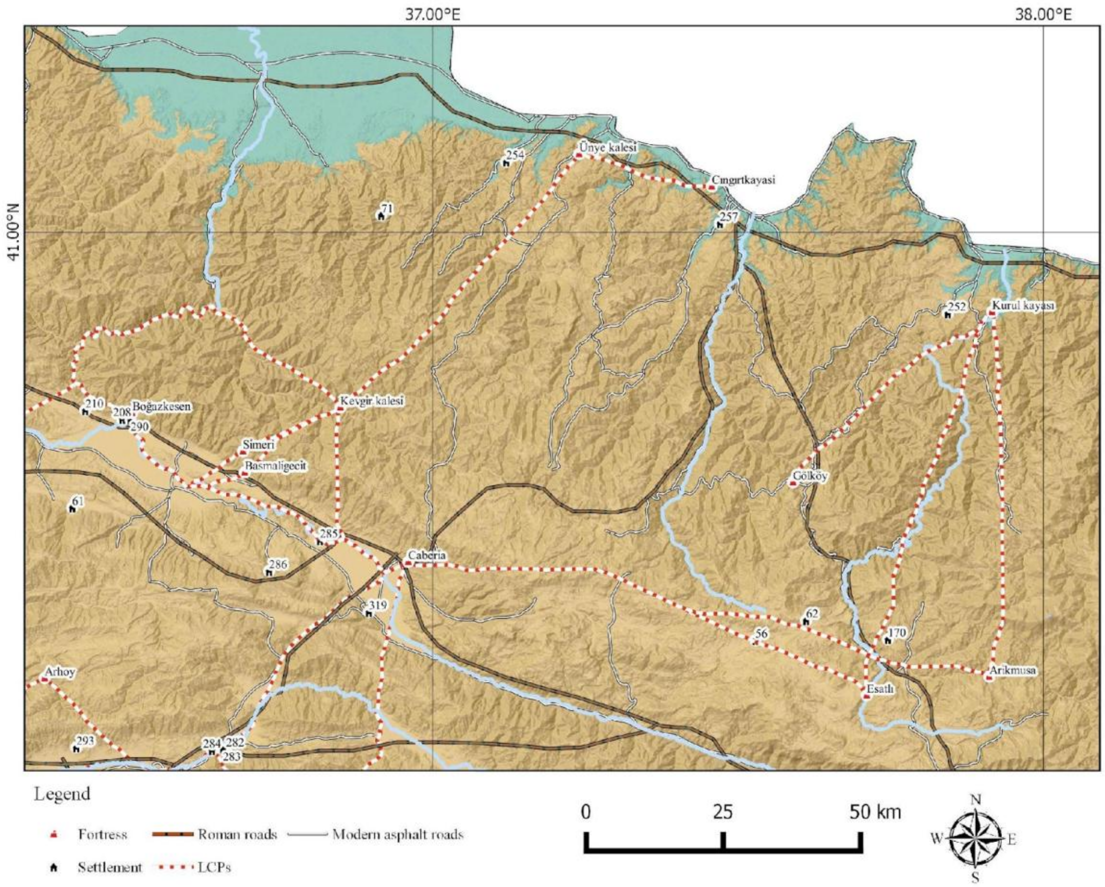


Figure 7.68 Subregion 4- The North Region

7.7. General Discussion

The administration of the Mithradatic kingdom was very much based on a military pattern. Fortresses must have been a crucial component of the landscape. Ancient sources also reveal the function of fortresses as a focus for the government. This chapter evaluated fortresses as an interconnected system with relationships to each other and their surrounding environments in order to clarify their functions.

The chapter relies on statistical analysis and largely on GIS data, which is fundamental for regional studies. The results provide valuable information about geospatial background of the fortresses. Analysis based on elevation reveals that the fortresses had been built on selected locations where elevations do not exceed 1,200 meters. They are located on slopes between the 10°-15° and 25°-30° ranges. The effect of aspect and lithology on fortress site selection could not be determined. However, the fortresses were constructed on limestone, which carves easily and is a very efficient building material for various structures. Technically, fortresses would not have been effective if they were not located on points where substantial amounts of water was not naturally available. Analysis of distance to rivers found close relations between water and site preference. Fortresses in the Mithradatic landscape were typically situated near rivers. Site selection was far from random, and this is substantiated by the presence of rock-cut tunnels. Strabo uses the term *hydreia* for these tunnels. Tunnels with steps led to water resources with almost infinite capacity. Since the fortresses sit on rocky outcrops access to water resources by tunnel inside the fortress was crucial for military personnel.

One of the important aims of this chapter was to investigate the function of the fortresses according to their geographical positions. A study of the function of these fortresses was done by Kolb previously in his dissertation (Kolb, 1982). My study was an attempt to reevaluate Kolb’s approach using GIS. In order to find out the potential pattern for topographical position and control over the agricultural fields, visibility, arable land and visible arable land were investigated for each fortress. Parameters useful for the geographical position of the fortresses and related to their vicinities were used to determine their functions.

Table 7.21. Comparison between Kolb’s and my results

ID	Name	5 km	10 km	15 km	Function	Kolb’s
1	Çördük	0	2	4	DEF	DEF
2	Geyras	0	2	6	DEF	DEF
3	Tokat	0	2	7	DEF	ADM
4	Karagöz	0	0	2	DEF	
5	Arhoy	0	0	2	DEF	ADM
6	Kaletepe	0	1	4	ADM	
7	Amaseia	0	1	4	DEF	DEF
8	Muratkolu	0	2	4	ND	
9	Gerdekkaya	0	4	9	ND	
10	Kurulkayası	0	1	1	DEF	
11	Kaleköy	1	1	2	ND	
12	Kaledere	1	4	5	ADM	
13	Turhal	0	2	4	ADM	DEF?
14	Zela	0	0	3	ADM	
15	Boğazkesen	2	3	3	ND	ND
16	Caberia	0	1	2	ND	ADM
17	Salarköy	0	0	0	ADM	
18	Boyabat	0	0	1	ADM	DEF
19	Tependeliği	0	0	2	DEF	
20	Cıngırtkaya	0	1	1	DEF	ND
21	Ünye	0	0	1	DEF	DEF?
22	Kapıkaya	1	2	3	DEF	
24	Pleuramis	0	0	0	ADM	ADM
25	Sagylion	0	0	2	ADM	ND
26	Asarkaya	0	0	0	DEF	
27	Kazankaya	1	1	2	ADM	
29	Gölköy	0	0	0	DEF	
30	Kayrak	0	0	1	ADM	
31	Hisarkavak	0	0	1	ADM	
32	Arıkmusa	0	0	0	DEF	DEF
33	Sazakkale	1	1	3	ADM	ND
34	Kızlarkaya	0	0	0	ADM	
35	Pimolisa	0	0	0	ADM	DEF

36	Gökçeli	0	1	1	ADM	ND
37	Donalar	1	4	5	ND	
38	Kevgirkale	0	0	0	DEF	DEF
39	Esatlı	0	1	2	DEF	
40	Terelek	0	0	0	DEF	
42	Bükse	0	1	2	ADM	
43	Yukarıarım	1	0	0	DEF	
44	Camisa	0	5	14	ADM	DEF
46	Kunduz	2	0	0	ND	
47	Akçakale	2	2	14	ND	DEF
48	Deliktepe	7	4	11	ADM	
49	Kumbet	0	13	21	ND	
50	Hafik	0	0	0	ADM	ADM
51	Ermelik	0	0	0	ADM	ADM
52	Çukurhan	0	1	1	DEF	
53	Basamaklı	0	0	2	ADM	
54	Simeri	0	0	0	ND	
402	Osmaniye	5	8	11	ADM	
403	Katırmağara	0	3	6	ADM	
404	Simali	0	1	3	ADM	
405	Kaleboğazı	1	3	4	ADM	ADM
406	Eğrikale	0	0	0	ND	ND
407	Iskilip	1	1	2	ND	ND
408	Gavurkaya	0	0	0	DEF	

Of the fortresses investigated in this study, 25 were also examined by Kolb. In 14 cases, the same conclusions were drawn. This study examined 29 fortresses that were not part of Kolb’s research.

Viewshed analysis allowed for a better understanding of landscape and relations between fortresses. It is the way to examine and make hypotheses about their areas of influence. This relation based on visibility revealed that the fortresses have visual control over the region, and some of them had direct control over the plains and their inhabitants. The analysis was conducted for fortresses by indicating buffer zones, and then the chi-square test was used to compare the results statistically. The outcome of this analysis was also merged with function parameters.

The understanding attained by illustrating the interrelations of fortresses with the settlements in their surroundings is significant. It serves as an aid in determining whether a spatial and hierarchical dispersion occurred or not. Inadequate data on settlements due to insufficient surveys made demonstrating a thorough scheme of interrelations between fortresses and settlements impossible. Despite this scarcity, the settlement data set was constructed based on previously conducted surveys, and the correlations between fortresses and spatial data were examined.

The spatial relationships of fortresses and settlements were examined by counting settlements in 10-15 kilometer buffer zones around fortresses and Thiessen polygons of fortresses. According to results, fortresses could have interrelationships with 2-5 settlements as far as up to 15 kilometers. It is improbable to have acquired an adequate understanding of dispersion of settlements around fortresses due to the scarcity of survey data. In any case, that data that could be obtained were assembled, and an analysis was done using a Thiessen polygon. However, due to the superficial nature of the Thiessen polygon analysis accurate information about fortress-settlement relationships could not be obtained. The data regarding settlements were also insufficient to provide a spatial pattern. Despite this, buffer zones of 10-15 kilometers were assigned to the fortresses as a hypothetical consideration in order to further inspect any possibilities. As can be construed from the data above, evaluating the settlements surrounding the fortresses did not lead to a coherent result about the functions of the fortresses. The dispersion of settlements for administrative fortresses that control and regulate agricultural lands were no different from those for defensive fortresses.

LCPA proved to be very valuable in rendering the road network between the Hellenistic period fortresses comprehensible. Data obtained in many instances coincided with that of the Roman network, suggesting that the same network was in use in the pre-Roman periods.

A cost map was reproduced for the entire study area. The extensive transformation of the topography (altitude and elevation) caused by modern dams in this area also affected the cost map reducing costs in some instances. Examples of this are the impact exerted by Altınkaya Dam on the Kapıkaya-Terelek-Sagylion route and the Hasan Uğurlu Dam on the route of Amaseia-Boğazkesen and Boğazkesen-Kevgir Fortress. In addition to these the probability of not accurately representing the transportation choices of ancient people, and therefore the actual precise cost surface, which is based on estimates, should be considered. For this reason, road maps produced by this study can be instrumental and productive in yielding further results.

Finally, by using GIS the collected data was stored and given the possibility to engage with other data. The implications of GIS use were examined extensively used while discussing the Mithradatic landscape.

CHAPTER 8

CONCLUSION

The study of fortifications is an indispensable component of any study of Hellenistic history, since it sheds light on many aspects of the period: politics, military organization and society. Most of the studies concerning fortifications in Anatolia (which was quite unstable, politically during the Hellenistic period) were not explained fully or conducted holistically. As a matter of fact, in Anatolian archaeology, urban fortifications were the only type truly studied. Rural fortifications have become an avenue of research along with the onset of studies on the Chora's of cities. Defense of territories is observed as a concept in the 5th century in mainland Greece. Its aim was to protect both rural life and agricultural areas and also to eradicate the threat before it reached the cities. As can be observed from Boiotia and Argolis, fortresses formed a system of network and secured the chora and transportation. At the same time protection of rural life and agricultural lands was essential for the economic continuation of the state. It is possible to say that Mithradates VI created a system of administration based on territorial defense. The administration of rural areas was left to the fortresses after the taking of the Bosporos under such hegemony.

Territory and fortresses should be considered inseparable and interdependent concepts. The ultimate components of territories are agricultural fields and rural communities. The functions of the fortresses were to protect the territory, and also to be a military base to protect the agricultural activities in such territory.

The Achaemenid type of formation lies at the base of territorial fortification in Pontic Landscape. Iranian elements are commonly observed in governmental and social practices. The system of satrapy was effective throughout the Hellenistic Period in Anatolia. The amalgamation of Persian and Hellenic elements by Pontic kings is clearly recognized both socially and militarily. The objective of the system of satrapy was to administer the agricultural lands and increase productivity. *Eparchia* was a sub-unit in this system of governance in the Pontus. Agricultural lands surrounding the Zela and Camisa fortresses were defined as *eparchy*. In addition, also as known from Seleucid examples, *strategos* was at the top of the units of *eparchy*. Administrational functions of fortresses were strengthened by this method. In line with this, even more supportive information comes from Cappadocia, there the geography shared the same ancestral background. Here the *strategiai* were the administrational unit. Cappadocia was in fact divided into ten *strategiai*. The ruling class and aristocrats had fortresses and the majority of the inhabitants were living in village settlements around these fortresses. Reinach states that *eparchies* in Pontos should have been linked to *strategoi*. The commander of the fortress, as the administrative officer, was responsible for solving any problems that encountered. A number of soldiers that served in the fortress were probably drafted from the surrounding settlements.

Settlements in the Pontic Kingdom lived in a scattered manner over the landscape and seemingly chose slopes of plains and hill-tops in the valleys due to their security and defensive concerns. They also re-inhabited the mound settlements which were strategically located close to water sources. Conflict, frequent unrest and almost 30 year long war between Mithradates and Rome in Anatolia during the Hellenistic period were decisive factors for choosing the location. Fortresses were frequently placed at the edges of plains, suggesting a concern with the surveillance of agricultural land and settlements. Settlements associated with fortresses are most likely to lie in the valleys or plains below them. Rural communities were conducting their agricultural activities in valleys and plains, secured by the guarding of the fortresses. It is very hard to claim a homogeneous relationship between settlements and fortresses due to unsystematic collection of data from surveys. It is easy to see when we look at the distribution of settlements on the map that we do not yet have the complete picture. Better results were obtained when we used topographical factors (such as valleys and plains) and examined by using groupings rather than investigating individual settlements' relationships with individual fortresses.

Fortresses were frequently placed at the edges of arable plains, suggesting a concern with the surveillance of agricultural land. Settlements associated with fortresses are most likely to lie in the valleys or plains below them. Although not for the settlements, it is possible to say for the fortresses that they were built systematically by the ruling powers. Rural communities were conducting their agricultural activities in valleys and plains, secured by the guarding of the fortresses.

Life in the Mithradatic Kingdom is too complicated to provide us with data and examples for comparison. The lack of Greek style urbanization affected the structuring of communities in different ways. Rural communities constituting the basis of the kingdom, were formed scattered throughout valleys and plains protected by fortresses commanded by generals and some communities was formed around temple states, Comana, Zela, Ameria, ruled by priests who were appointed by the king. A large number of territories were cultivated and valued by the communities as well as the overall kingdom.

It is not hard to deduce that the kingdom had an organized economic system here, when the site distribution is contemplated in its' entirety. With this in mind, the structure of the organization of production, distribution and transportation can be explained as such; the rural country is in the interior of the kingdom and provided agricultural production and trade. The trade and distribution of products were achieved in these temples states which also housed attractive market places and trade festivities in the name of the deities. They made it possible to have long-lasting economic success in the Pontic landscape, since by way of the coastal cities, products were transported internationally. When all this is considered the importance of rural communities for the economy of the kingdom is revealed to be immense. Therefore, it can be stated that the backbone of economy in the kingdom was agricultural activity and those activities were performed by rural communities. The Mithradatic Kingdom had fertile plains (Phanaroia, Daximonitis, Chiliocomon) which provided income to the kingdom. The pontic communities were living in these plains and fortresses have been situated on the ridges surrounding the plains or on the entrance of the valleys with a commanding position protecting community life and agricultural lands.

It is possible to summarize spatial organization in the Pontic landscape based on this study that has been carried out. Fortresses were constructed on outcrops. Rural settlements were established on slopes and hill-tops in valleys. Settlements in the Mithradatic Kingdom can be considered organized in accordance with military and religious needs. Fortresses and temple states are the administrative constituents that determine the spatial organization.

Fortresses and the rulers of the fortresses (*generals and phrourarchs*) should be thought of as socio-economic actors. They must have functioned as officers who interacted with the community, controlling rural life and resolving conflicts. They were assigned by the king and most likely were aristocrats who were close to the king. Gazioura, Amaseia and Pimolisa were identified as royal fortresses and all had phourarchs as heads of administration by royal appointees. Commanders of the fortresses played significant roles during the wars. Moreover, they were took part in the Delos monument which was built for pure propaganda. This also implies that commanders were not only influential in the operational arena, but also in the strategic and political discourse.

The Pontic fortresses were determined to defend the countryside-territory and secure the borders of the kingdom. These fortresses were placed where they were as a result of the kingdom's expansionist policy and were the physical manifestation of the kingdom's possession. Fortresses were important because they were visible expressions of the dominance of the kingdom. These fortresses, which were positioned in the strategic places by Mithradates who wanted to set domination over the area. They played an important role in eliminating threats that might have been directed to fertile agricultural lands of the kingdom. The reign of Mithradates VI provides most of our information about the kingdom. This exceptional period includes the struggle of Mithradates VI against Rome and the grand strategy for which he followed includes the take the word of loyalty of fortresses during this struggle. Fortresses fueled the war economy by minting coins and generating financial resources for military wages.

It is possible to say that fortresses form the border of the kingdom and provide border security. Fortresses follow the line which Strabo mentions, to form the south and southwest border of the kingdom, the border with an unknown mountain range and the border between Galatia and Pontos. The locations of Deliktepe, Hafik, Kemis, Akçakale, Osmaniye and Kümbet fortresses make up a line that confirms Strabo. These locations make it possible to say that there is a frontier that follows Halys (Kızılırmak) on the south and one that follows Scylax (Çekerek) crowned by Gerdekkaya (possibly Mithradateion) on the west. It is worthy to note that the placing of fortresses was directly related to the legitimacy of the kingdom. Fortresses were testifying the presence of the kingdom over the landscape. Placing fortresses in the landscape may reflect an expansion of political spheres and directly controlled territories; in fact, it may have played an active role in that process. Furthermore, presence of rock tombs also support this view. These tombs, which are physically carved on a visible surface of the fortress to be on display, could be interpreted as functioning as a symbolic link of the kingdom with the past and as an evidence of its presence and perseverance. These are the implications of a dynamic political landscape projecting the kingdom's hegemony and legitimizing their own positions.

Fortresses as an expression of power, they configure the space accordingly. The reason behind establishing a method of surveillance is to monitor the landscape. The value of surveillance was clearly revealed by visibility analyses. Fortresses provide the sense of power and control over inhabitants or people passing through the area of surveillance. This approach is a simplified representation of the role played in creating a landscape of surveillance and control on agricultural lands. Fortresses were investigated in terms of their locations and then it was clarified whether their positions were strategically suitable for surveillance. As revealed by the analyses, the locations of the fortresses are directly related to the agricultural lands of the kingdom. They are distributed in a way that encircles important plains, such as Phanaroia and Daximonitis. These plains are the agricultural lands that provide the kingdom’s income. Recent studies in Mainland Greece suggest that sporadic defense units in rural areas are built for controlling and protecting the agricultural and industrial labor force (village communities). The agricultural territory was important for the cities and kingdoms, in terms of supplying food. Moreover, the frequent emphasis on the Achaemenid system origins of the fortresses within the Mithradatic Kingdom also reminds us of the workings of the satrapy system. Accordingly, the system that regulates rural administration aims to increase agricultural productivity and income. The relationship between fortresses and agricultural lands in the Mithradatic landscape can suggest that this system was continued.

The information provided by the topographical locations of the fortresses allowed some premises to be offered about their functions. The importance of the fortresses in discourse of the administrative and military policies of the Kingdom, which derived form ancient sources, were evaluated on their topographical locations. The site selections and their mutual relationships with their surroundings suggested a fundamental differentiation in terms of their functions. In this context, the analysis infrastructure offered by GIS made it possible to evaluate the fortresses from different aspects, by allowing us to effectively study the network of relationships that are based on the fortresses. A similar approach was developed by Kolb, and fortresses were manually marked on large scale maps according to their topographical locations, without using any analysis infrastructure, to offer opinions on their functions. This attempt by Kolb has been further developed in my dissertation. In this context, the analyses offered by GIS made it possible to evaluate the fortresses from different aspects, by allowing us to effectively study the network of relationships that are based on the fortresses. In this sense, this can be considered as first study for evaluating the altitude, aspect, slope and rock types of these fortresses to come to conclusions about site selection, relations with water resources and influence on agricultural areas in the archaeology of the Central Black Sea. After this geographical positioning, the relationships among fortresses and between them and their surroundings are explained. These relationships were mostly tested with visibility analysis and they offered a basis for the premises about their functions. The premise in this aspect is about the field of view and the amount of the potential agricultural land that is inside this field. The positions of the fortresses are directly related to the visibility of the agricultural areas, and since the amount of potential agricultural land controlled by a fortress that is inside a narrow passage and one that is located at the edge of a plain cannot be the same, their functions must be different as well. Their control over agricultural lands provided the role of administration as well as defense. Pimolisa, Gazioura and Kamisa fortresses were mentioned as administrative centers in the ancient sources and their analyses support their administrative functions. However, the situation is not always so clear for all the fortresses took place in ancient sources. The capital of the Kingdom, Amaseia, was mentioned as the administrative center by Strabo although analyses suggest that it was mainly built for defensive function. Fortresses are generally located beside narrow passages or at the edge of the wide valleys. Fortresses that are related to wide valleys are overlooking Phanaroia, Chiliocomon and Dazimonitis almost completely, which are fertile plains hosted by these valleys. The fact that these plains provided the agricultural income that was the basis of the Kingdom's economy implied administrative status for the overlooking fortresses.

The most important issue in the relationship among fortresses is whether or not there was communication. The visibility analysis was modified and the possibility of communications between the fortresses by transmitting signals was evaluated. This idea emerged after a single account by Appian on signaling between Cabeira and Boğazkesen during the Third Mithradatic Wars. Thus, although the result of the analysis between these two fortresses was not supporting Appian, it was revealed that almost all of the fortresses inside the Scylax valley and some in the Upper Halys Valley were able to communicate this way. Similarly, the visual interaction between fortresses that are located on the southern and southwestern entrances to the Dazimonitis plain must have allowed them to communicate. Communications between fortresses must have been a significant factor in the protection of agricultural lands and village communities. At this point it might be too assertive to claim that these fortresses constituted a defense system for the whole Kingdom's territory. However, it seems possible to say that they were focused on defending the plains and the village communities in these plains. There is also significant possibility that they constituted a regional defense system, considering potential fortress locations. However, this issue can only be resolved if studies on Pontos increase in number.

We do not have information on the Hellenistic Period road network in the area. However, the widespread opinion is that the Roman road network utilized the existing Hellenistic Period infrastructure. The roads generally followed the topography and they used valley passages that were controlled by the fortresses. Hypothetical communication routes are suggested with the help of analyses, in order to shed light on the roads that the military could follow and on the interaction between fortresses. The routes that armies might have chosen for reaching fortresses for supplies or as assembly points were predicted and evaluated together with historical data. Accordingly, the results indicate possible routes that are used especially between Arhoy and Gazioura and during the march to Paphlagonia through Amaseia. The fact that many of the revealed routes overlap with the Roman road network allows us to conclude that these routes had existed in the Hellenistic Period as well.

I believe that this study fundamentally sheds light onto the question the administration functions of the fortresses. Although the word fortress as a term intrinsically comes with military implications, for the Mithradatic Kingdom which inherited Persian-type administration, the fortress was regarded as an administrative unit. The geography of the kingdom was characterized by agricultural activities and a lack of urbanization The land was dominated by village communities, temples states and fortresses. These fortresses were used to provide protection, regulation and taxation for agricultural lands through the fortress commanders assigned by the king himself.

This thesis suggests further studies. The possible fortress locations identified by Kolb could be potentially discovered. In this sense predictive modeling could be initiated to identify possible fortress locations- undiscovered fortresses on the topography in terms of parameters that I achieved with this study (such as being built on a outcrop, close to the water source, degree of slope, aspect, edge of the plains or being placed in a narrow valley). Improvements into the ancient road network regarding this region will also enlighten the relationship between fortresses and transportation and deeply advance the level of such evaluations.   The system of network identified over plains in this study might also help in the discovery of a defensive network for the whole kingdom upon future identifications of new fortresses.

The settlement data evaluated in this thesis began where Erciyas left off. It was a goal to understand the settlement distribution throughout the kingdom and to determine the relationships between the fortresses and the settlements. It is hoped that the worked outlined in this thesis is continued with additional survey research.

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APPENDIX 1

FORTRESS CATALOGUE

This appendix includes an inventory of the fortresses used in this study. The identification numbers of the fortresses are not sequence since the original database numbers are used. The inventory of the each fortress includes the name of the fortress, name of the province and district, geographical coordinate in longitude-latitude, projection type, occupation periods, size in hectare, topographical properties which obtained GIS analysis (elevation, slope, aspect and TRI values), and the visibility results of the fortresses. Function of the fortresses also defined according to the analysis stated in Chapter 7. A detailed description of each fortresses and photographs are provided at the end of the each sheet.

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20	Cıngırt Kayası	452
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51	Ermelik	526
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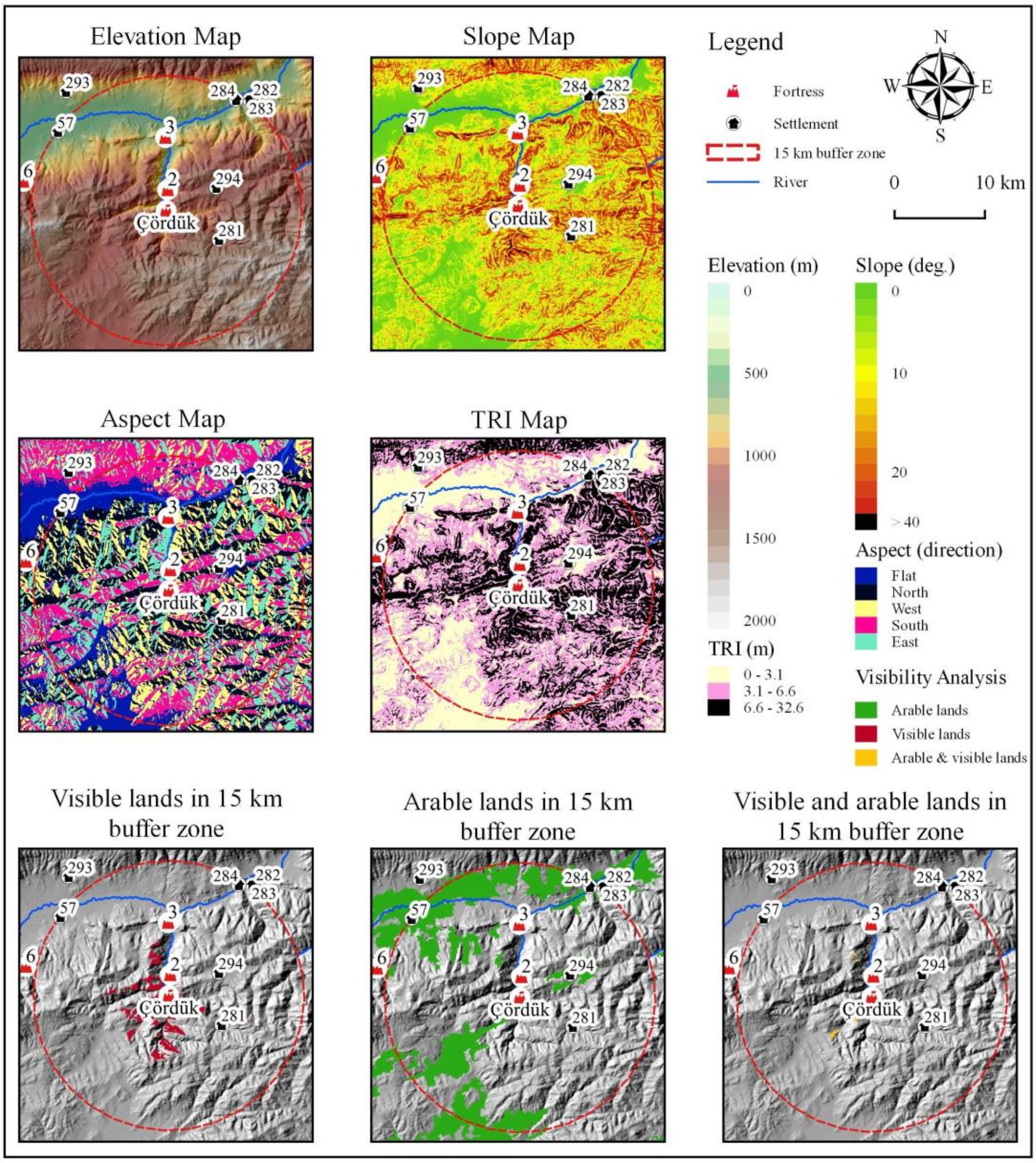
53	Basamaklı Geçit	530
54	Simeri	532
402	Osmaniye	534
403	Katır Mağarası	536

ID:001 - Çördük

Ancient Name(s)	Taulara ?	**Proposed Function**	DEF
Size of Fortress, ha	0.80	**Dating**	HL/BYZ
LocationProjection	UTM WGS84 37N		
Province	Tokat	**Easting, m**	291769
County	Center	**Northing, m**	4457631
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	894 m	**Visible area**	2.4%
Slope	10.7°	**Arable area**	14 %
Aspect	South	**Visible & arable area**	0.1 %
TRI	5.5 m	**Median TRI**	4.8 m

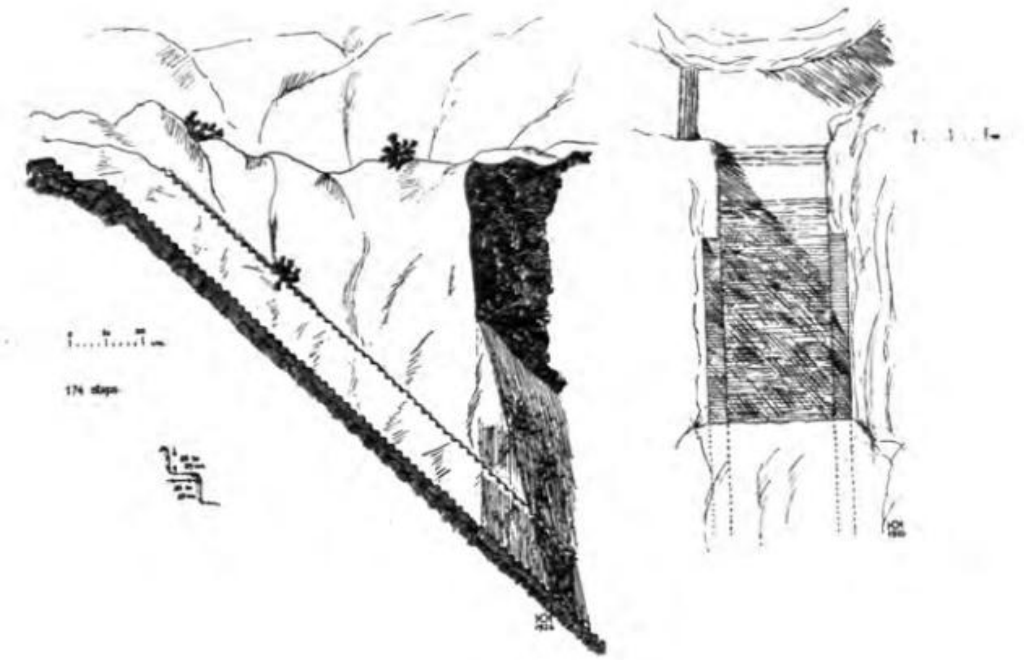


Description

The Çördük fortress is located over a rock-cliff on the north-west direction of the Çördük village on the Tokat-Sivas road. The fortress which was visited during the 2007 survey season, was also referenced in the literature as the Bayramtepe or formerly Horoztepe. It was localized by Olshausen in relation to ancient Taulara which is one of the important administrative fortresses of the Mithradatic Kingdom (Olshausen and Biller, 1984: 54). There are a number of suggestions for the location of Taulara. Reinach claims that it is located on the right bank of Lycus, above the Kündür Bridge from the Roman period, which is 6 miles east of Reşadiye (Reinach, 1890: 140). Wilson on the other hand stated that phonetically, ruins found by von der Osten north of Sivas can be a candidate but these ruins are Roman or Byzantine ruins and also that this is not an appropriate place for Mithradates' fortified treasury, that the most suitable candidate for such a place is Hafik fortress while this fortress is also too far away (Wilson, 1960: 226). Ünal argues that the toponym Tiliura in Hittite texts is synonym with Talaura and Taurla. It used to define a border fortification in historical accounts dated to Mursili II and his son Hattuşili III (Ünal, 2005: 721). The toponyms parts of a name including the suffix of –ura, (like Gaziura, Talaura) are explained as of Hattic origin (Ünal, 2005: 726).

von der Osten visited the fortress in the 1920's and he drew a section of its monumental rock-cut tunnel (1929:132). The northern side of the fortress is a cliff, which is not accessible, and no fortification structures were observed on that side. On the southern side of the fortress, a fortification wall is still standing, dating back to the Byzantine period, however it is likely that this wall was also built on the southern side during the Hellenistic period. The wall is approximately 80 meters long and it creates two arches on the southern side of the rock-cliff. This wall which can be thought to be the entrance of the fortress is not continuing on the other parts instead it ends with a rock cut stairs on the eastern side. Only the first 33 steps of this staircase can be seen and the rest is under the debris (Erciyas & Sökmen, 2009: 292). von der Osten had recorded 77 steps for this tunnel during his visit to the site (1929: 133).

The monumental rock-cut tunnel is located on the North slope of the fortress. This tunnel consists of a main stairs in the middle, two narrower stairs on its both sides and these narrower stairs are going up to the entrance of rock cut vault. The total number of steps of the main staircase that can currently be observed is 131. In his visit von der Osten identified 174 steps (von der Osten, 1929: 132).



Section plan of the rock-cut tunnel drawn by von der Osten (1929: 132).

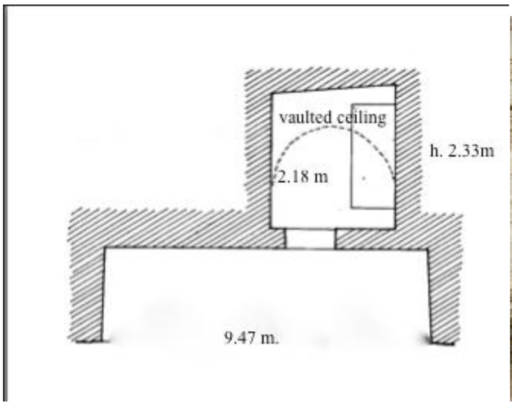
Monumental Rock-cut tunnel

An inscription is found on the right-side of the wall close to the ending of the stairs. Part of the two lined inscription can hardly be read because of the physical condition of stairs and lack of light (Erciyas & Sökmen, 2009: 292).

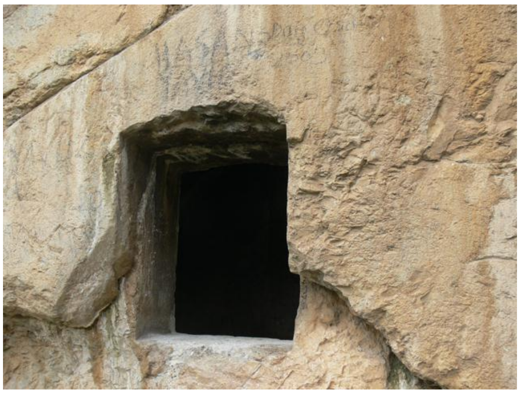
There is also the remain of a rectangular structure on the northern side of the fortress. The holes on the northern wall of structure shows that the building is supposed to be at least two-storey high.

Rectangular Building and hole for wooden construction

Many pottery sherds that can be dated from the Hellenistic to Ottoman period were distributed across the hill. There are two rock-cut tombs on the eastern part of the fortress. No column orders and reliefs in both tombs are seen. Tombs were visited by von der Osten in 1926 and their layout plans were drawn (von der Osten, 1929: 136-7). The tomb located on west side has wider entrance. Measurement of the window opens to tomb room is 107 x 90 cm. Measurement of the room is 218 x 254 cm. Room had built with vaulted ceiling (Erciyas and Sökmen, 2009: 290). Second tomb is located next to the other tomb. The entrance of the tomb is 100 meters in width and 120 meters in height.



Plan of the 1st tomb

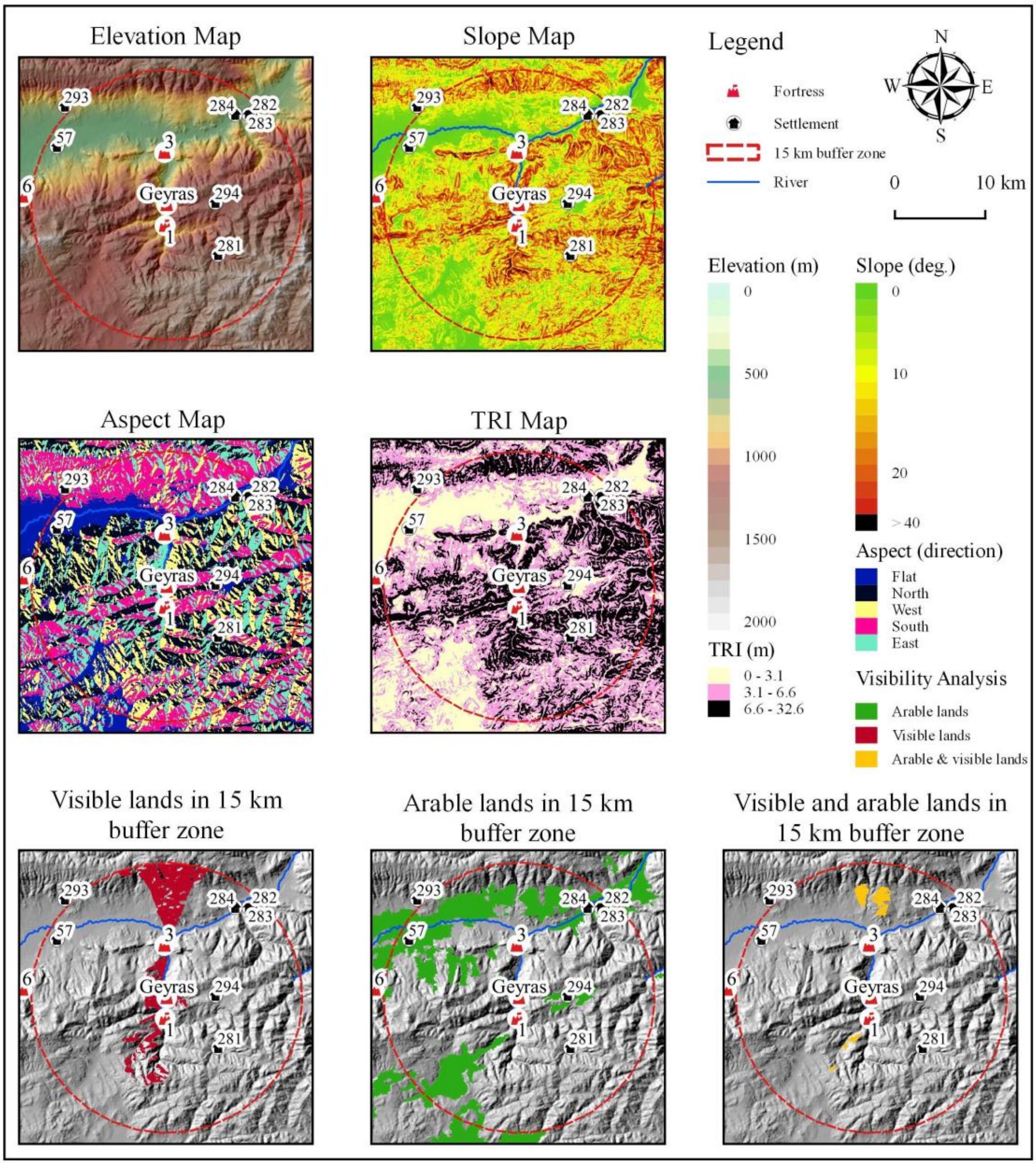


Entrance of the second tomb

If correctly localized, Çördük Fortress as Taulara was an important coin minting fortress during Mithridatids. After the fall of Mithridatids it lost its importance. Considering its autonomous nature, stemming from the privilege of minting coin, it could be one of the but the area of the field that the fortress controls imply that its defensive functions outweighs its administrative duty. The fortress occupied an important strategic position as it stood in the mountain pass that provided access to the Dazimonitis plain, therefore, it also controls the road comes from Sebasteia. Defensive function comes forward because of this location. Olshausen's Taulara association can be taken into acount within this respect. Ünal's proposition of Taulara Hafik fortress can be taken into account because of Hafik fortress' predominant administrative function.

ID:002- Geyras

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.30	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	291943
County	Center	**Northing, m**	4459926
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	891m	**Visible area**	5.6 %
Slope	13,4°	**Arable area**	13 %
Aspect	North	**Visible & arable area**	0.8 %
TRI	6.1 m	**Median TRI**	5.9 m



Description

The name of the Geyras Fortress can be found in the list prepared by H. von Gall who brought together many rock cut tunnels of Paphlagonia and Pontus. After reporting by von Gall, Biller & Olshausen visited the fortress and provided brief notes about tunnel and a cistern located on the northern side of the fortress.

Entrance of the tunnel

The Geyraz Fortress is located on top of a cliff, on the north-west of the Tokat-Sivas highway. It is a typical Hellenistic fortress with a rock cut tunnel. The visible length of the steps through the vaulted tunnel is around 7m long, the tunnel is filled with earth and debris and there are 20 visible steps (Erciyas and Sökmen 2010: 358).

Rock-cut stepped tunnel

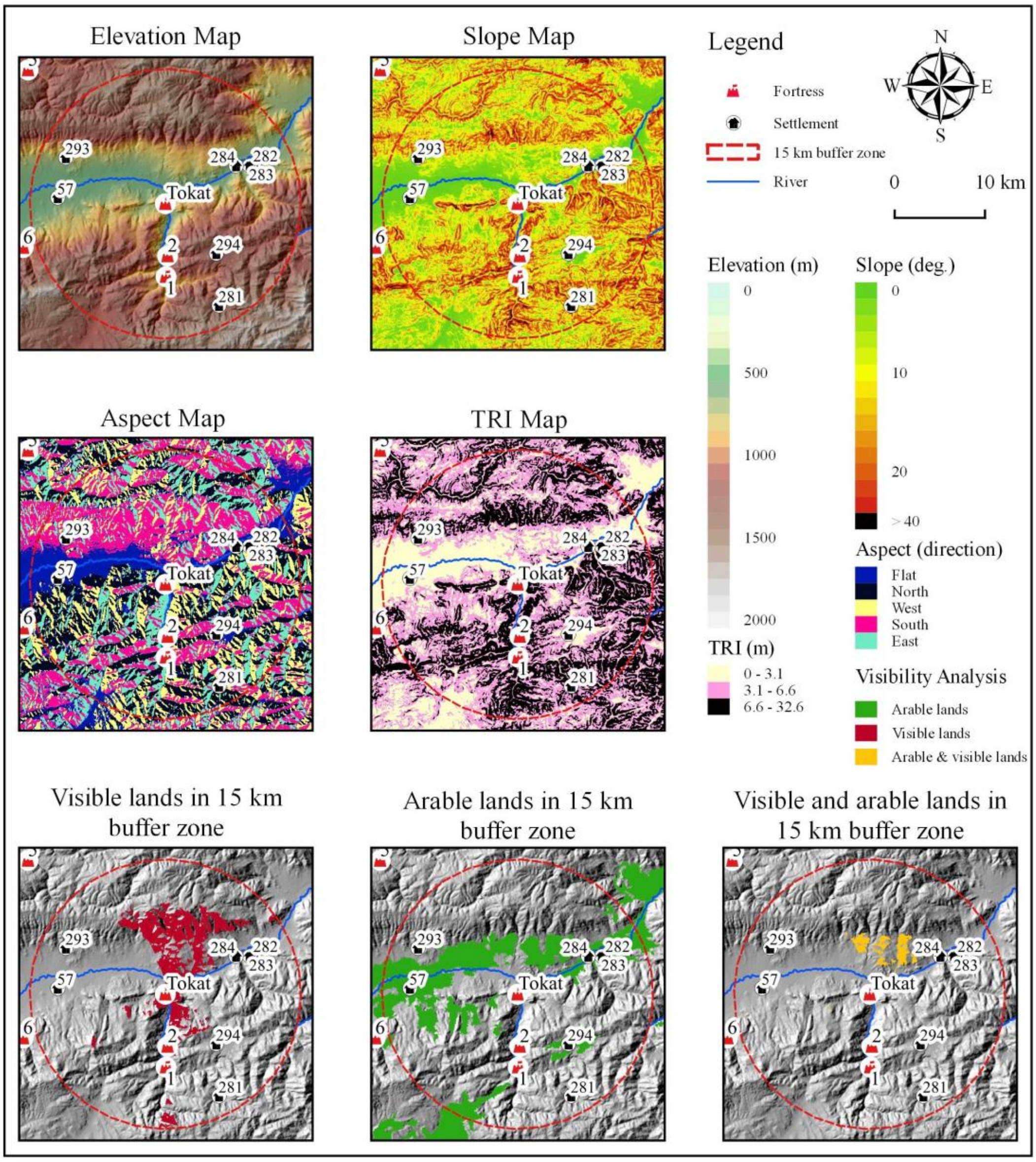
It was observed that the landfill from the end of the staircase is thrown out of the destructed walls during illegal excavations. A typical Mithradatic coin of Amisus with Ares on the obverse and sword in sheath on the reverse was found in this landfill (Erciyas and Sökmen, 2010: 359)

South part of the fortress, there is trace of two roomed building. The remains of the walls of a building can be observed from the surface at the south part of the fortress. This building possibly used as barracks for military personal.

Due to its location on the entrance of narrow valley that leads to Dazimonitis, Geyras fortress undeniably has a defensive role. Geyras is located between Tokat and Çördük however it is only connected with Tokat fortress in terms of line of sight. It has no such a relationship with Çördük fortress. But in terms of signalization, Çördük fortress might have sent smoke-signals to Geyras fortress. It monitors the road from Sebasteia to the Dazimonitis Plain.[1]

[1] Viewshed analysis reveals that Geyras Fortress can be essentially used for signaling station.

ID:003 - Tokat			
Ancient Name(s)	Dazimon	**Proposed Function**	DEF
Size of Fortress, ha	2.7	**Dating**	HL/BYZ/SEL/OTT
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	291697
County	Center	**Northing, m**	4465725
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	659 m	**Visible area**	6.5 %
Slope	9.4°	**Arable area**	14 %
Aspect	South	**Visible & arable area**	0.1 %
TRI	6.5 m	**Median TRI**	5.4 m



Description

Dazimon is not mentioned by any ancient author by name. We know of its existence due to the plain (Dazimonitis) by which its name was given. The fortress is recognized with Tokat according to Ramsay (1890: 328).[2] The Tokat Fortress is situated over the top of a massive rock cliff inside the modern city center. This fortress is overlooking to the fertile plains of Dazimonitis (Kazova) on the west side. The fortress that was built during the Mithradatic kingdom increased its importance during the Byzantine and Ottoman periods (Olshausen and Biller, 1984: 59). As the temple-state of Comana had lost its importance following the late Roman period, its population can be assumed to have migrated to Dazimon. In Early Christianity, Dazimon is also mentioned as a town or a district of Pontus visited by Basil. It was not a bishopric: it must have been subjected to the Bishop of Comana (Erciyas and Sökmen, 2010: 124). It was called *Aplekta* during the Byzantine period and it served as an important gathering point for the armies of the Empire before commencing an expedition to the East[3] (Foss and Winfield, 1986: 19). In the Byzantine wars it must have become far more important than Comana (Ramsay 1890: 330). All the structures that can be observed from the surface -except the rock-cut tunnel which are characteristic to the Hellenistic period and rock cut tomb on the south face of the outcrop are dated to the Byzantine, Seljuks and the Ottoman periods. Bryer suggested that the tomb at Dazimon makes the fortress as important as Comana and its importance dissapeared in Roman times with *Pax Romana* (Bryer, 1985: 13).

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[2]H. Gregoire disagrees about this localization. According to him, Dazmana (Dadasa) on the west direction near Turhal, is a better candidate (Gregoire, 1935: 760-3).

[3]In the year of 860 the Emperor Michael led an army against the Saracens, encamped in an open grassy plain Cellarion in the district called Dazimon (Ramsay 1890: 329).

Rock Cut Tunnel on the North side and Rock Cut Tomb on South facade of the fortress

The fortification wall surrounding the rock cliff was continuously reconstructed and used from the Byzantine period to the Ottoman period. Few reused ashlar masonry can be hardly seen on the fortification wall. With a restoration project conducted 7 years ago fortification wall has lost most of its information with the refurbishment. Rescue excavation, as being a part of an ongoing restoration project which is held by Tokat Museum, has started to shed light on late Byzantine and Early Seljuks and Ottoman periods. Pithos for storage purposes, terracotta oven remains and great number of typical Byzantine decorated glazed table ware sherds are among the first evidence.

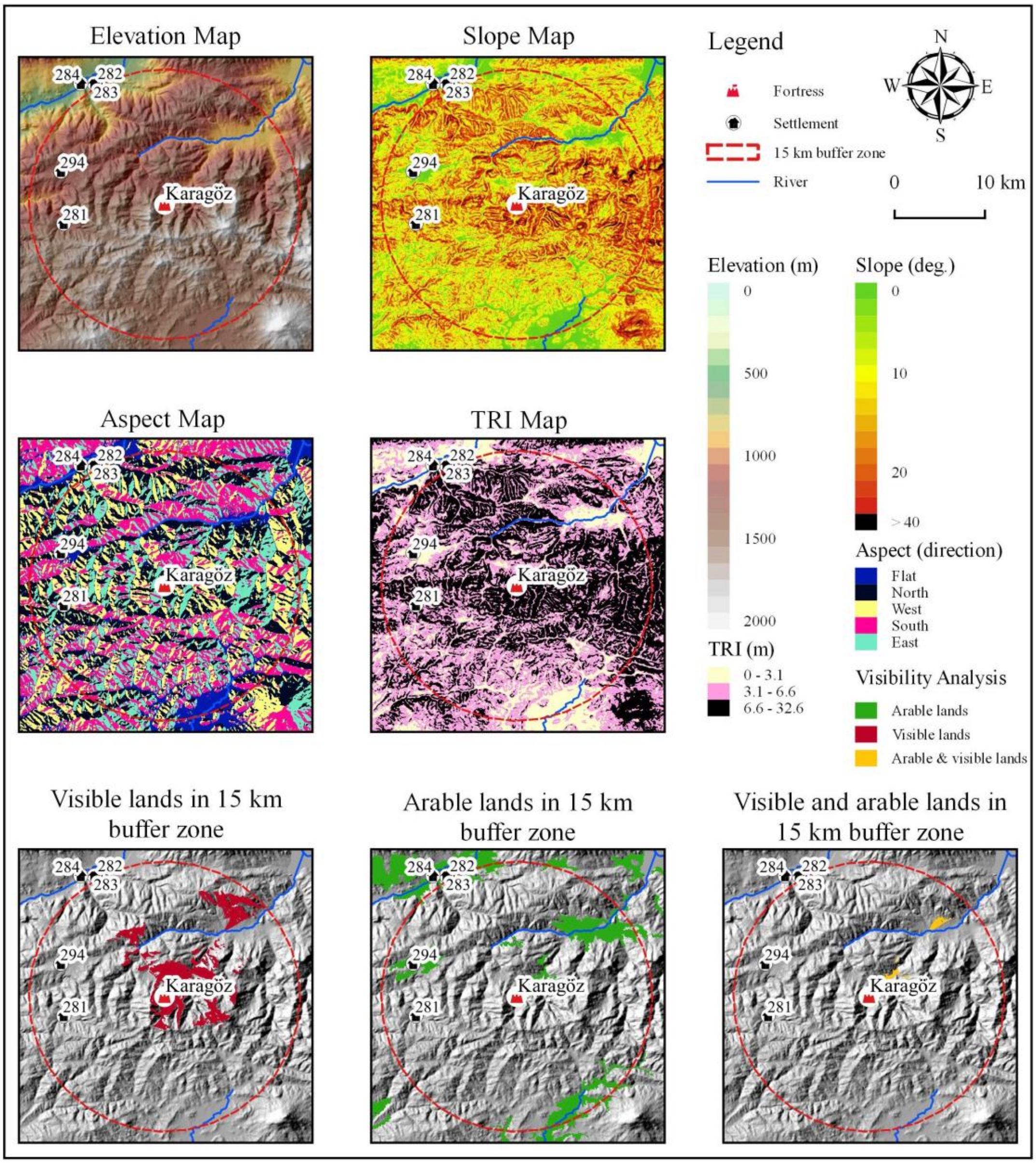
South side of the outcrop and extension of the wall

It wouldn't be wrong to assume that there was once a settlement on the flank of the outcrop. Presence of the old settlement, which is now beneath the modern city, can possibly be supported with few architectural remains survived in and between the streets of the old neighborhood around the fortress.

Due to its specific location, it can easily monitor both the road from Sebasteia and the road from Zela to Comana. Located in a narrow neck at the entrance of the Dazimonitis plain, Dazimon keeps only a restricted agricultural land under its control. Primary function of the fortress is to monitor the entrance of the valley

ID:004 - Karagöz

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	5	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	308816
County	Çat	**Northing, m**	4456541
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1398 m	**Visible area**	5.4 %
Slope	10.4°	**Arable area**	5.4 %
Aspect	North	**Visible & arable area**	0.3 %
TRI	5.5 m	**Median TRI**	6.2 m



Description

The Karagoz fortress is located on the southeast of Tokat near the town of Çat. Fortification wall dated back to the Byzantine period.

Karagöz fortress (photo by B. Erciyas)

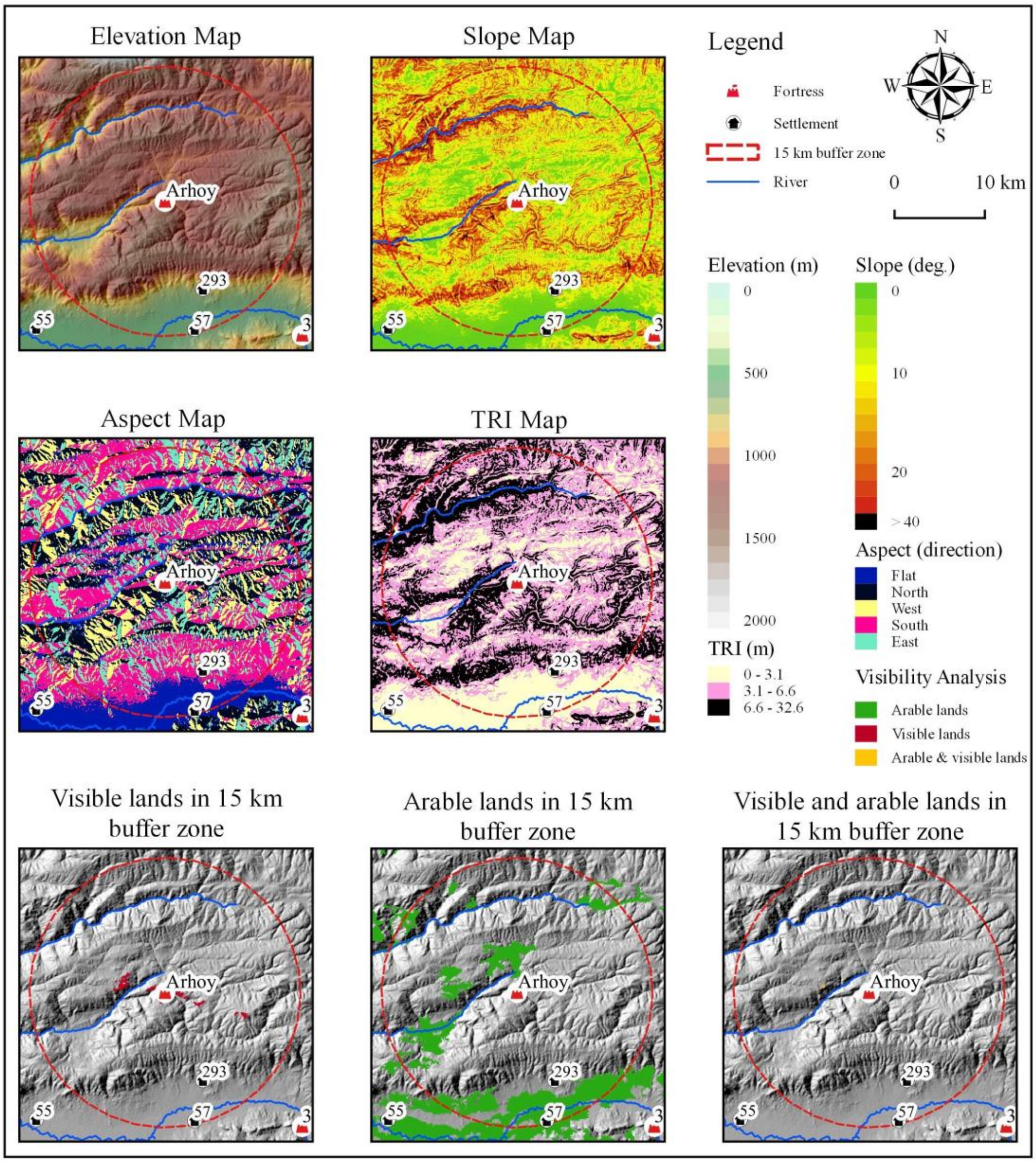
There is a rectangular building on the south part of the hill which can be regarded as a watchtower. A rock cut tunnel is located on the northwest direction, have 23 steps with the width of 4 meters can be found on the 5 meters west side of this watch-tower. The visible length of the staircase into the vaulted tunnel is of 8 meters long. The ceiling was collapsed into the tunnel and the entrance of the tunnel seems to have been severely destroyed by illegal excavations (Erciyas and Sökmen, 2009: 293).

Rock-cut tunnel entrance (photo by B. Erciyas)

A fortification wall surrounds the entire rock-cliff (approx. 350 meters) supported by bastions, one of the them with 4.50 meters in width and 4.70 meters in length. Pottery sherds that collected represent periods from Hellenistic to Ottoman.

There have been no researchers or travelers who made comments about the Karagöz fortress. Its location is relatively remote from the any known road systems. It was topographically built on a commanding point in terms of views and control of the passes, based on its location and arable land percentage in its visibility Karagöz can be used for defensive purpose.

ID:005 - Arhoy			
Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.25	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	276486
County	Center	**Northing, m**	4480575
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1044 m	**Visible area**	0.6 %
Slope	22.5°	**Arable area**	10 %
Aspect	South	**Visible & arable area**	0.01 %
TRI	9.6 m	**Median TRI**	4.9 m



Description

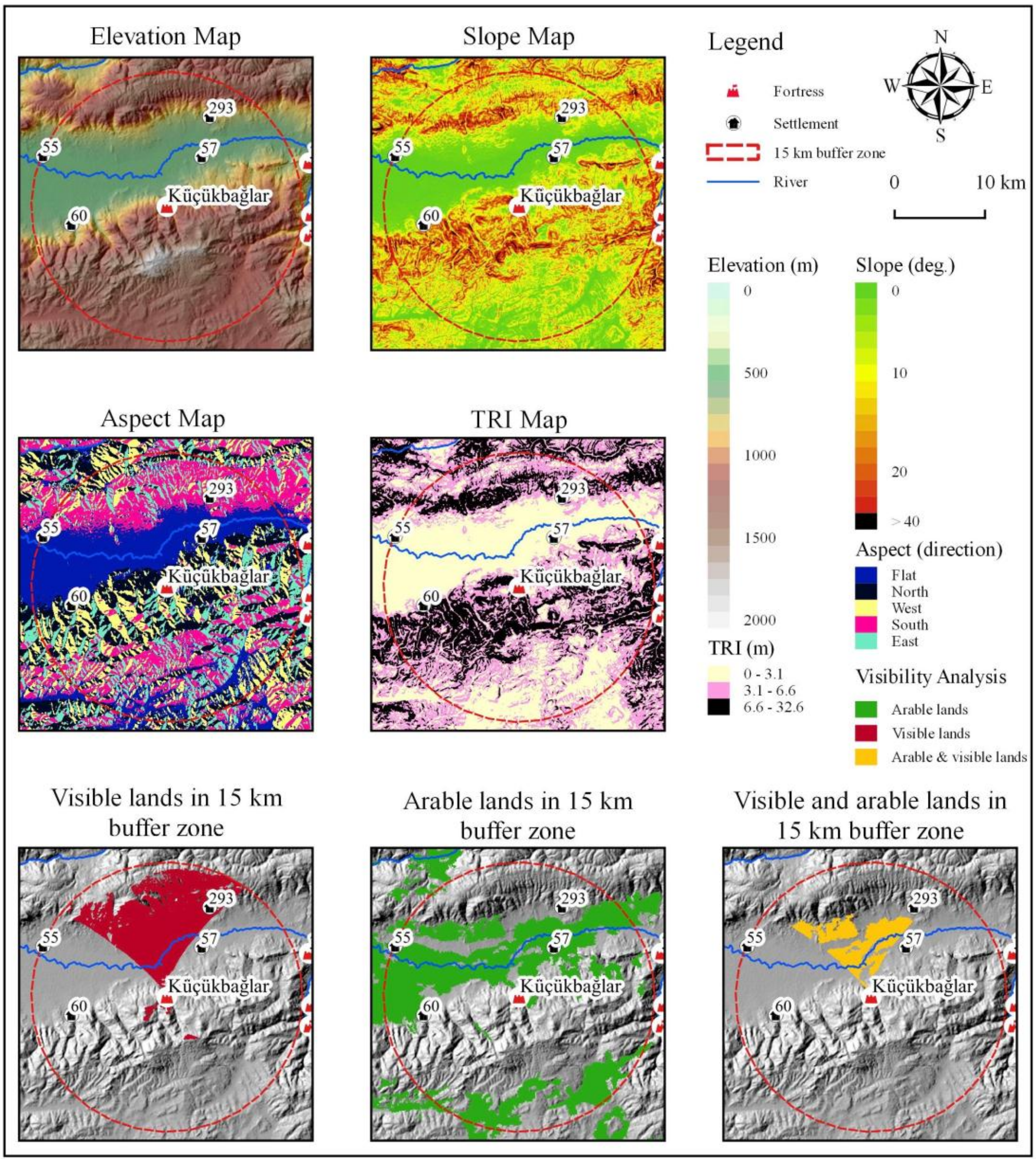
Located near Yeşilalan village 22 km northeast of Turhal, the fortress is very isolated. In the fortress built on the rocky cliff, there is a rock-cut tunnel that goes down to the river running alongside the cliff. Jerphanion and von Gall recorded this fortress (de Jerphanion, 1928: 35; von Gall, 1967: 514). Olshausen and Biller thought that based on Dio Cassius’s account, Dadasa where the Roman army’s equipment stored could be close to the Gazioura (1984: 64). They followed the previous locatization for Dadasa as Arhoy proposed by de Jerphanion in their map. Rennel located this fortress on the borders of the district of Gazioura. It supported Olshausen’s idea (1831: 127). It is located 300 meters lower than Yeşilalan village, and covers approximately 0.25 hectares. Localization of the Dadasa with Arhoy seems reasonable when considering the Dio Cassiusaccount (XXXVI.10. 1-2.) Roman troops under Triarius command had camped Gazioura. Meanwhile, part of Mithradates' army took action to attack equipment storage of the Roman army instead of attacking Gazioura. Therefore Olshausen's proposition is plausible, as Arhoy fortress seems to be the only secluded place inside the valley for the storage of the ammunition.

It basically controls the valley it is located in surrounded by forest the fortress is situated on a steep landscape. The valley it keeps under control is rather narrow. According to the analyses it control the valley to which it only associated. Thus it only has an obvious defensive function.

Arhoy from north

ID:006 - Küçükbağlar

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.60	**Dating**	IA/HL
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	275942
County	Center	**Northing, m**	4460860
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	882 m	**Visible area**	12.6 %
Slope	10.4°	**Arable area**	23 %
Aspect	North	**Visible & arable area**	3.9 %
TRI	6.6 m	**Median TRI**	3.7 m



Description

Kaletepe is located in the southern slope of the Küçükbağlar village, overlooking the Dazimonitis. It consists of a rocky outcrop and flat area behind.

Kaletepe from northeast direction

Only on the northern side of the fortress, fortification wall with two construction phases dated to Hellenistic period that can be traced for 4 meters that sits on the bedrock. At the first phase, wall was constructed with ashlar blocks (stone dimensions: 60x27 cm), and at the second phase, which covers the first one, was built small size rounded stones.

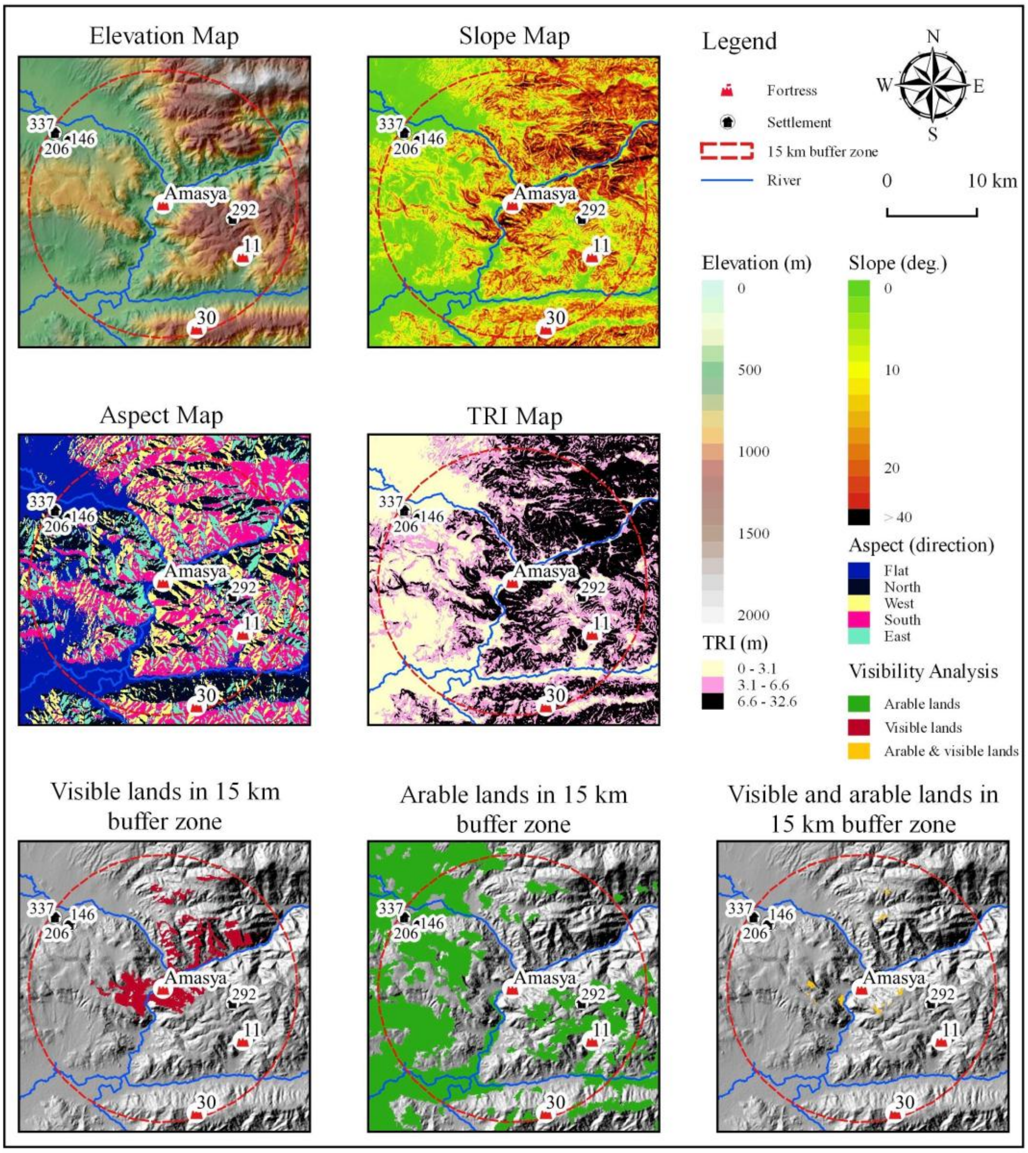
Fortification walls

What seemingly a vaulted structure has been destroyed by illegal excavations which was found on the south. Despite the destruction of the illegal excavation, pottery sherds that can be dated to the Iron Age and the Hellenistic Period were found (Erciyas, 2012: 167). Moreover, a cavern that looks like a tunnel entrance is filled up so that it is not possible to figure out whether it is a tunnel or not. It was found on the southern side of the flat area (Erciyas & Sökmen, 2010: 358).

The fortress is located on a surveillance point to the Dazimonitis plain, monitoring the road from Amaseia and then leads to Tokat and Comana through the plain. According to the analysis, its vibility covers large amount of agricultural lands of Dazimonitis, from this point of view, Küçükbağlar can also performed administrative purpose.

Dazimonitis plain from Kaletepe

ID:007 - Amaseia			
Ancient Name(s)	Amaseia	**Proposed Function**	DEF
Size of Fortress, ha	5.2	**Dating**	HL/ROM/BYZ/SEL/ OTT
Location		**Projection**	UTM WGS84 36N
Province	Amasya	**Easting, m**	739044
County	Center	**Northing, m**	4504147
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	612 m	**Visible area**	5.6 %
Slope	9.9°	**Arable area**	23 %
Aspect	North	**Visible & arable area**	0.3 %
TRI	7.4 m	**Median TRI**	5.0 m



Description

Strabo describes his hometown Amaseia in these words:

"My native town is situated in a deep and large valley through which flows the river Iris. It has been provided in a surprising manner, by art and nature, for answering the purpose both of a city and fortress. For there is a lofty and perpendicular rock with overhangs the river, having on one side a wall erected close to the bank where the town has been built, while on the other it runs up on either hand summits of the hill. These two are connected with each other, and well fortified with towers within this peribolus (or enclosure) are the royal residence and the tombs of the kings. But the summits have on each side a very narrow neck of land, about five or six stadia in height, as you ascend from the river and suburbs. From this ridge to the summits there remains another sharp ascent, about a stadium in length, which it would be impossible to force. And there a watercourse is carried up underground, two tube like channels[4] having been cut, one towards the river and the other towards the neck. Two bridges are thrown over the river, the one from the town to the suburb, the other from the suburb to the outer country, for the mountain which overhangs the rock terminates at the point where this bridge is placed" (XII.3.39).

Amaseia Fortress from southwest (photo by PRD Production)

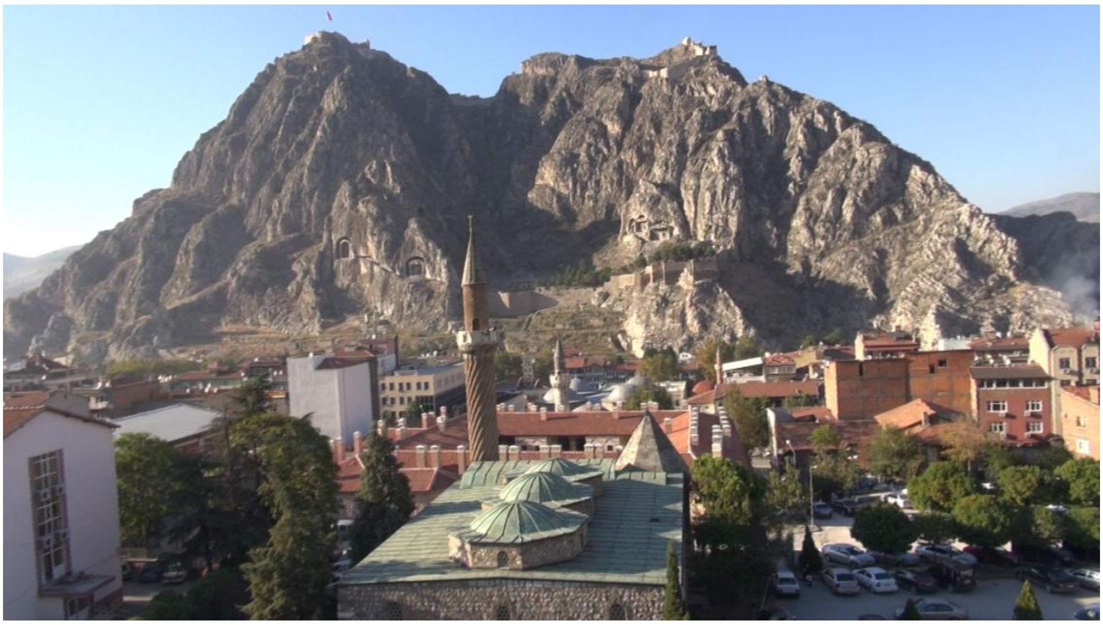
The outcrop on which the fortress sits, has a dominating position on the narrow passage now modern Amasya located. Amaseia had been the capital of the Kingdom

[4]Strabo named these tunnels as *συριγγες*: pipe

from 281 BCE then Pharnaces I moved to capital to Sinope after having captured in 183 BCE (Strabo, XII. 3.39). During the Third Mithradatic war, the fortress was captured by Lucullus in 70 BCE and by Pompey's reorganization its territory was extended in such a way to transform the Amaseia to Roman city (Strabo, XII. 3.39).

Archaeological remains of the Mithradatids in Amaseia situated on the fortress; rock-cut tombs belonging to five kings Mithradates I, Ariobarzanes, Mithradates II, Mithradates III and Pharnaces I, weakly observable Hellenistic fortification and rock-cut tunnel at the top of the fortress. Strabo, calls the fortress as μνήματα βασίλεια: tombs of the kings, in the area of *basileia*. Detailed documentation of the tombs was executed by R. Fleischer and his team in 2002. He also provides comparative critique for each tomb (Fleischer, 2009: 115).

Fortification walls and towers were standing are dated to the Byzantine and Ottoman periods. Byzantine wall ran along the north bank of the Iris (Foss and Winfield, 1986: 16). Hellenistic wall remains can be tracked on the northern and eastern ridges of the outcrop and wall remains seen on the east can be followed along the slope until the river.



General view of Amaseia fortress (photo by PRD Production)

Hamilton stated that the tunnel was built to be able to access the water (Hamilton, 1842: 368). Moreover, having had similar features, these fortresses with these tunnels are thought to have been contstructed by Mithridatic Kings (Hamilton, 1842:

369).There are two tunnels inside the fortress. The bigger one of these is called Cilanbolu. With a gradient of approximately 35 degrees, the entrance of the tunnel is arched (H. 6.00 and W. 5.45 meters) and conjuncted with a Hellenistic wall. This wall continues both on left and right sides of the tunnel for 30 meters inwards. Towards the middle of the tunnel there is a 10 meters long and 3 meters high wall built with bossage stones. This wall was thought to have been built in order to patch up a hole which was initially created by the workmen to discharge the debris generated during construction (Doğanbaş, 2010: 68). The tunnel is approximately 174 meters long and has 356 steps in total. A reservoir for collecting water was revealed at the far end of the tunnel. This reservoir is 6.9 meters long in the north-south direction and it is 2.75 meters deep (Doğanbaş, 2010: 69).

Rock-cut tunnel

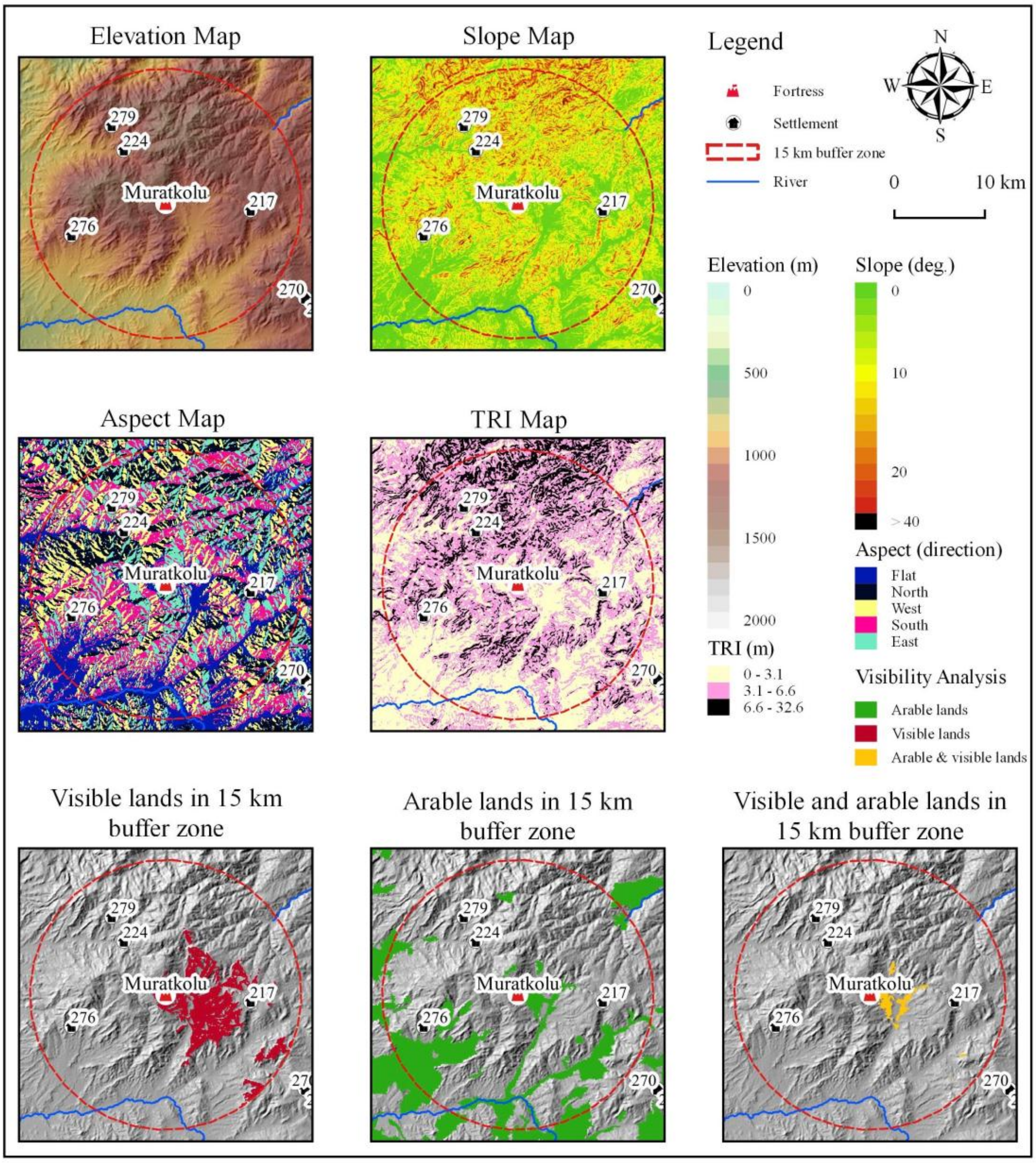
There is also get information on these tunnels from Ottoman period resources. Author of history of Amasya Abdi-zade Huseyin Hüsameddin states that these tunnels are built as cistern and water from Karaman Mountain is collected here (Abdi-zade, 1986: 57).

As a result of excavation conducted in 2007, the bossage Hellenistic wall was found approximately 9 meters deep at the tower section of the fortress. Furthermore, in this section a circular water cistern was revealed from the same period (Doğanbaş, 2009: 19). Excavations at the plain area on the south east of the entrance, revealed mostly Byzantine and Ottoman structures (Doğanbaş, 2009: 20).[5] Later, during excavations in 2009-2010, Ottoman occupation of the fortress was started to be brought into light along with Roman period findings (Dönmez et. al, 2012: 270).

Due to fact that it is the capital, cemetery and a place where coins are minted Amaseia fortress comes forward as an administrative center. But it is a defense fortress if only its location is taken into account. Analyses produced outcomes toward this direction because the fortress protects the narrow valley which it is located and agricultural lands are scarce.

[5] The most dominant of these spaces is kitchen structures. Moreover, the high number of kitchen vessels, lamps and arrow heads were significant.

ID:008 - Muratkolu			
Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	2.3	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	625384
County	Sungurlu	**Northing, m**	4459951
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1184 m	**Visible area**	6.5 %
Slope	6.5°	**Arable area**	11 %
Aspect	South	**Visible & arable area**	0.7 %
TRI	3.0 m	**Median TRI**	3.7 m



Description

This fortress is built on an outcrop that is located 1 km west of Muratkolu village of Sungurlu in Çorum. The fortress has been severely damaged by illegal excavations. There is a rock cut tomb on the face of the fortress towards Demirşeyh village. There used to be animal figures and a bull carved on the pediment of the entrance of the tomb, until this tomb room was damaged by illegal excavations (similar iconography with İskilip). The surveyors that recorded an altar on the west side of the fortress, bull's head relief and girland pieces of the altar dated to Roman period was broken and damaged. The stele of Theodoros that was found around the fortress and brought to the village is dated to 3rd century AD (Sipahi, 2003: 276). During my visit to the fortress I observed that the slopes have been deeply excavated by machinery and revealed walls were demolished. There is pottery sherds date to Hellenistic and Roman Periods. Sherds are spread across an area of about 6 hectares.

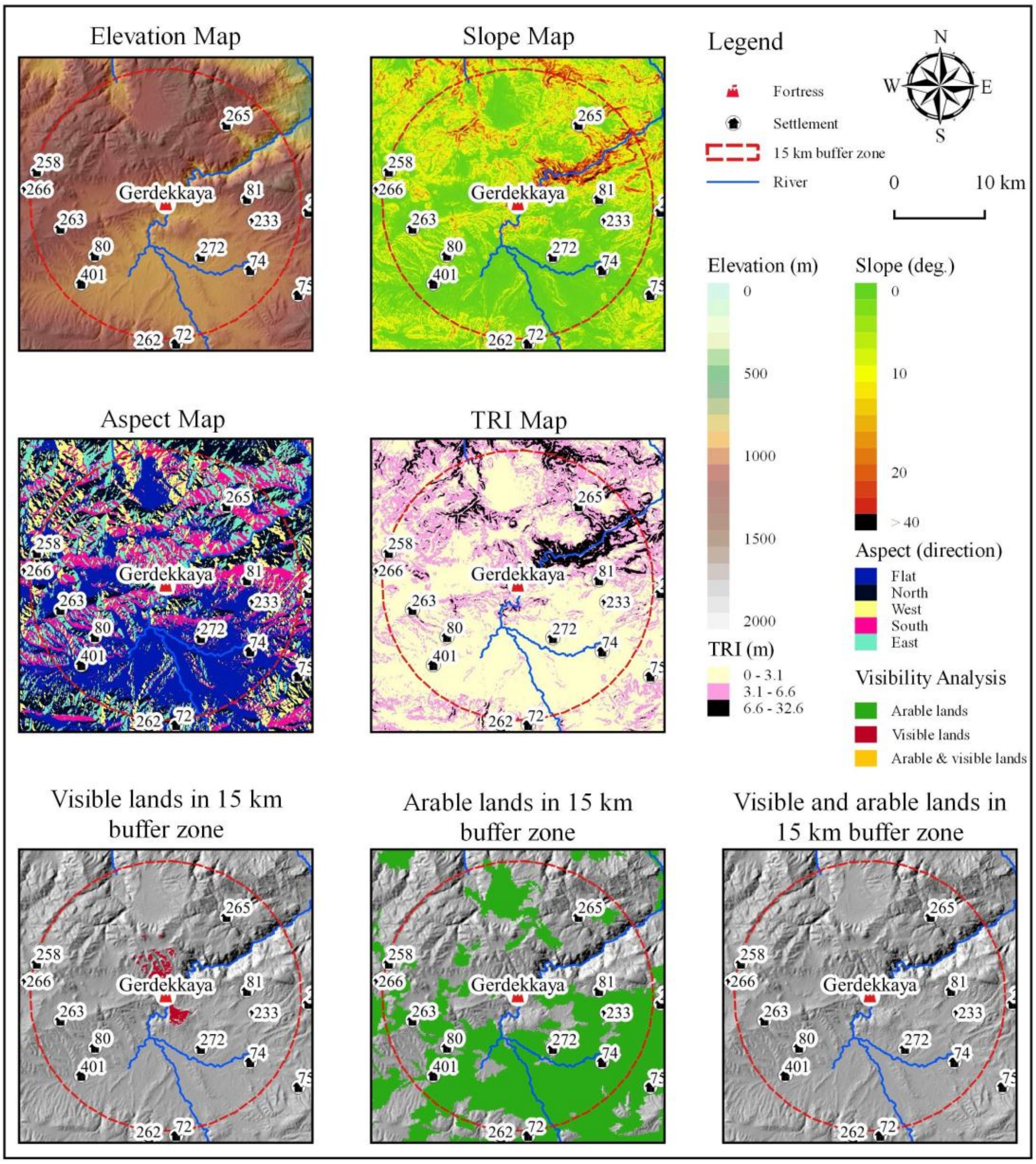
If we assume that there was a settlement at the foothills of the fortress, we can suggest it provided security and control to the settlement and surroundings and visibility of the fortress reaches the most part of the plain underlines the probable administrative role.

The Outcrop on which the fortress sits (Çorum Museum Archive)

Rock-cut tomb east side of the outcrop (Çorum Museum Archive)

A view from the fortress (Çorum Museum Archive)

ID:009 - Gerdekkaya			
Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	0.9	**Dating**	IA/HL/LR
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	659798
County	Alaca	**Northing, m**	4456060
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	897 m	**Visible area**	1.6 %
Slope	12.7°	**Arable area**	34 %
Aspect	West	**Visible & arable area**	0.04 %
TRI	6.6 m	**Median TRI**	2.7 m



Description

Gerdekkaya is located 1.5 km. south of Değirmenönü village of Alaca in Çorum province. The area is surrounded by Büyüköz River on the west, a rocky hill on the north and plains on the south. Rock-cut tunnel (H. 1.30 and W. 2.10 meters) that leads to Büyüköz River badly carved and its steps were eroded. On the top of the outcrop, T shape rock-cut structure with 2.10 m. high and 70 cm. weight was possibly used for a wooden installation of the a building. The outcrop that dominates the flat areas also houses two rock tombs. The one on the west is severely damaged by illegal excavations. The one on the east has also been damaged by illegal excavations but is better preserved. Tombs were investigated thoroughly by Dökü in his dissertation. He made comparison with İskilip tombs by means of doric column façade which commonly seen along Halys curve in Hellenistic Period. (Dökü, 2008: Catalog Number 19-20). Hamilton in 1836 drew a sketch the rock cut tomb in here (1842: 452). Gerdekkaya fortress can be considered with a settlement. There are some building remains and pieces of roof tiles on the slope of the outcrop.

Tomb on the west side

Fortress is located on the border of the Mithradatic Kingdom and Galatia. Ancient sourcesindicate that Mithradates VI established a fortress called Mithradation in the Hellenistic period, in order to control this area after he conquered the Galatia region (Strabo, XII.5.1; Magie 1950: 198). Strobel states that the south end of the Kingdom reaches the area that includes Gerdekkaya. It must have been one of the border forts found along this border (Strobel 1997:146-48). He associates Gerdekkaya with Mithradation (Strobel 1997: 142-48; Strabo 15.5.2).[6]

A General View of Gerdekkaya

However this suggestion needs to be proven with archaeological studies. When Mithradates VI lost his battle against the Romans, Mithridation was given to Galatian ruler Brogitarus between 65 and 64 BCEE (Strabo, XII.5.2). After this period Gerdekkaya must have been included in the Galatian borders. Anderson proposed that the Kerkenes could be the Mithradation, but studies conducted by Summers

[6] Anderson states that the road that comes from Alaca goes towards Basilica Therma and Caesaria. Anderson states that Mithridation which is an important phrourion is located on this road (Anderson, 1903: 28).

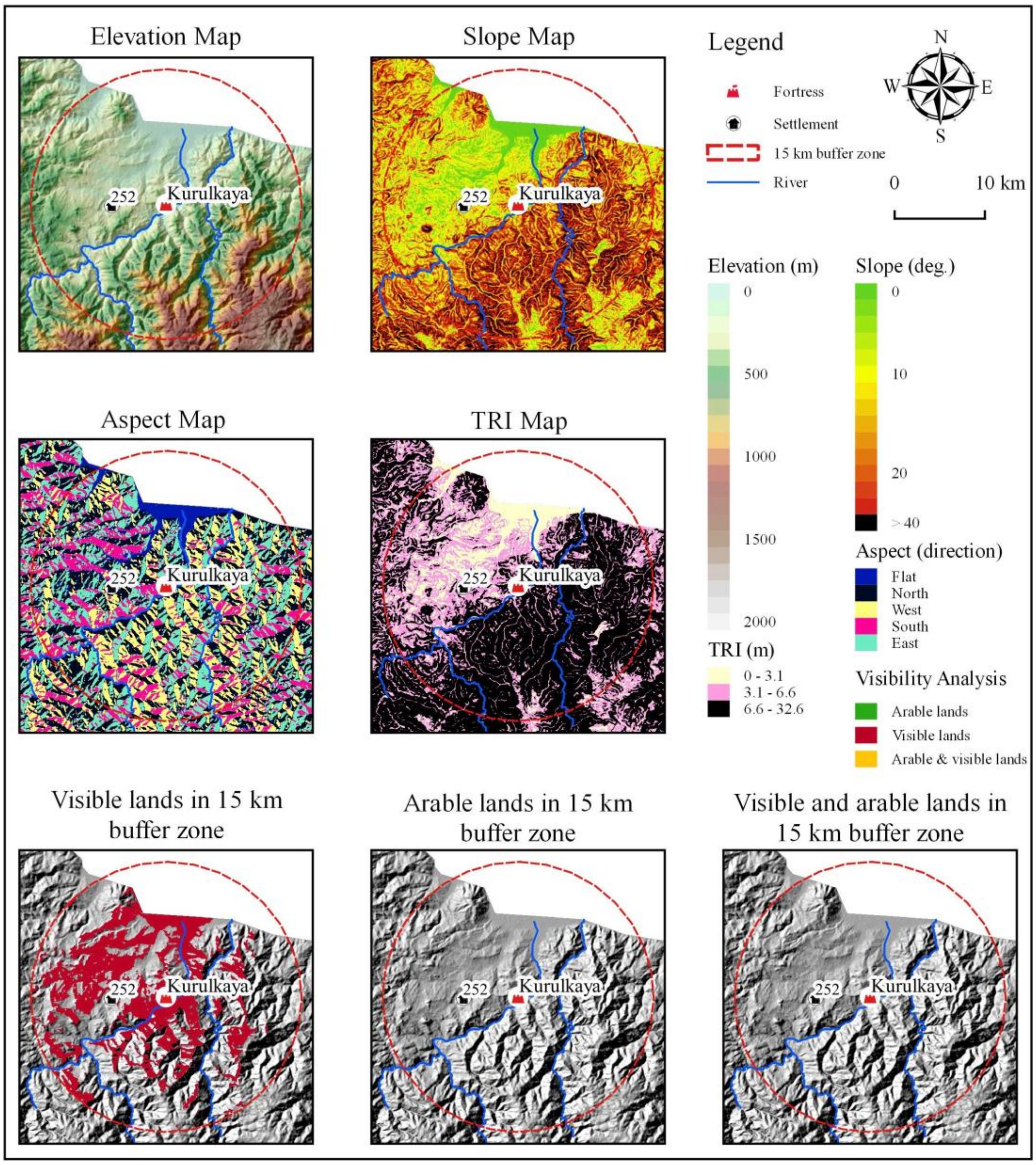
indicates that the Hellenistic occupation in Kerkenes limited with the area of Kiremitlik for a short period time. Summers underlines that the Kerkenes situated very far from the eastern border of Galatians (Summers, 2001: 51). Pottery assemblages indicate that the site was occupied Iron Age to Late Antiquity. Hellenistic pottery sherds densely scattered on the east slope of the outcrop.

Rock-cut tunnel on the North slope of the fortress

Based on its architectural features such as rock-cut tombs and existence of the settlement, Gerdekkaya should have administrative function. It gazes the plain where Büyüköz River waters.

ID:010 - Kurulkaya

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.8	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Ordu	**Easting, m**	408647
County	Altınordu	**Northing, m**	4528282
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	536 m	**Visible area**	18.6 %
Slope	10.4°	**Arable area**	0.0 %
Aspect	West	**Visible & arable area**	0.10%
TRI	6.0 m	**Median TRI**	7.8 m



Description

Kurulkayası is one of the excavated fortresses in the study region. Findings from Kurul Kayais particularly impressive because the fortress had remained undisturbed since it was abandoned at the end of the Hellenistic Period.[7] The fortification wall surrounding the upper parts of the fortress measured to be 3 meters with the preserved mud-brick structure occurring at some locations (Şenyurt and Akçay, 2016: 227).

An Arial View form Kurul Kayası (Kurulkayası Excavation Archive)

The rocky terrain is seen to be utilised as terraced and the outcrop is surrounded by two separate wall of inner and outer fortification. Unearthed storage areas, plenitude of amphorae, plenty of arrowheads and oil lamps underlines the military function of the fortress. A moulded bowl from the workshop of Philon in Ephesos points at 166-69 BCE as the date of production. Therefore suggesting the period of Mithradates VI as the time of functioning of the fortress. Coins discovered during excavations were minted within the time period of 110-85 BCE (Şenyurt and Akçay, 2016: 236-8). The aim of the fortress is clearly defensive and like the other fortresses located on the coast Cıngırtkayası, Ünye, it also regulate the route from coast to inland.

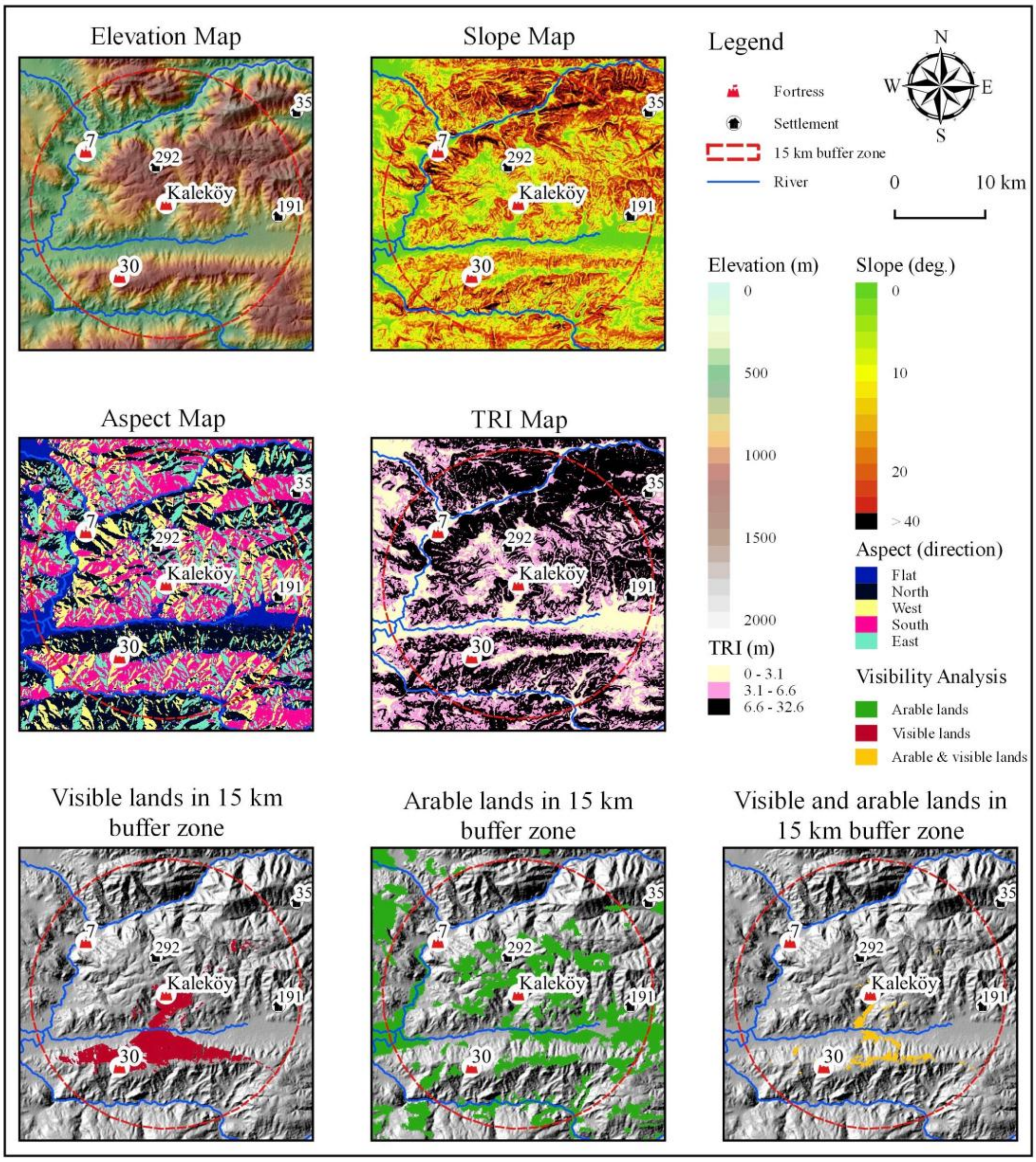
[7]Şenyurt states that the fortress had been subjected to illegal excavations but estimates the damage to be negligible to have an effect on archaeological data recovered (2016: 228).

Rock-Cut Tunnel

Fortification walls surrounding the hill (Kurulkayası Excavation Archive)

ID:011 - Kaleköy

Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	2	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 36N
Province	Amasya	**Easting, m**	748318
County	Center	**Northing, m**	4498953
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	643 m	**Visible area**	6.3 %
Slope	3.0°	**Arable area**	16 %
Aspect	North	**Visible & arable area**	1.5 %
TRI	8.2 m	**Median TRI**	6.6 m



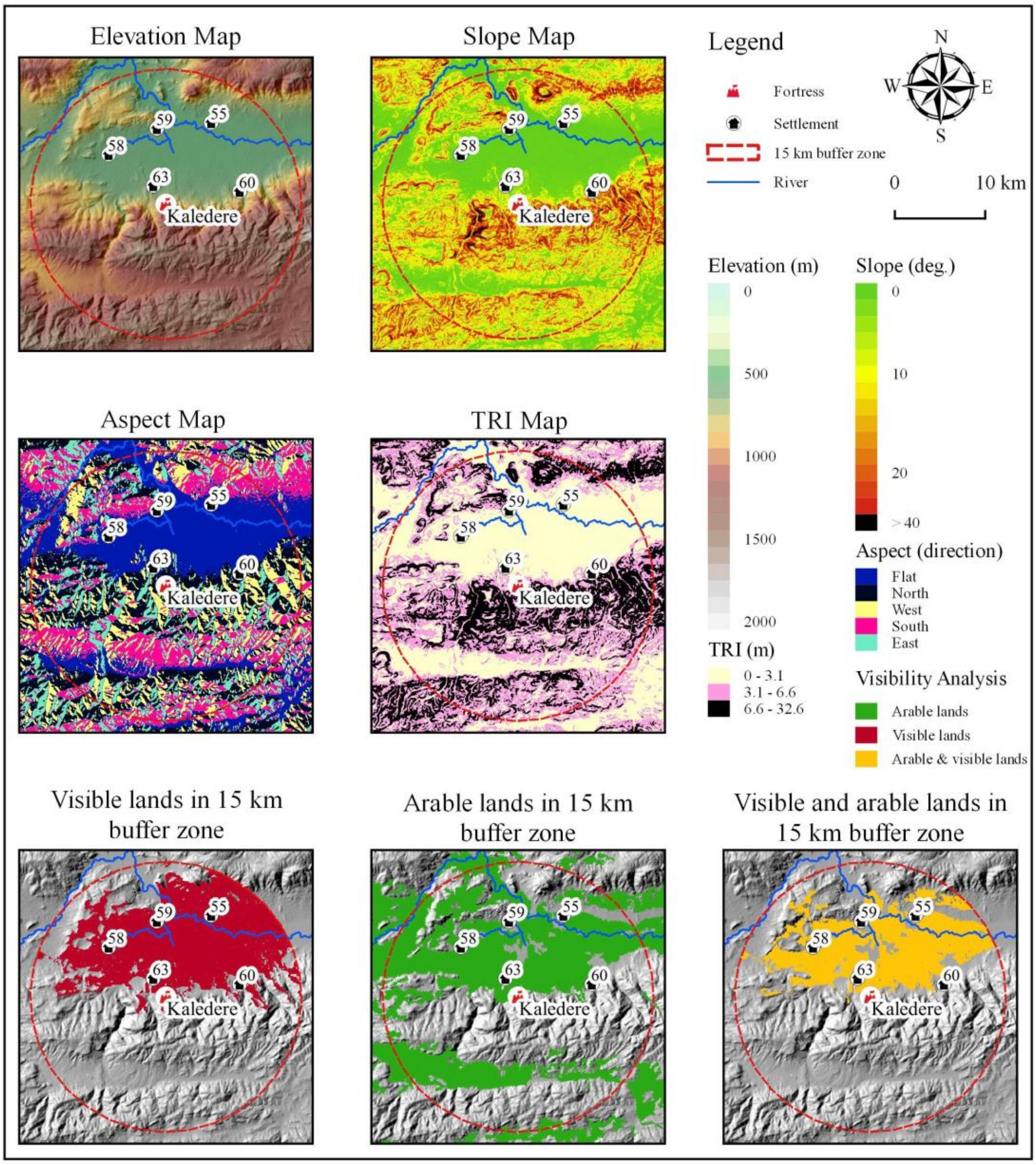
Description

It is located 10 km southeast of Amaseia on the Amasya-Tokat highway, it has a commanding position over the topography of the northern slopes of the valley.

There are rock tombs on inaccessible façade of the fortress. There is a rock cut tunnel stretching from northwest to the center (von Gall, 1967: 515). The top of the fortress is accessible by climbing the narrow passage on the north side. Fortification wall on the north and the west side of the outcrop is still standing. The northwestern fortification wall was built with ashlar masonry and it creates bastions. The southwestern wall and buttresses are also visible. Walls can be dated to Hellenistic and Roman periods. This is also supported by ceramic data over the surface (Personal observation). Wilson assumed that this is a fortress of Mithradates VI. (Wilson, 1960: 210). Kaleköy, which we only have limited knowledge, is located 4km south of Zeus Stratios temple. Visibility of the fortress includes the temple. Since the fortress is located on a narrow valley without protecting any agricultural land show that the fortress has a defensive function.

General view of the outcrop

ID:012 - Kaledere			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.5	**Dating**	EBA/IA/HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	257207
County	Center	**Northing, m**	4457477
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	838 m	**Visible area**	25.6 %
Slope	16.5°	**Arable area**	31 %
Aspect	North	**Visible & arable area**	17.1 %
TRI	7.9 m	**Median TRI**	3.6 m



Description

Located 4 km northwest of Üzümoren village, Kaletepe has a very commanding position over the Dazimonitis plain.

Dazimonitis view from Kaledere

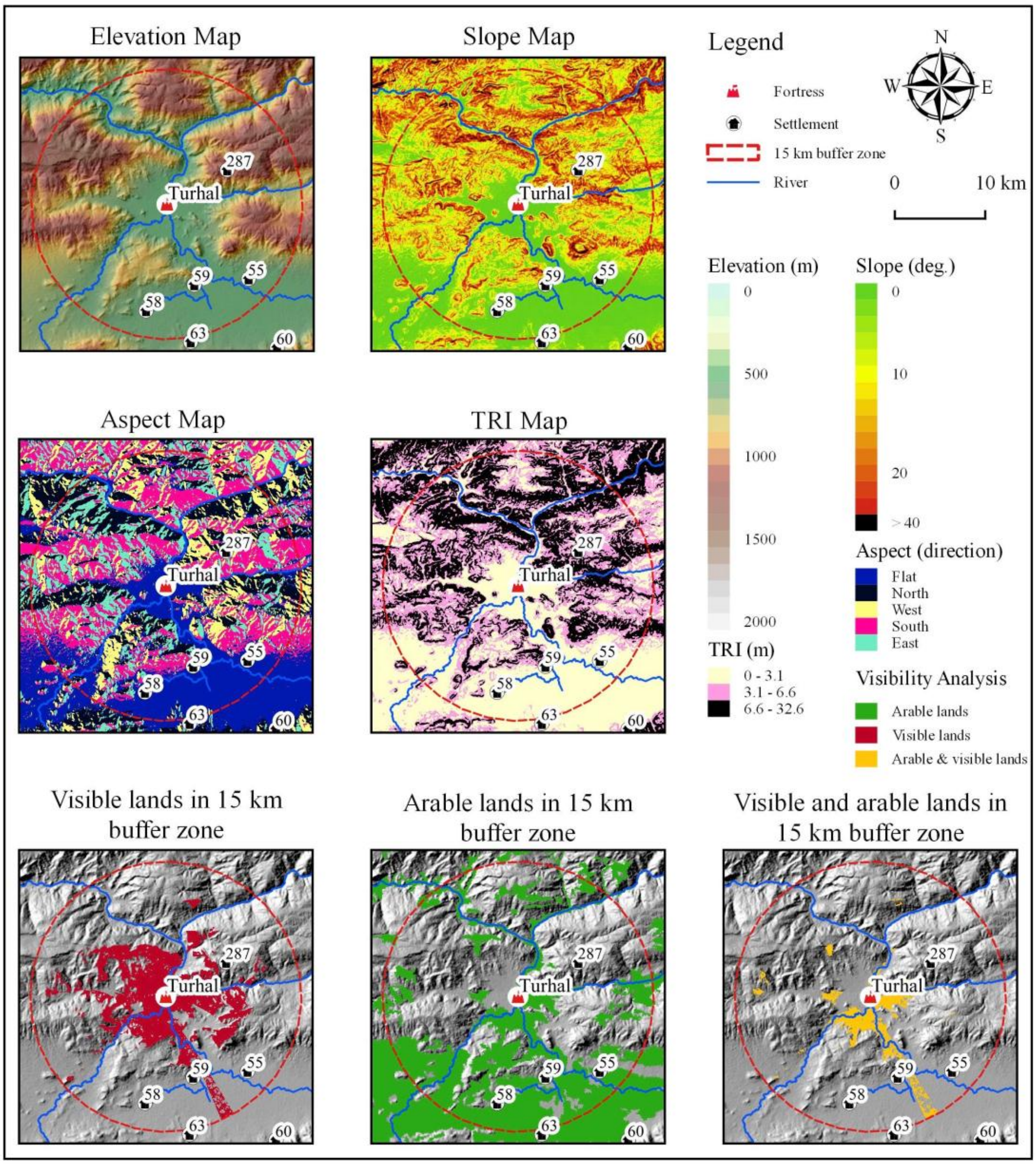
The top of the hill is flat and surface findings indicate a fortification wall surrounding the hill. Kaletepe was visited by Özsait in 1997 and Early Bronze Age and Iron Age ceramic data was recorded (Özsait, 1998:95). During our visit 2010, Iron Age, Hellenistic and Byzantine pottery sherds, pieces of roof tiles observed on the surface.

Kaledere fortress

Analyses revealed that the fortress has the most dominant location in Dazimonitis plain and it controls vast agricultural areas. Therefore fortress is thought to have a role in the administration of the agricultural lands as well.

ID:013 - Turhal

Ancient Name(s)	Gazioura	**Proposed Function**	ADM
Size of Fortress, ha	0.6	**Dating**	HL/BYZ/OTT
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	253170
County	Turhal	**Northing, m**	4474764
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	584 m	**Visible area**	13.1 %
Slope	3.4°	**Arable area**	25 %
Aspect	Flat	**Visible & arable area**	3.7 %
TRI	3.6 m	**Median TRI**	4.3 m



Description

The fortress is located on an outcrop in the city centre of Turhal in Tokat. Wilson is very certain that Turhal can be localized as Gazioura (Wilson, 1960: 216). Strabo mentioned here as a 'now deserted' royal residence 'παλαιὸν βασίλειον, νῦν δ' ἔρημον' (Strabo, XII.3.15).

It is one of the important coin minting fortresses of the kingdom. It is possible to track Persian roots which the kingdom intended to claim through Gazioura coins. These coins are known to have Baal Gaziour in obverse and the legend of a vulture ripping up a deer together with Ariourat in reverse. These depictions are known to be of Persian origin.[8]

Turhal is a fortress located on an outcrop in the middle of the Dazimonitis plain. Pottery sherds scattered over the slope of the fortress reveal its occupation from Iron age to Ottoman period. Most of the architectural remains such as fortification walls belong to the Byzantine and the Ottoman periods.

Fortification wall dated to Byzantine and Ottoman periods

Hamilton states that some of the reused blocks he observed in areas which he calls entrances to the fortress are from the Hellenistic period. The stepped tunnel structure located on the northwest side of the fortress continues for about 50 steps with 45

[8]On the silver drahms that Gazioura fortress minted, Balgzour on the obverse and Ariourat legend on thereverse is observable. This coin belongs to the Cappadocian king Arirathes I (BCE 330-322) era. It represents the then-unrevealed relationship between Gazioura and Cappadocia (Erciyas, 2006: 31-2)

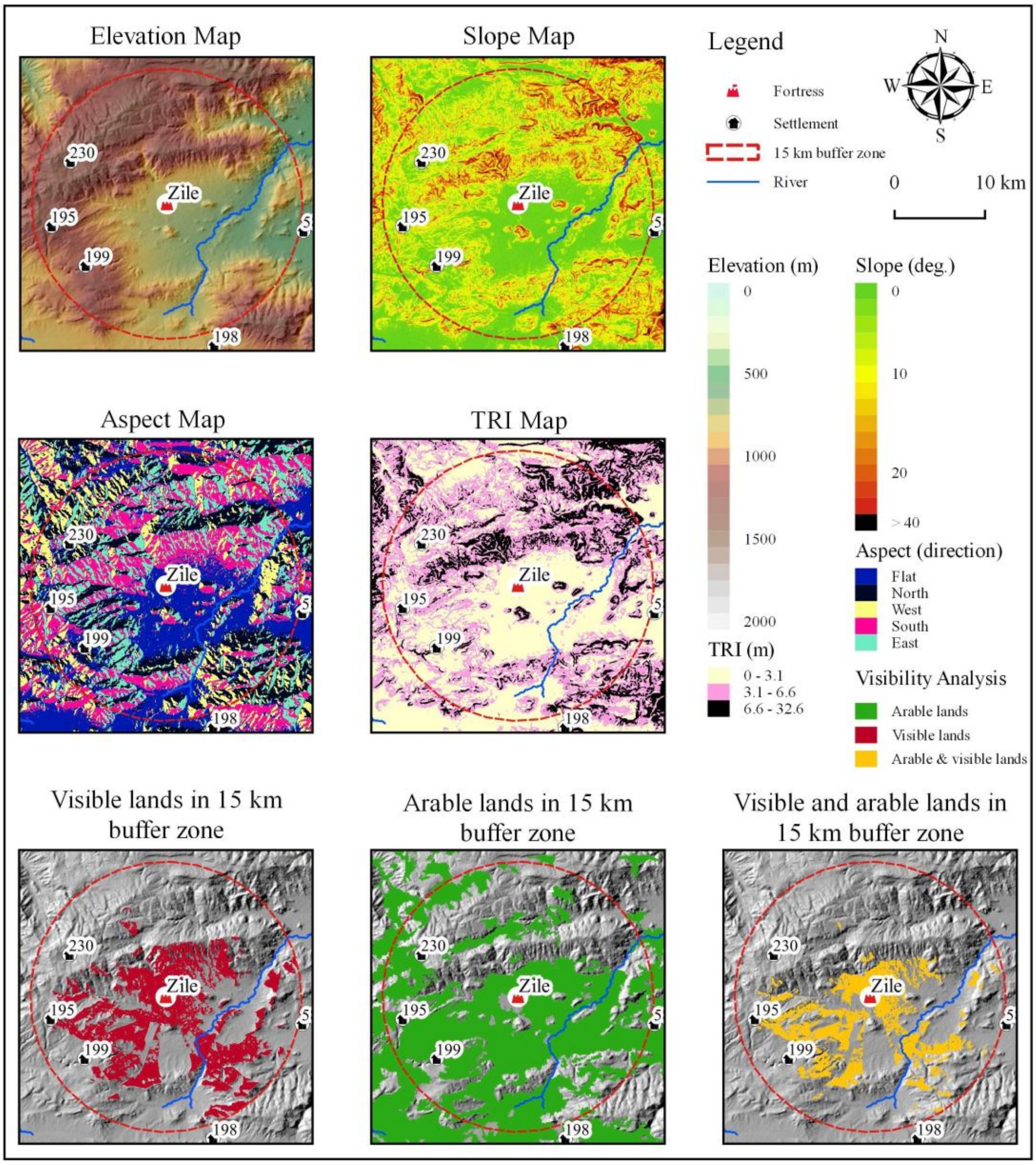
degree gradient and the rest is difficult to reach (H. 3.23 and W. 2.81 meters) (Hamilton, 1842: 334; Anderson, 1903: 69; von Gall, 1967: 515).

Rock-cut tunnel on top of the fortress

Turhal fortress is located on the Amaseia-Comana road, in the middle of the Dazimonitis plain It controls the road and monitored the movements in the Dazimonitis plain and based on the visibility analysis it surveils large amount of agricultural lands In addition to this considering the issuing of coins during Mithradatic times, fortress was operated administrative function.

Dazimonitis plain form Turhal fortress

ID:014 - Zile			
Ancient Name(s)	Zela	**Proposed Function**	ADM
Size of Fortress, ha	1.50	**Dating**	HL/ROM/BYZ/OTT
Location		**Projection**	UTM WGS84 36N
Province	Tokat	**Easting, m**	745675
County	Zile	**Northing, m**	4465342
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	766 m	**Visible area**	17.3 %
Slope	5.8°	**Arable area**	40 %
Aspect	North	**Visible & arable area**	10.8%
TRI	2.9 m	**Median TRI**	3.1 m



Description

Zela is located on a low hill western end of the Dazimonitis plain. Strabo says that during early periods, Zela was a sacred territory dedicated to the Persian goddess (Omanus, Anadatus, Anaitis) where temple slaves and the priest lived (Strabo, XI. 8.4). Zela's administrative organization was similar to Comana Pontica, Ameria and Comana Cappadocia, which also Strabo comments likewise. This temple was probably built in the late Achaemenid period (4^{th} century BCE) (Boyce, 1985: 288). According to Strabo, the Pontic people would come here to make vows about important issues (Strabo, XII. 3.37).

In the literature Zela is usually mentioned as the second most important cult center of the kingdom after Comana, rather than a fortress. However, Hellenistic remains such as rock-cut tunnel and tomb push my thinking it could be a fortress as well.

Aerial View of the Zela (photo by PRD Production)

As known from Roman coins (Price & Trell, 1977: 102), the temple was probably in hexastyle form and was located on a low hill (Wilson, 1960: 215). By Pompey' reorganization, Zela became a city with new territories and buildings. On the northeast ridge of the hill, there was a small theater that was partially carved out of the main rock and the rest was assumingly built with stone and wood. Apart from the main rock sections and possible ruins of the orchestra section buried under the debris at the bottom of the hill, the building was destroyed. The rock cut seats are hard to recognize. Other remains of the city include a tomb on the eastern slope of the fortress, a few columns and some pieces of architecture (Wilson, 1960: 215). Moreover, Hamilton observed finely cut Ionic capitals, few architectural fragments and a worn Greek inscription were reused in the construction of the wall of the fortress (Hamilton, 1847: 49). The stepped tunnel structure of the fortress lies in the north-south direction and the entrance of the tunnel faces north. Except for rock cut tunnel and rock-cut tomb (Wilson, 1960: 215), the remains were recognized with the reorganization of Pompey.

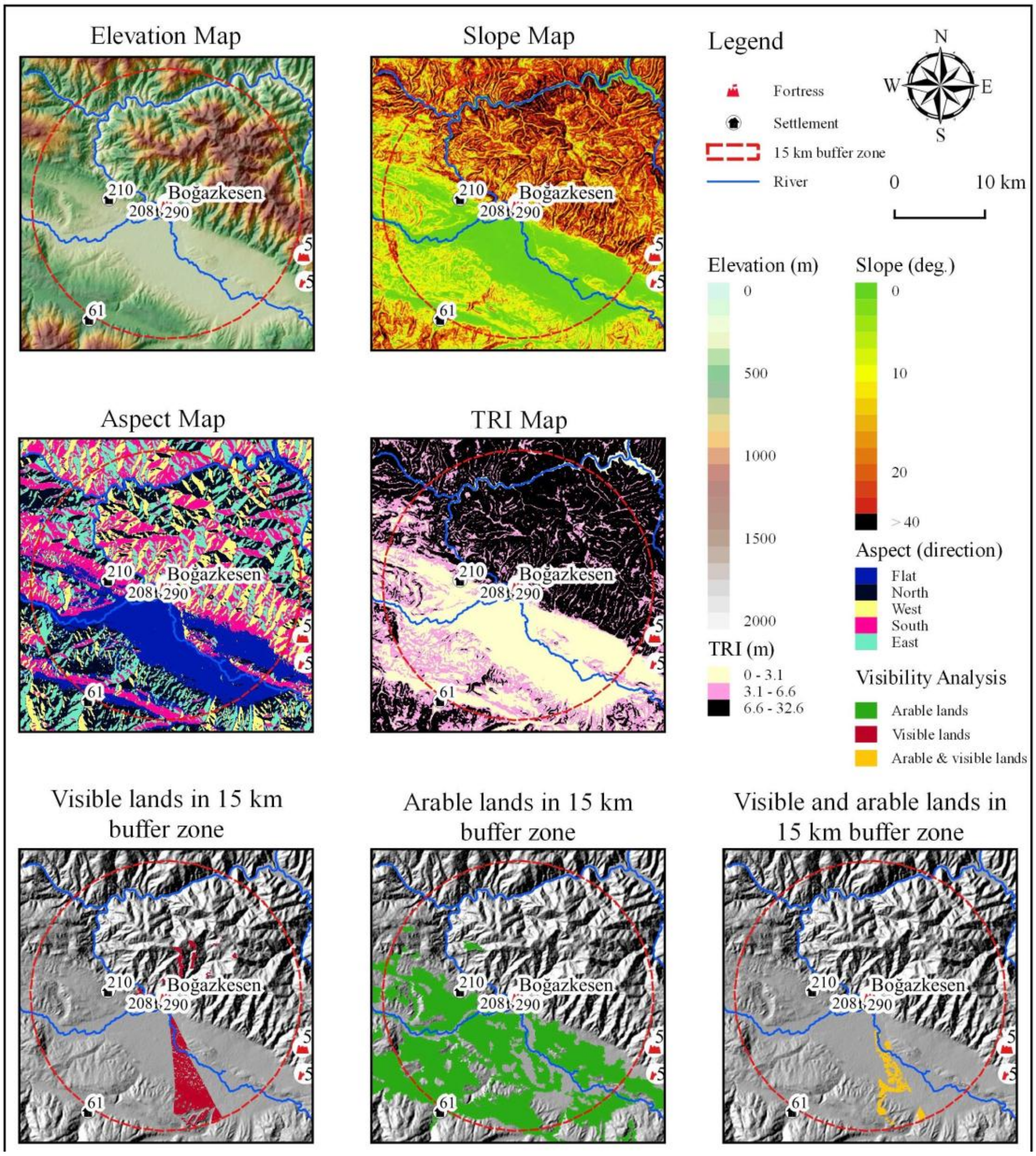
Rock-cut Tunnel

Özsait notes that Zile must be what is mentioned as Anzilia in the Masathöyük tablets (Özsait, 2006: 452; Özsait, 2009: 197). He says that settlement in the fortress goes as far back as the Early Bronze Age. During Hellenistic period, it was probably responsible for the protection of the temple and surrounding sacred precinct laid down Zelitis region.

The fortress which is located on the western end of Dazimonitis Plain and control part of the Zelitis region. Roads from Phrygia to Comana and Sebasteia and roads from Black sea coast passed under the inspection of this fortress. It is in a position to not only monitor these roads, but also to notice any threat to this plain from the east or west. In addition to its protective role of the sacred precinct and its territory lay down in Zelitis region, commander of the fortress must have had the administrative power on the settlements scattered in this region.

ID:015 - Boğazkesen

Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	0.4	**Dating**	HL/BYZ/OTT
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	289712
County	Erbaa	**Northing, m**	4516794
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	256 m	**Visible area**	3.6 %
Slope	9.2°	**Arable area**	22 %
Aspect	East	**Visible & arable area**	1.1 %
TRI	4.5 m	**Median TRI**	5.6 m



Description

It is located in Kaleköy village in Erbaa where the Yeşilırmak (Iris) and Kelkit (Lycus) rivers confluence. Oshausen and Biller identified some remains in Kaleköy village with Eupatoria or Magnopolis (Olshausen and Biller, 1978: 169). The city was founded by Mithradates VI Eupator in the western Phanaroia plain. There is no mention about Eupatoria because; as Strabo states that the city was left unfinished. During Pompey' reorganization, he renamed the city as Magnopolis and enlarged its territory (Strabo, XII. 3.30). The piers of the bridge possibly dated to late antique period now called Boğazkesen Köprüsü in the village is still visible. The ruins of fortress are located 1.5 km north of Boğazkesen Bridge. The foundation of the fortification wall can be observed on the satellite image.

Remains of fortification wall on satellite image

The fortress where Phoinix just before joining Lucullus's army with his soldiers, he lit the signalling fire to warn Mithradates about the approaching Roman army (Appian, Mithr. 79).

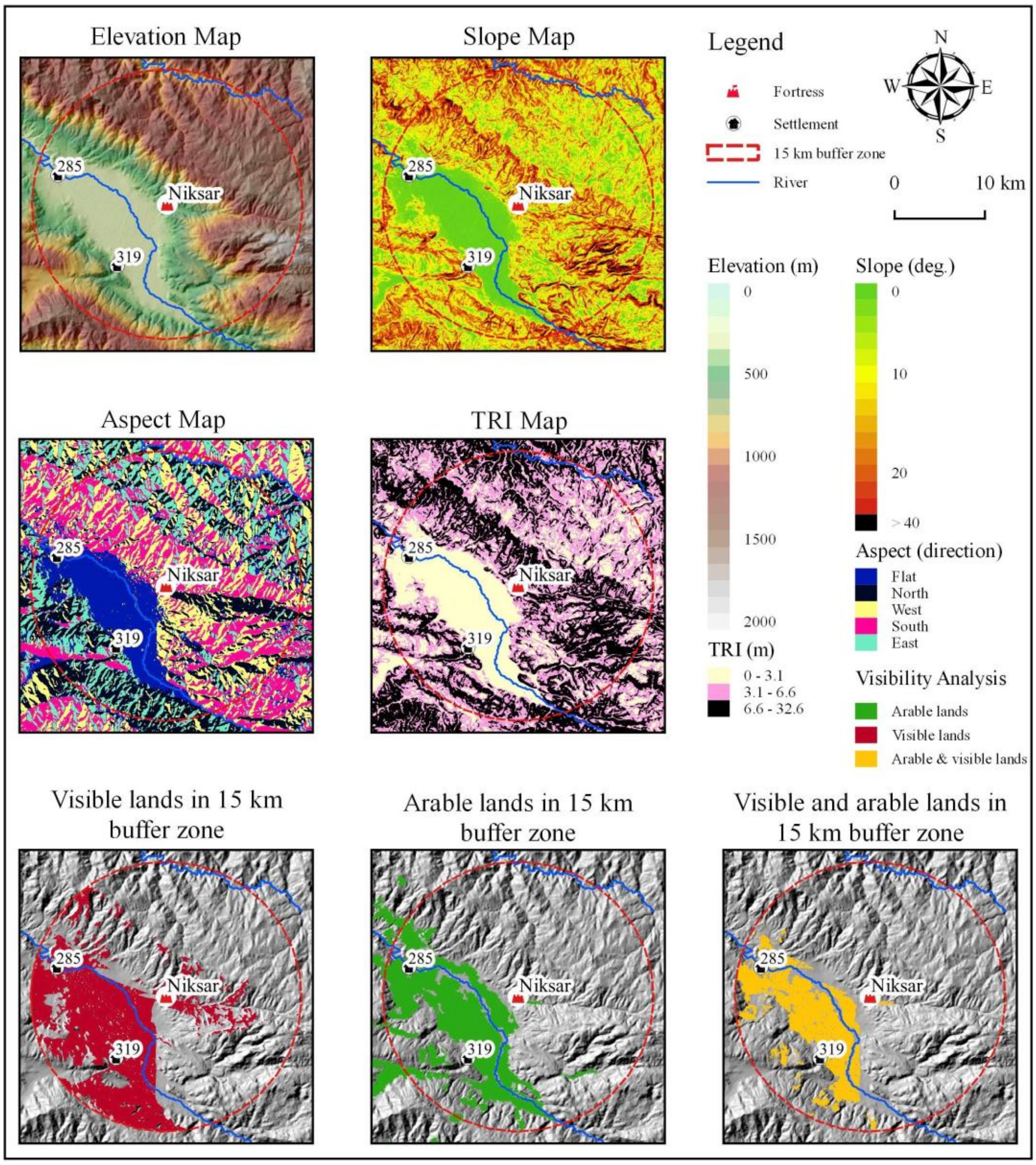
One of the Bastions of the fortress dated to Byzantine Period

In the light of this information Biller and Olshausen associated Cabeira with Niksar (Biller and Olshausen, 1978: 169). Hellenistic wall pattern can be observable here and there. Predominantly Byzantine and Ottoman wall patterns are reinforced with bastions.

The fortress is located at the intersection of the Lycus and the Iris, at the mouth of the valley. It commands in both northern valley which Iris run along to Phanaroia and southwest side where the Lycus river comes. It controls the entrance of the Lycus Valley. The analysis show that the visibility area of the fortress is low however, the agricultural lands in this visible area is high. This makes the Boğazkesen fortress close to the administrative function, when considering the relations with the city of Eupatoria this fortress could protect and defense the city and the passes.

A view of the Lycus from the fortress

ID:016 - Niksar			
Ancient Name(s)	Cabeira	**Proposed Function**	ND
Size of Fortress, ha	2.9	**Dating**	HL/ROM/BYZ/SEL/OTT
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	327348
County	Niksar	**Northing, m**	4495291
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	458 m	**Visible area**	21.6 %
Slope	2.3°	**Arable area**	14 %
Aspect	North	**Visible & arable area**	10.2 %
TRI	6.6 m	**Median TRI**	4.8 m



Desciption

Modern day Niksar has had various different names in antiquity. It was called Cabeira during the Mithradates kingdom, Diospolis during Pompey’s reign, Sebaste and Neocaesareia in the Roman period.[9] It was situated in the Phanaroea plain watered by the Lycus, and on the right slope of Paryadres Mountain and 150 stades far from Eupatoria (Magnapolis) to the south (Strabo, XII.3.30). The city is located at the intersection of the roads that passes through Comana Pontica and Dazimonitis plain along the Iris river and reaches Nicopolis (Wilson, 1960: 242; Erciyas, 2006: 44). In his visits Hamilton thinks that this site matches with what was described as Cabeira in ancient sources, the residence of Mithradates VI. during the Mithradatic wars (Hamilton, 1842: 347). In the second war, Mithradates VI started to form a new army against Lucullus’ attacks (Appian, Mithr. 78). In the autumn of 72/71 BCE, while Mithradates was watching Lucullus’ formations around Pontos, Lucullus crossed Halys and entered Pontos territories. In winter, Mithradates was designing his plans in Caberia and sending help to Amisus under siege. An army of 40000 infantry and 4000 cavalry are gathered under Diaphantus and Taxiles’ command (Magie, 1950: 333; Appian, Mithr. 79). Lucullus and his army started marching to Cabeira through mountain passages along the Iris valley with three legions and Galatian reinforcement during spring. Fortresses that positioned on mountains were informing the king about Lucullus’ approach with signals. Narrow passages that enter the Cabeira plain were held by the Pontic army. City of Eupatoria approximately 150 stadia north of Cabeira opened its gates to Lucullus’ army. Meanwhile Phoinix joined Lucullus’ army with his soldiers after he signaled Mithradates with fire (Appian, Mithr. 79). In the light of this information Biller and Olshausen associated Cabeira with Niksar (Biller and Olshausen, 1978: 169).

Cabeira was also housing important temple-state dedicated to Men which was founded by Pharnaces at Ameria.[10] Strabo states that the sanctuary at Ameria was the place where the ‘royal’ oath takes as follows: by the fortune of the king and by Men of Pharnaces (Strabo, XII 3.31).

[9]Cabeira's Neocaesareia identification is discussed in detail by Olshausen and Biller (1984: 47)
[10] According to Cumont, Ameria could be the village Ardıçlı in Erbaa, linking with his discovery of bronze bull head in this village (Cumont&Cumont, 1906: 270.)

Restored side of the fortress

During the Byzantine period, the settlement on the outcrop was surrounded by fortification walls. The walls that are still visible today were constructed by the Byzantine and the Danishmendids who conquered the fortress later on (Wilson, 1960: 242). There are marks of a ditch on the northern ridge. This ditch is filled with debris right now. The fortification wall can be tracked towards north and northeast which small section of it displays Hellenistic period construction technique, the regular pattern of the ashlar headers and stretchers. The wall is accompanied by rounded, rectangular and prow shaped bastions of rough built with random coursed masonry and ashlar. The wall on the south of the fortified hill shows Roman period features. Therefore it is possible to say that the Roman settlement was established in this less steep area (Bryer and Winfield, 1985: 109). The earlier visitor of the fortress, Cumont does not give much information about the Hellenistic and Roman occupation of the fortification (Cumont, 1905: 259). von der Osten reports that there are occasional marks of polygonal masonry along the wall (von der Osten 1927: 135). Wilson also mentions Hellenistic and Roman remains in a small section of the fortress. During Third Mithradatic War, Appian informs that Roman soldiers took refuge under the fortification walls after fleeing from Mithradates' siege. Thereby he provides the first information the presence of the Hellenistic fortification walls. (Appian, Mithr. 88). Olhausen and Biller associate Roman occupation with the presence of the fortress. (1984: 46)

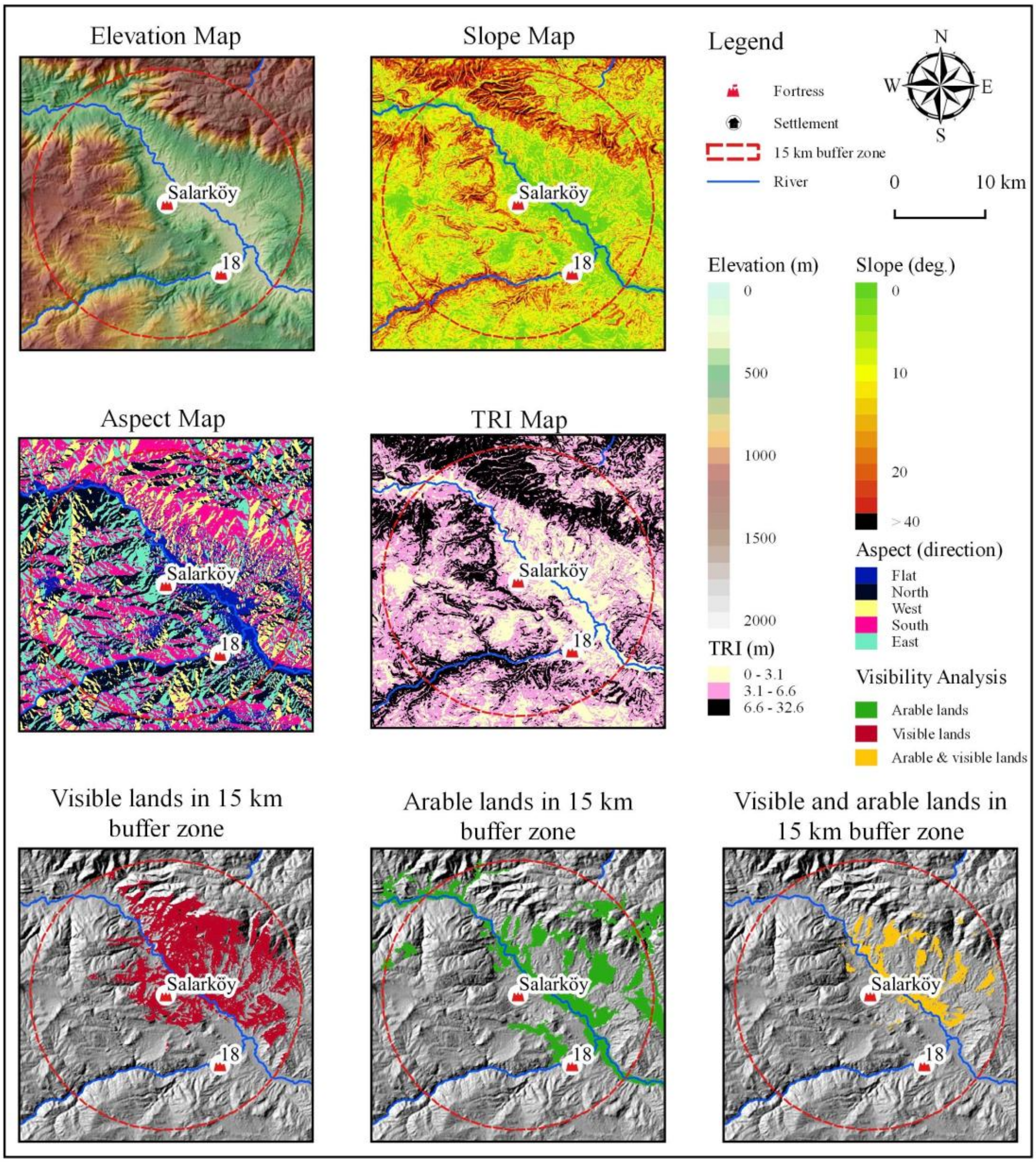
Tunnel construction dated to Byzantine Period

However he adds that there are no remains from the city (Wilson 1960: 242). In the inner citadel rock-cut tunnel was built with masonry vault in a later period and used to collect water (von der Osten, 1927: 135). However it is very difficult to identify the current location of the tunnel.

The Fortress, that witnessed the Third Mithradatic War, is located in a commanding position that overlooks both Phanaroia plan and Lycus valley. As previously stated, Phanaroia plain is one of the primary agricultural revenue sources for the kingdom. Strabo writes that this plain hosts Mithradates' palace and zoo. Administrative function of the fortress come forward since it stands out as a place where king choose to reside and also a place where coins are minted. Analyses show that agricultural lands under the fortress' visibility range lie only slightly under the threshold that reveals the administrative function. When taken into account along with other resources fortress can be thought to have had administrative function.

ID:017 - Salarköy

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	1.7	**Dating**	EBA/HL/ROM
Location		**Projection**	UTM WGS84 36N
Province	Sinop	**Easting, m**	640590
County	Boyabat	**Northing, m**	4599105
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	439 m	**Visible area**	15.4 %
Slope	9°	**Arable area**	12 %
Aspect	North	**Visible & arable area**	4.1 %
TRI	5.1 m	**Median TRI**	4.5m



Description

Salarköy fortress is locating 15 km west of Boyabat and locals are named here as Direklikaya. There are cutting marks and rectangular structures carved on top of the rock that also houses the Paphlagonian type rock-cut tomb. There is also a rock cut tunnel west of the outcrop.

A General view of the Fortress

The rock-cut tomb dating to the Hellensitic period has three columns in front of it. The kneeling bulls on the caps of the columns create a depiction where the bulls are carrying the top of the rock cut tomb. The rock was carved behind the columns to create an entrance and there is a rectangular tomb room entered by a small rectangular door closer to the right side. There is a kline inside the room (Başoğlu, 1972: 64). On the left side of the entrance there is a 30 x 30 cm window. The ceiling and the floor are flat. There is a triangular pediment on top of the beam. A fight scene is depicted right in the middle of the pediment. It is a fight between a lion and a human where the human is kneeling down and wrapping his arms around the lion’s neck while the lion is firmly biting his leg (Başoğlu, 1972: 65).

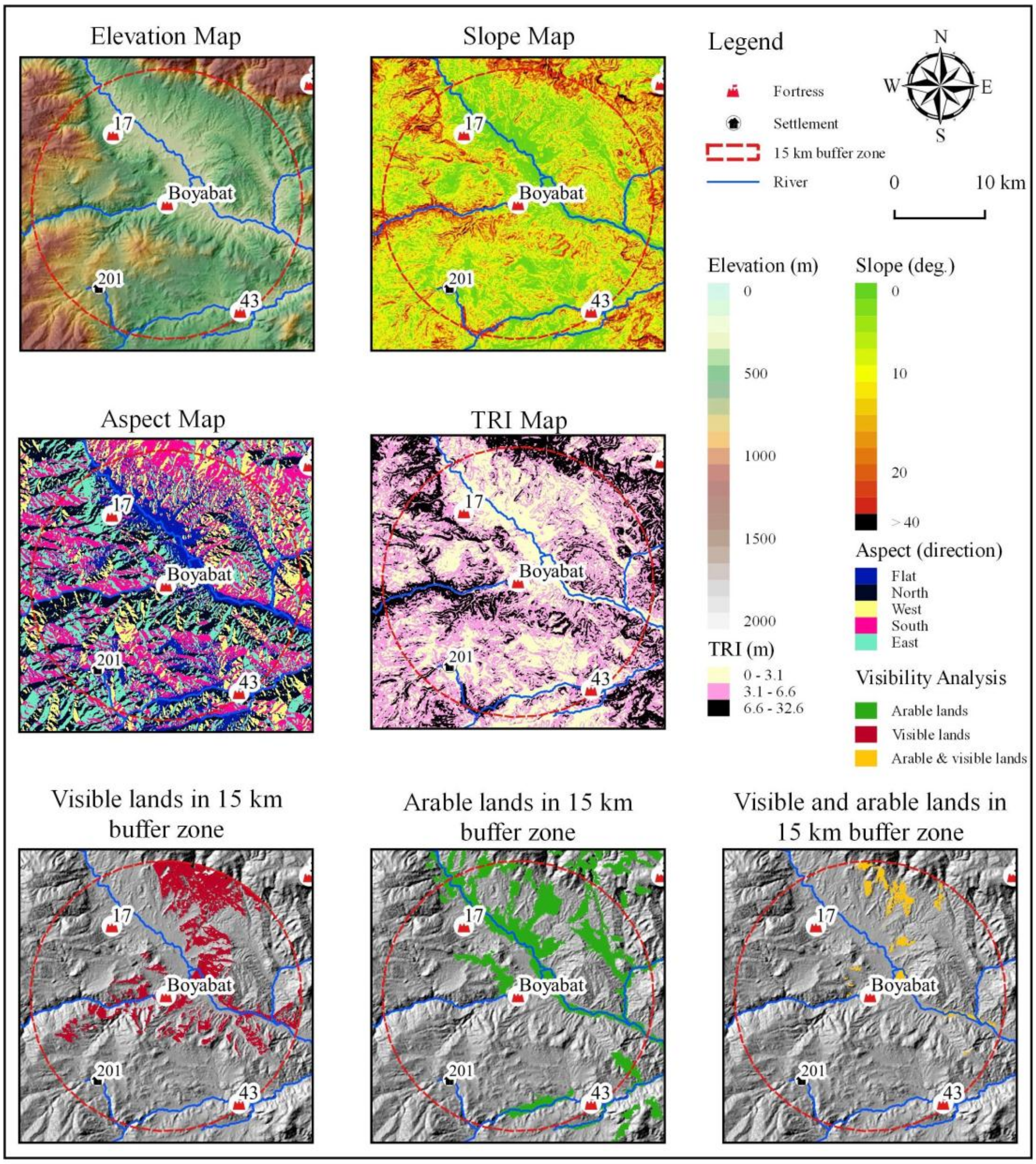

Rock cut tunnelA detail of the pediment of the tomb

Surveyors reported Hellenistic, Roman and Early Bronze Age pottery sherds spreads across to the northwestern and west slopes of the fortress (Donnan, 1999: 366; Dönmez, 2000: 231).There are also settlement remains on the rocks over the Salarköy rock tomb. Just as in Kalekapı settlement there are rock foundations that provide support for wooden construction alongside rock-cut traces.

Doonan provides a measurement the settlement around the fortress as approximately 5 hectares (Doonan, 1999: 366). The fortress covers about 1.70 hectares of land. Summerer belives that the rock-cut tomb was the manifestation of the presence of the tomb owner whose possibly the local chief or the commander of the fortress (Summerer and von Kienlin, 2010: 196).

ID:018 - Boyabat

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	3.1	**Dating**	IA/HL/BYZ/OTT
Location		**Projection**	UTM WGS84 36N
Province	Sinop	**Easting, m**	647098
County	Boyabat	**Northing, m**	4591800
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	394 m	**Visible area**	10.2 %
Slope	19.4°	**Arable area**	11 %
Aspect	West	**Visible & arable area**	1.9 %
TRI	10.7 m	**Median TRI**	3.8 m



Description

The fortress is located on an outcrop, west of the Boyabat. Gazidere River runs on one side of the fortress. The only study concerning the fortress was done by Gökoğlu. He provides initial information, according to his account, the fortification wall surrounding the fortress was dated to the Byzantine and the Ottoman Period (Gökoğlu, 1952: 177). Medieval occupation almost erased the earlier periods. Marks of any Hellenistic period wall could not be reported. French reported Iron Age and Hellenistic sherds on the slopes the fortress. The only architectural feature that dates to the Hellenistic period is a rock-cut tunnel (H. 3.00 and W. 3.50 meters) with 252 visible steps locating on the northern terraces and it probably goes down to the Gazidere River (Gökoğlu, 1952: 125). He also mentions a second tunnel (H. 2.00 and W. 1.50 meters) narrower than the first one (Gökoğlu, 1952: 125).

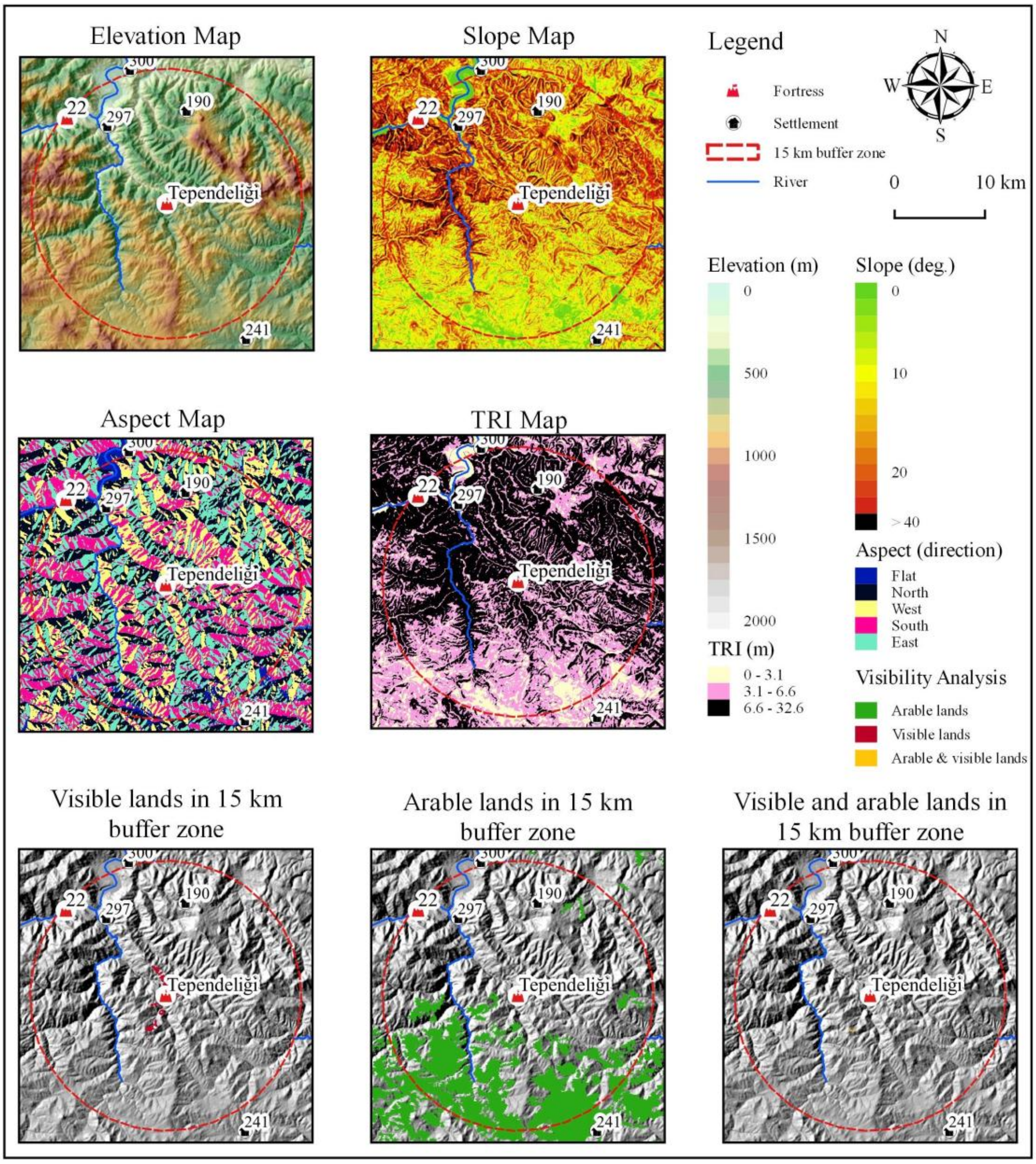
A general view of the fortress

The outcrop has been flattened and terraced. The remains of a tower southeast and an entrance gate dated to later periods sit on these terraces. The fortification walls extend to the northernmost point. It was built with large rubble stones supported by wooden girders, mostly sitting on the rock.

Rock-cut tunnel that goes to river

The fortress sits on a huge outcrop gazing most of the area its surroundings. Its location in the Amnias Valley, makes the fortress for controlling, furthermore, its high visibility portion over the vicinity provide administrative function.

ID:019 - Tependeliği			
Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.30	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 36N
Province	Samsun	**Easting, m**	742841
County	Bafra	**Northing, m**	4575065
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	480 m	**Visible area**	0.5 %
Slope	10.3°	**Arable area**	15 %
Aspect	East	**Visible & arable area**	0.01 %
TRI	5.8 m	**Median TRI**	7.2 m



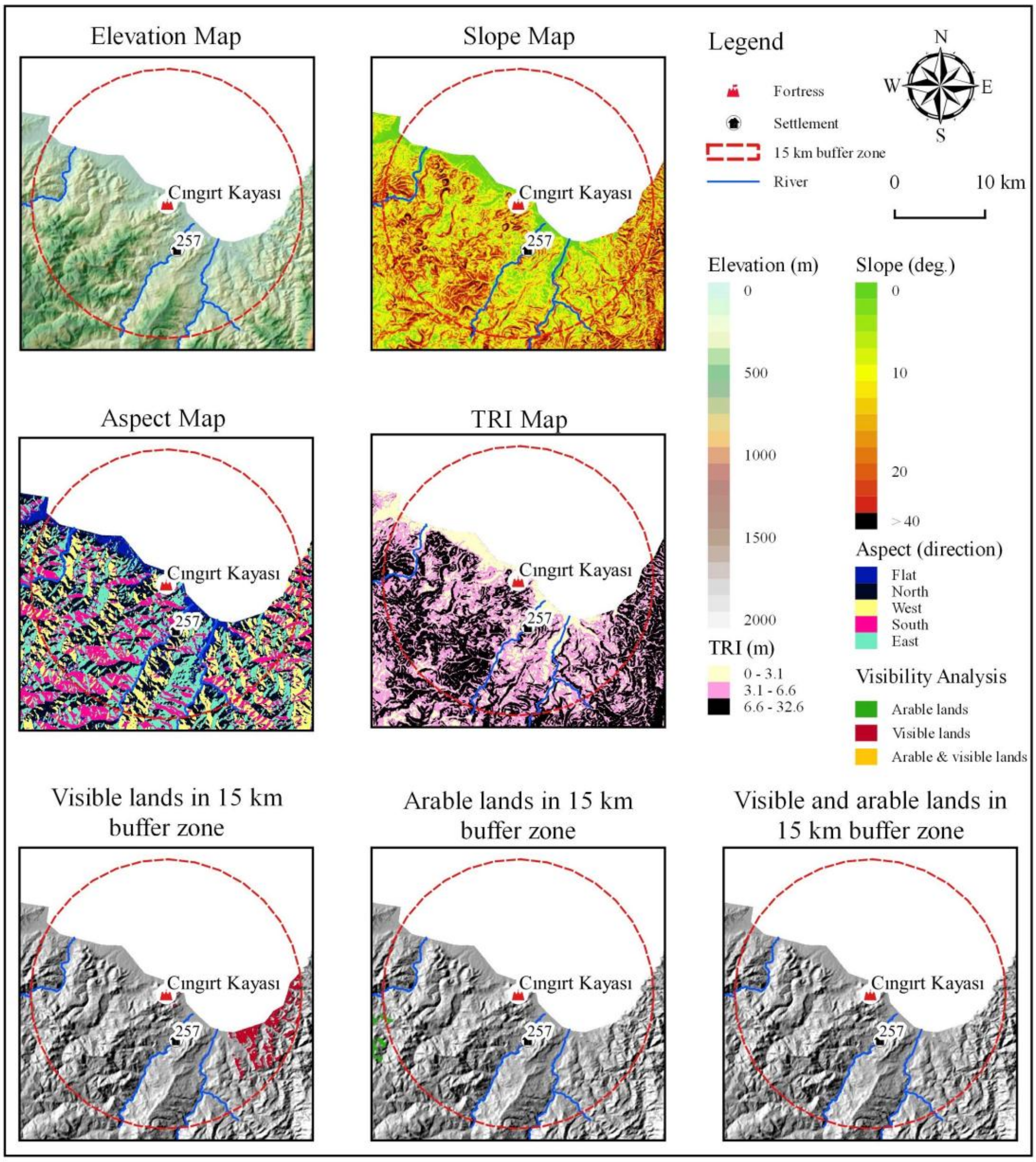
Description

It is located 4km west of Başaran village which is located 10km east of Esençay village. The settlement is established over an area of 200x150m and it has a fortress as well. Fortress is located west of the settlement and sits on a rough landscape. There is only one rock-cut tunnel in the fortress (W: 2.70 and H. 2.20 meters). 260 steps are countable. Tunnel is 80 meters long and goes down until it reaches the river (Bilgi et al., 2004: 88). Fortress is located inside one of the narrow valleys south of the Halys River. It has no relationship with other fortresses in the region. It was probably designed only to protect the valley in which it is located.

Rock-cut Tunnel

ID:020 - CıngırtKayası

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.8	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Ordu	**Easting, m**	370314
County	Fatsa	**Northing, m**	4546058
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	113 m	**Visible area**	1.7 %
Slope	3.3°	**Arable area**	0.04 %
Aspect	Flat	**Visible & arable area**	0.0 %
TRI	2.3 m	**Median TRI**	5.5 m



Description

Cıngırt Kaya is located in Yapraklı village, 5 km east of Fatsa in Ordu and it sits on an outcrop surrounded by a forest. It has been subject to one of the important excavations in the region that aims to understand the Hellenistic period and one of fortress Mithradates VI. Surveys were started in 2011 and in 2013, the excavation project has been initiated. Studies on Cıngırt Kaya show that the outcrop has been used since the Paleolithic period (Erol, 2013:1069). Excavations were started around the rock-cut tunnel structure and architectural remains dated to Hellenistic period that associated with fortification units such as a watch tower were discovered. The stepped tunnel has 120 visible steps and it has a 45 degrees inclination, probably going down to the Kavaklar (Kahve) river running right next to the outcrop (Wilson, 1960: 199).

Rock-cut tunnel and architectural remains revealed by excavations (Cıngırtkayası Excavation Archive)

According to Özsait, who visited the fortress, there are *arcosolium*s carved into the bedrock in various places in the fortress (Özsait, 2008: 299). The outcrop has been shaped in such a way to serve as a staircase that allows access to the rocky slope on the southeast side of the fortress. [11]

Material culture obtained through excavations provides information on Hellenistic, Roman and Byzantine periods of the fortress (Erol, 2013: 1071). Especially coins issued in Sinope and Amisus dated to the period of Mithradates VI were recovered (Erol, 2013: 187). The summit of the fortress presented single occupation level. Excavations revealed that it was extensively used during the period of Mithradates VI (Erol, 2016: 561). Architectural construction revealed by excavations seems grid planned with ashlar blocks leaned against the main rock surface. Its purpose is thought to be for storage (Erol, 2016: 562).

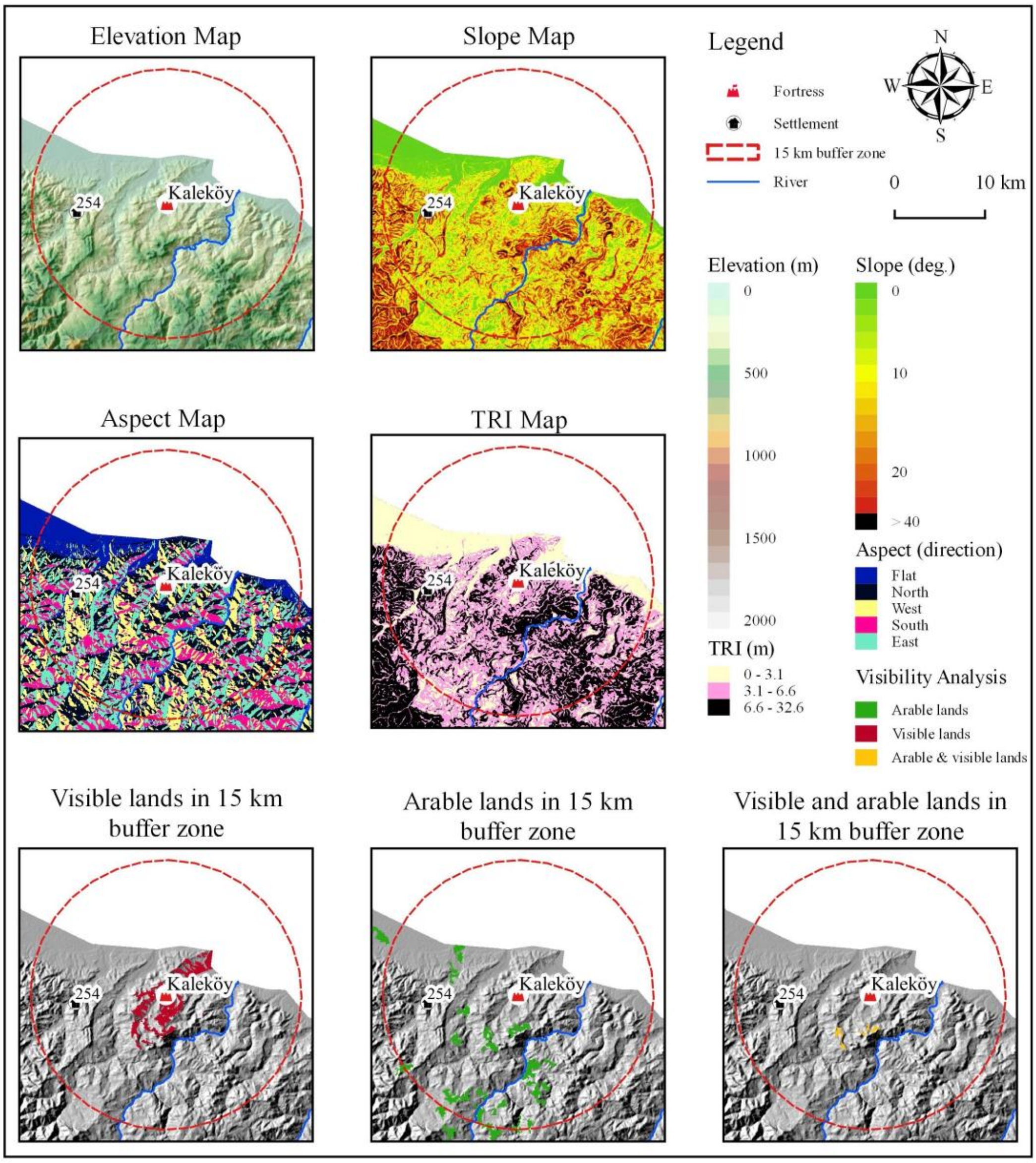
Rock-cut tunnel (Erol, 2013, 193).

[11] Özsait considered the rock cut steps and flanned surfaces as altars.

All material culture recovered in excavations belong to this period, especially coins. Plenty of arrowheads, ballista arrowheads, cannon balls, spear heads and coarse ware sherds recovered during the excavation underline the military function for the fortress (Erol, 2015, 2016). Some pottery assemblages could be the sign of civic life or administrative function of the fortress such as red and black glazed skyphos, fish plates and some distinguished metal works (Erol, 2016: 565).

This fortress, like Ünye fortress, keeps the valley and aricultural lands under its control. Analyses reveal that it has a location in such a way to protect the inerior regions against threats come from the sea.

ID:021 - Kaleköy			
Ancient Name(s)	Chabackta	**Proposed Function**	DEF
Size of Fortress, ha	1.2	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 37N
Province	Ordu	**Easting, m**	352143
County	Ünye	**Northing, m**	4550844
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	168 m	**Visible area**	2.4%
Slope	10.8°	**Arable area**	2 %
Aspect	North	**Visible & arable area**	0.1 %
TRI	7.2 m	**Median TRI**	5.0 m



Description

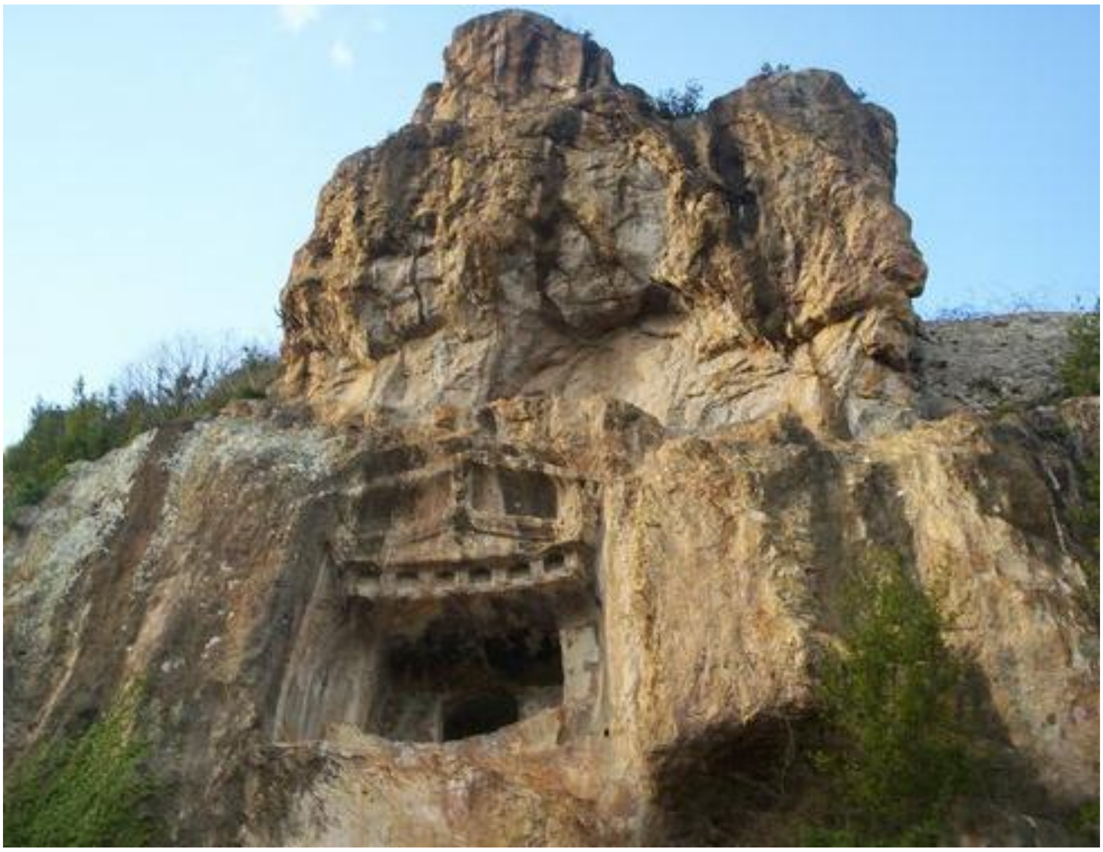
Also named Çaleoğlu, the fortress is located 5 km southwest of Ünye, on top of a 300 m wide outcrop on the side of the Ünye River (de Jerphanion, 1928: 40, nr.29). Fortress is generally identified with Chabakta.

The south and east sides of the outcrop are very steep. Hamilton stated that on the south side, in the face of a smooth perpendicular rock, about fifty feet from the bottom, there is a very remarkable cave or entrance cut in the solid rock, so as to represent the façade of a Greek temple, with its pediment and architrave (Hamilton, 1847: 47). He also mentions the tunnel structure (H. 3.00 and W. 2.75 meters) where the 45 degrees inclination that were cut very straight but have been eroded (Hamilton, 1842: 278). 45 steps of the tunnel with each 0.25m depth in tread are visible (Bryer and Winfield, 1985: 104; von Gall, 1967: 515). This second tunnel that looks structurally more impressive than the other tunnel has been carved into the rock with a 65-70 degrees inclination. The entrance is 3.05 meters wide (Bryer and Winfield, 1985: 104).[12]

General view of the fortress

[12]When indicating the depth of the tunnel, Bryer says that in 1963 it took over fifty seconds before a stone falling down apparently reached the debris below, and in 1971 fourty-four seconds. (Bryer and Winfield, 1985: 104).

There are two Paphlagonian type rock cut tombs in the fortress. The first one is located approximately 7 meters high, on the left side of the entrance gate and consists of two rooms (Özsait, 2008: 296). In the front room the visible *triglyph* and *metope* parts of the pediment was crowned with *acroters* with eagle reliefs on both sides and the middle. The eagle on the right side was made with very high quality workmanship with its wings open. The second tomb is located 3 meters high off the ground on the south face of the fortress.



The tomb room is in the form of a rectangle with dimensions 190x240 cm and with a cradle vault ceiling. Inside the tomb room there are *kline*s. The Paphlagonia style rock tombs found in this fortress are the most eastern examples in the Pontos region. This tomb was also used during the Byzantine period. Some of the vibrant colored frescos inside the tomb are still in good condition. The *arcosolium* is located on the north, where late periods of occupation occurred. It is 160x225 cm in size, 40 cm in depth, rectangular. The tombs in the Ünye fortress are dated to Late Hellenistic-Early Roman periods (Kumandaş, 2004: 32-33).

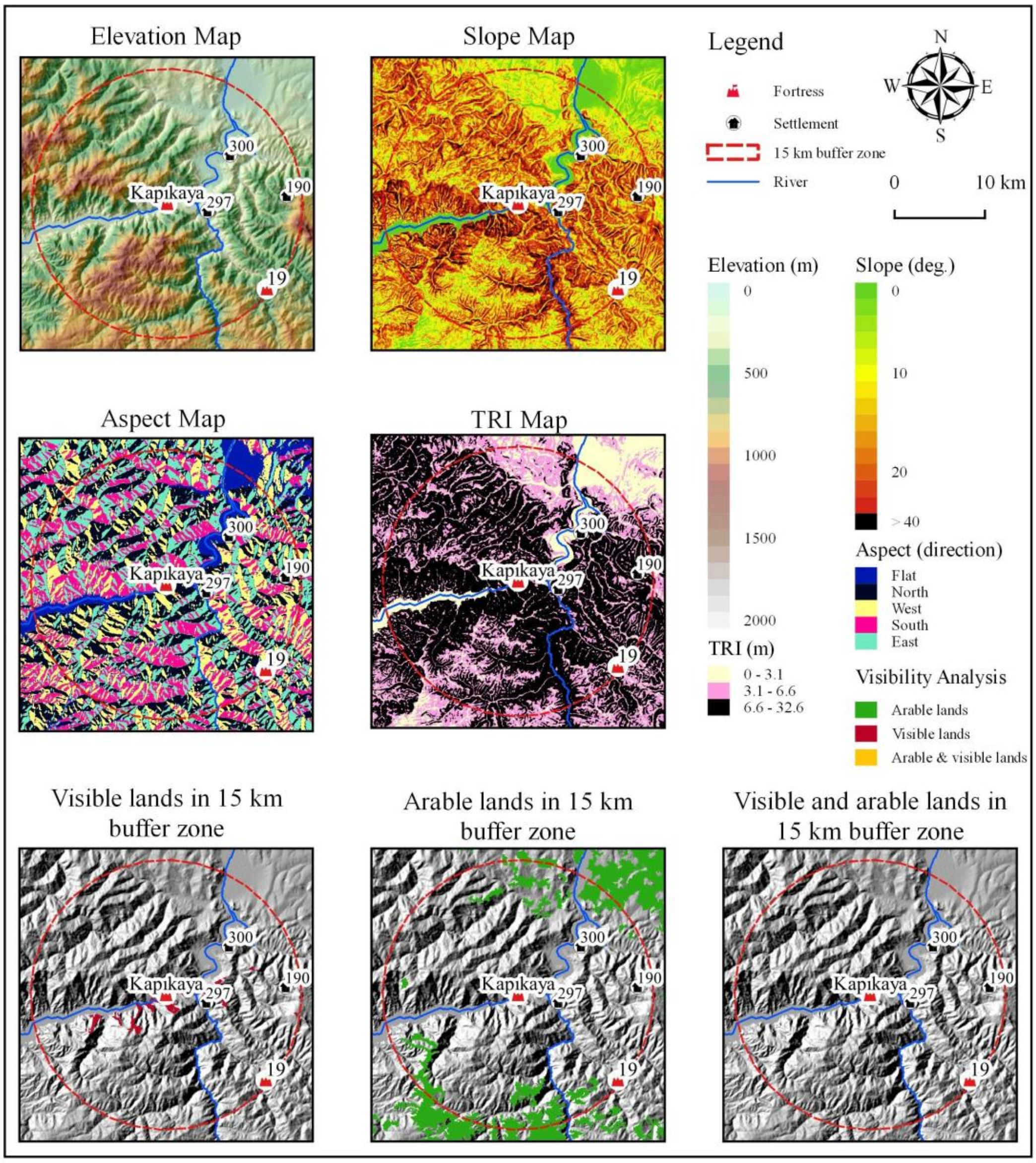
The fortification wall indicates that the fortress has been used in various periods. Especially on the east side of the fortress, it is possible to see the signs of Hellenistic period ashlar masonry.

Rock-cut tunnel

Fortress is located in a rough topography, overlooking the valley lies on the northeast. It primarily served a defensive function as it is situated in a narrow valley. If Chabackta identification is correct this fortress frequently minted coins in Mthradates VI. This could imply its administrative function (Wilson, 1960: 199). However in topographical terms, fortress is a defense unit.

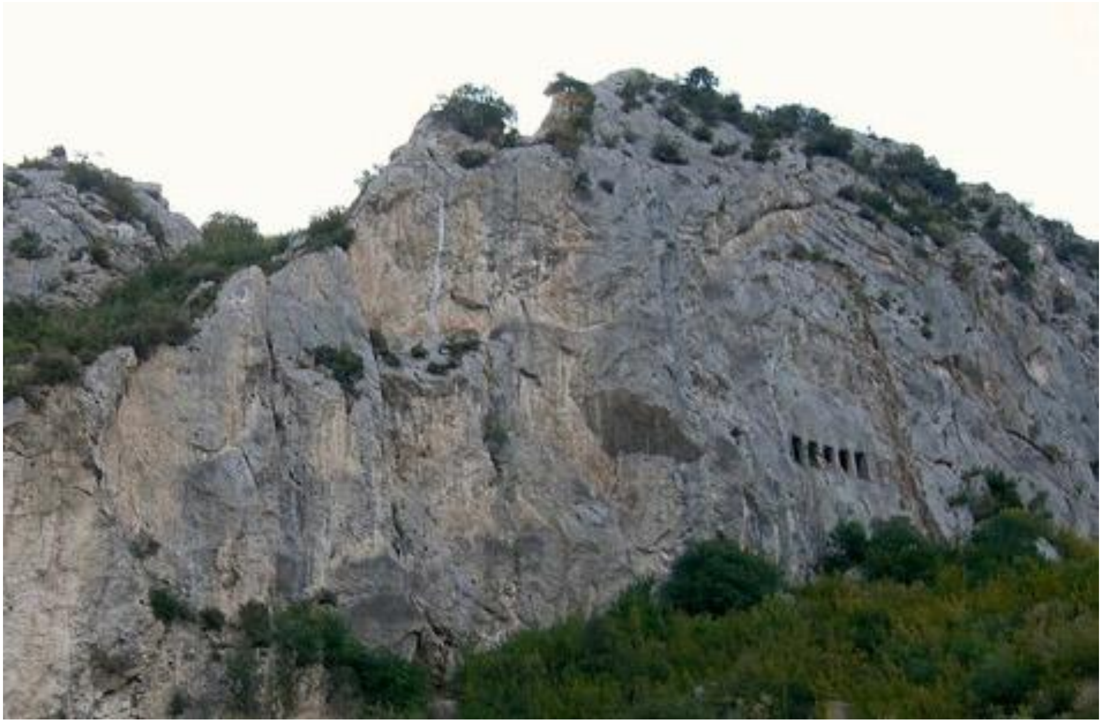
ID:022 - Kapıkaya-Asarkale

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	1.4	**Dating**	HL/BYZ/OTT
Location		**Projection**	UTM WGS84 36N
Province	Samsun	**Easting, m**	731165
County	Bafra	**Northing, m**	4583728
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	130 m	**Visible area**	1.4 %
Slope	26.7°	**Arable area**	5.5 %
Aspect	South	**Visible & arable area**	0.0 %
TRI	13.4 m	**Median TRI**	8.3 m



Description

Kapıkaya is located in the valley of Kızılırmak, 3 km west of the Asar village in Bafra. Studies were conducted by Ö. Bilgi's team in 2001. The fortress was evaluated as a fort-settlement that was built to control the Kızılırmak valley that connects Bafra to the inner regions of Anatolia (Bilgi et al, 2001: 41). Access to inner region was provided through the Kızılırmak valley by river transportation. Therefore this must have been a fortress that controls the river traffic. The fortress was built on the steep outcrop. The orientation of the fortress is southwest of the valley. The cliff has been terraced with steps and fortification wall sits on these steps. The wall at the lower altitude was built with ashlar masonry and is dated to the Hellenistic period. In addition to this wall, there is an outer fortification wall built during the Byzantine period. The inner wall has two gates, on the east and the west. The eastern gate is also a passage between the two walls (Bilgi et al, 2001: 42). No fortification wall need on the north and northeastern sides because of the steep slope. In addition to these walls, there is a rock cut tunnel goes down to which was once a river, now a road.

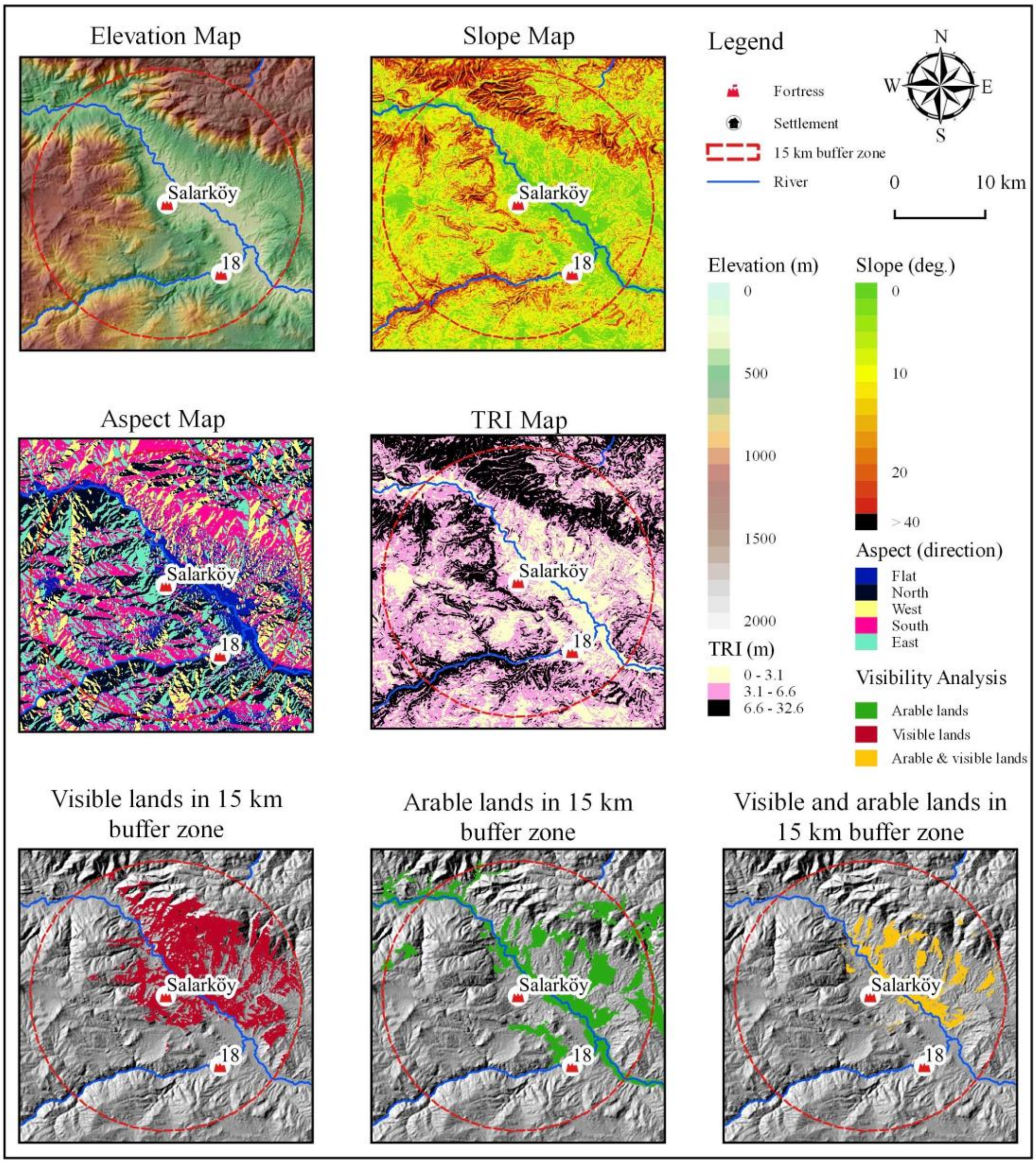


North facade of the fortress

From the fortification walls we have been able to get detailed information on the periods of the fortress. The ashlar masonry on the fortification wall can be tracked on the east of the tower located on the southwestern corner of the fortress and it is dated to the Hellenistic period (Bilgi et al, 2001: 43). This wall masonry can be found on the west section of the inner wall and the north side of the western gate to the inner wall. Some part of the inner wall, the mortar and brick usage reveals the Byzantine period. The pottery data collected by the survey team is dated to Hellenistic, Byzantine and Ottoman periods (Bilgi et al, 2001: 43).

Rock-cut tunnel reach to road (formerly river)

ID:024 - Çürük			
Ancient Name(s)	Pleuramis	**Proposed Function**	ADM
Size of Fortress, ha	0.40	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Yozgat	**Easting, m**	719437
County	Çekerek	**Northing, m**	4437481
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1057 m	**Visible area**	10.7 %
Slope	12.0°	**Arable area**	26 %
Aspect	North	**Visible & arable area**	3.8 %
TRI	7.6 m	**Median TRI**	3.5 m



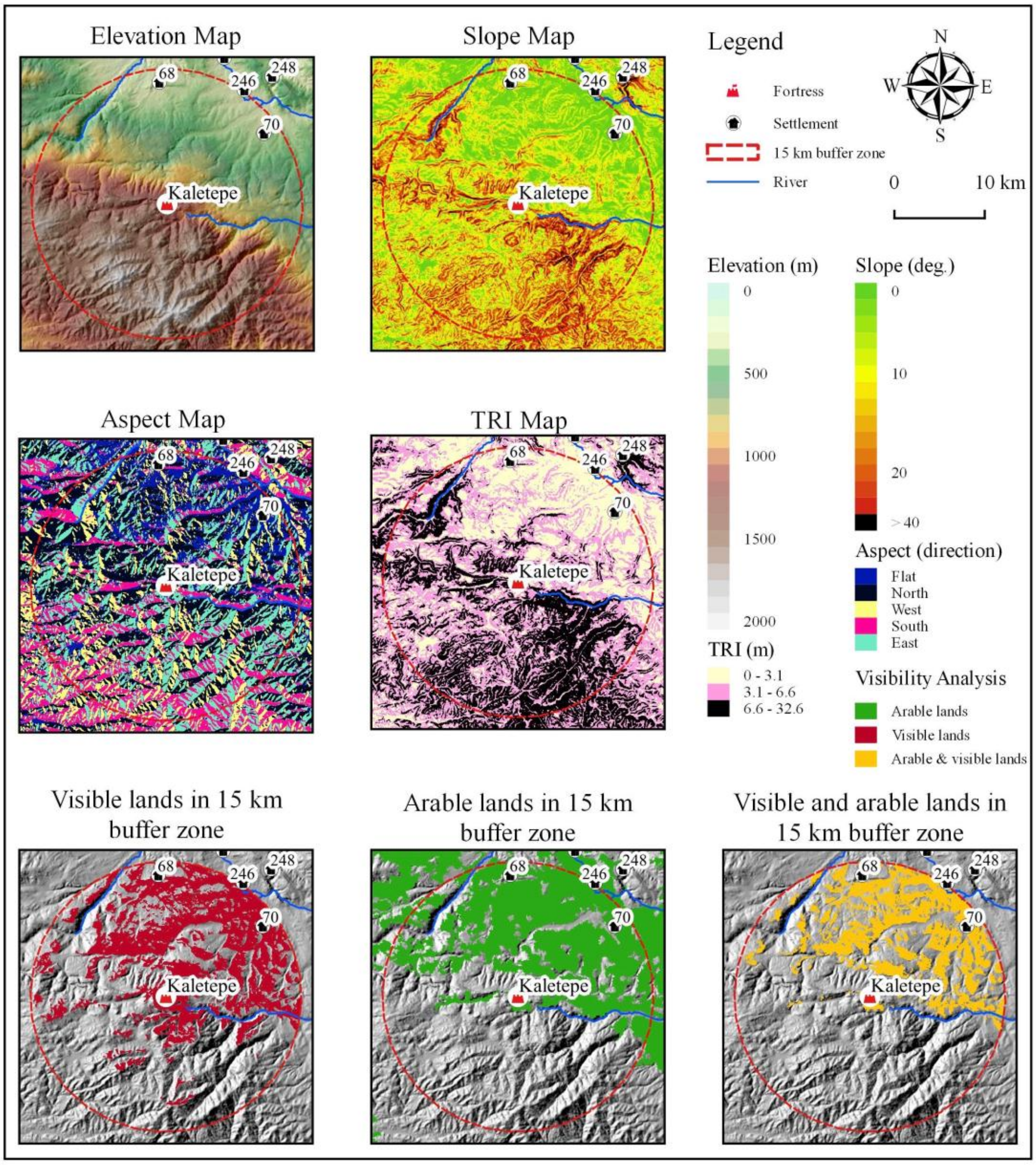
Description

It is located on an outcrop that is approximately 80 meters above Scylax River on the Tokat-Yozgat highway across the Gönülyurdu village (Çürük Köy) of Çekerek in Yozgat. Settlement surrounding the outcrop spreads across an area of about 4.5 hectares. Anderson identified Çürük Köy as the ancient Pleuramis. von Gall visited the fortress and recorded the rock cut tunnel and dated to the Hellenistic period (von Gall 1966: 514) Anderson also mentioned a fortified acropolis and Byzantine building remians (Anderson, 1903: 45). Moreover, Pleuramis was mentioned as a settlement that was in Pontus Galaticus, on the eastern border of the Pontos during the Roman period. In terms of its commanding position near the Scylax (Çekerek) River, fortress could bear administrative function.

Outcrop where the fortress located and its vicinity

ID:025 - Kaletepe-Sagylion

Ancient Name(s)	Sagylion	**Proposed Function**	ADM
Size of Fortress, ha	1.9	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Samsun	**Easting, m**	698614
County	Vezirköprü	**Northing, m**	4547925
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1346 m	**Visible area**	23.2 %
Slope	26.6°	**Arable area**	27 %
Aspect	South	**Visible & arable area**	15.1 %
TRI	12.8 m	**Median TRI**	4.6 m



Description

In the vicinity of Vezirköprü, Hamilton visited the Yan or Iyan kale outcrop that is located inside the forest and it was stated to be the highest point of the region, called Sagylion by Strabo (XII.3.38). The fortress is dominating the valley called Phazemonitis, taken its name from the settlement Phazemon. The remains of this settlement, according to the pre assumptions of survey team, who recently have been conducting a research around the Oymaağaç Mound, must be under the Oymaağaç village. A Mithradatic coin can be considered to be the first evidence that have been found in the necropol area of the mound.[13] Munro also states that Sagylion is located in the Phazemon territory, at a high altitude on the Tavşan Mountain (Munro, 1900: 442).

A general view of the fortress

[13] http://www.nerik.de/downloads/Oymaagac_2009_Arbeitsbericht_2009.pdf

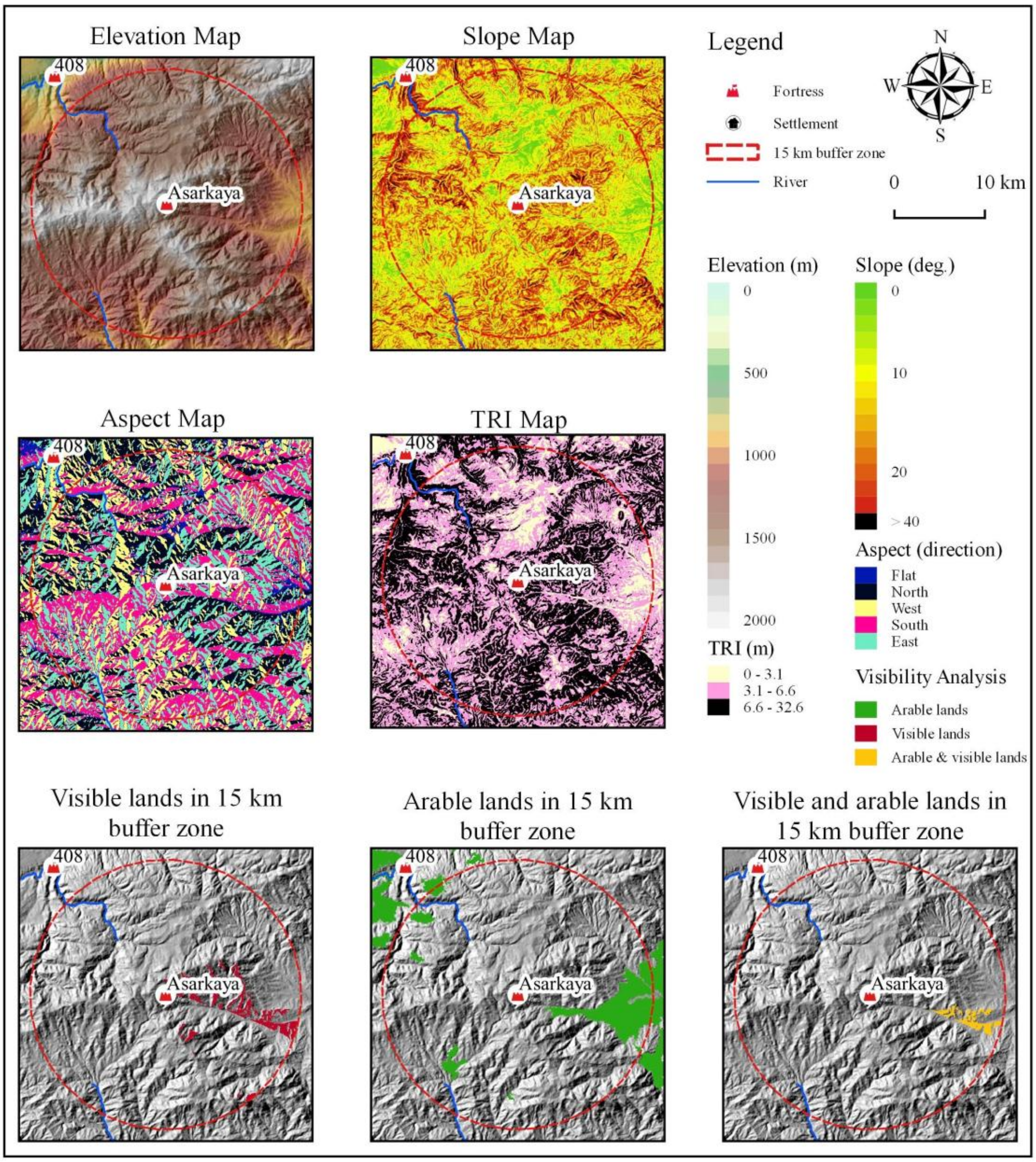
In his accounts for Sagylion, Strabo makes mention of an abandoned water source which is thought have been useful for many purposes to the Mithradatids. In his account Sagylion, at the time was taken by kings Polemon and Nicomedes who deliberately made Arcaces starve and force him to flee to the mountain without any provision where he discovered this water source choked up by huge rocks with order of Pompey (Strabo, XII. 3.38). The visible remains of fortification wall present at least two building period, Hellenistic and Byzantine (Olshausen and Biller, 1984: 63). Olshausen and Biller belive that the fortress was no longer used till to Byzantine Period after the reorganisaiton of Pompey.

Fortification wall on the south side of the fortress

It can be said that Sagylion fortress monitors other small settlements in Phazemon and Phazemonitis plains. As Hamilton states that the parts of the east-west trunk road was passed in Phazemon’s borders. (Hamilton, 1842: 329). Therefore, fortress also monitors the road as well. This statement also supported by analysis, its visibility coverage considerable high and reaches to the many agricultural fields in Phazemonitis.

ID:026 - Asarkaya

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.6	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	602872
County	İskilip	**Northing, m**	4521903
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1706 m	**Visible area**	2 %
Slope	19.0°	**Arable area**	5 %
Aspect	East	**Visible & arable area**	0.6 %
TRI	8.9 m	**Median TRI**	6 m

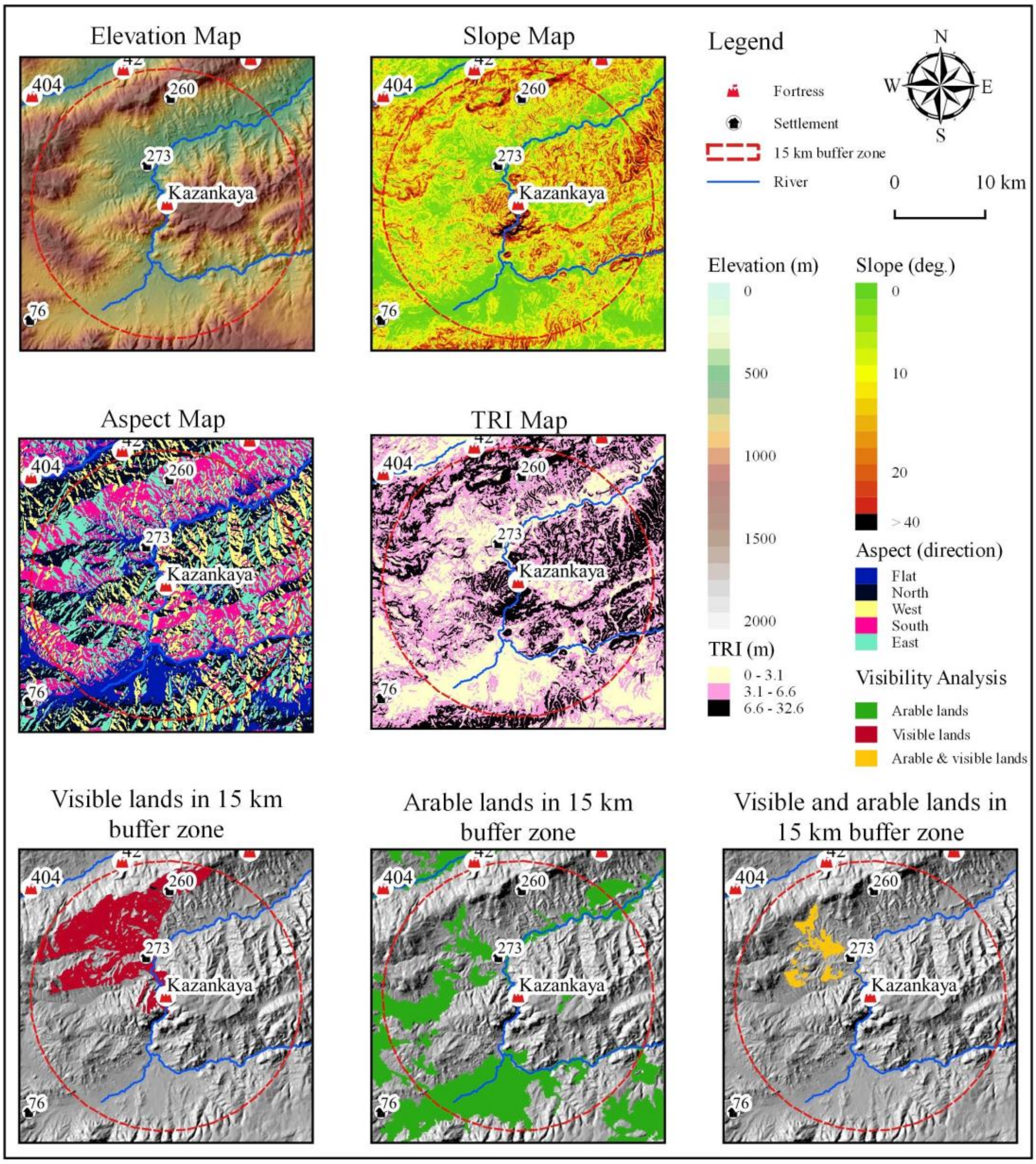


Description

It is located on an outcrop, west of Sorkun village of İskilip in Çorum. The fortress can be reached after a 1.5 hours climbing. At the slope of the outcrop course-ware pottery sherds were observed. On the north side of it, there is a rock-cut tunnel with ordinary carved steps that have been badly eroded. The bottom of the tunnel reaches the spring. At the summit, there are remains that might belong to a watchtower. As well as being a control point, the fortress must have been used as a signaling station considering its elevation and position.

Construction remains on top of the fortress and a view to valley that connects to the Amnias

ID:027 - Kazankaya			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.9	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Yozgat	**Easting, m**	699258
County	Aydıncık	**Northing, m**	4458817
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	643 m	**Visible area**	11.5 %
Slope	28.4°	**Arable area**	14 %
Aspect	North	**Visible & arable area**	1.6 %
TRI	10.3 m	**Median TRI**	4.5 m



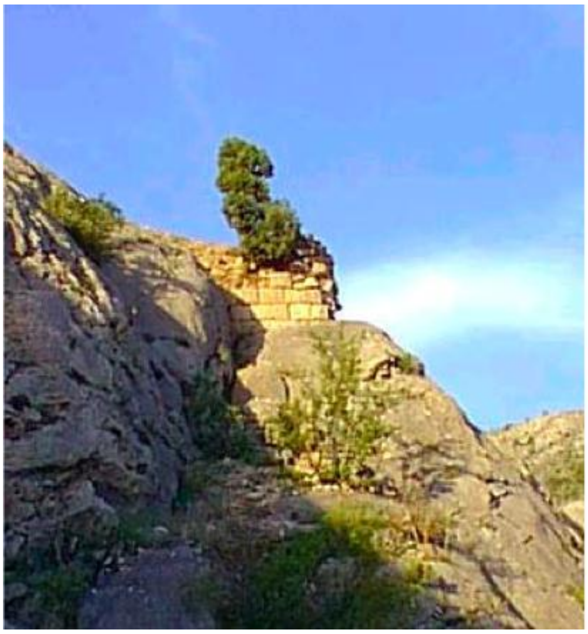
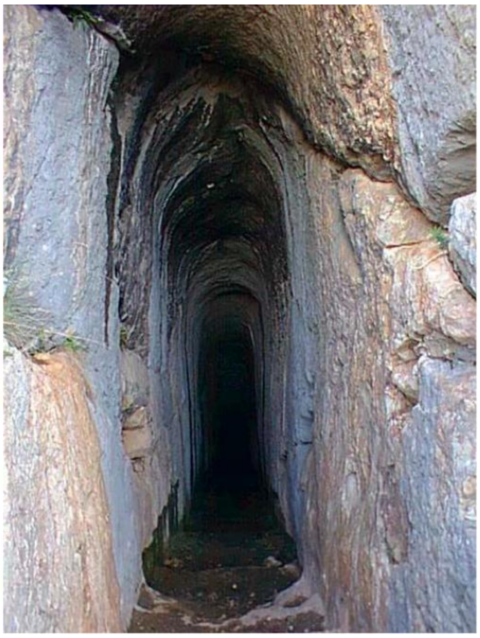
Description

The fortress is located on the limestone outcrop, towards the top of the Kazankaya Canyon in the Alan Mountain on the border between Çorum and Yozgat in the Kümbet plain (Atalay and Ertekin 1986). The Scylax (Çekerek) River runs inside the valley and waters this plain. Fortress consists of similar elements like the others. Survey team from METU in 1998 reported that rock cut tunnel and small tower are dated to the Hellenistic Period. Steps of the tunnel, at the entrance are carved very straight cuts into the rock while the rest are very low and irregular (Özcan et al, 1999: 213).

The assumption is that the constructers started carving the limestone and suddenly came across volcanic rock, which led to irregularities in the tunnel (Özcan et al, 1999: 214). Thus the tunnel (H. 3.00 and W. 1.50 meters) was left unfinished and did not reach the water.

Another important feature is a female relief with 3 meters high at the west side of the river dated to the Hellenistic period.[14] Summerer believes that the female figure can identify with goddess Anaitis (2014: 206). She also thinks that the Kazankaya canyon as a whole is considered to be a natural sanctuary with other components such as rock-cut tunnel and steps carved on the slopes (Summerer, 2006: 28-29).

[14]Çorum Museum Inventory, 2008: 161

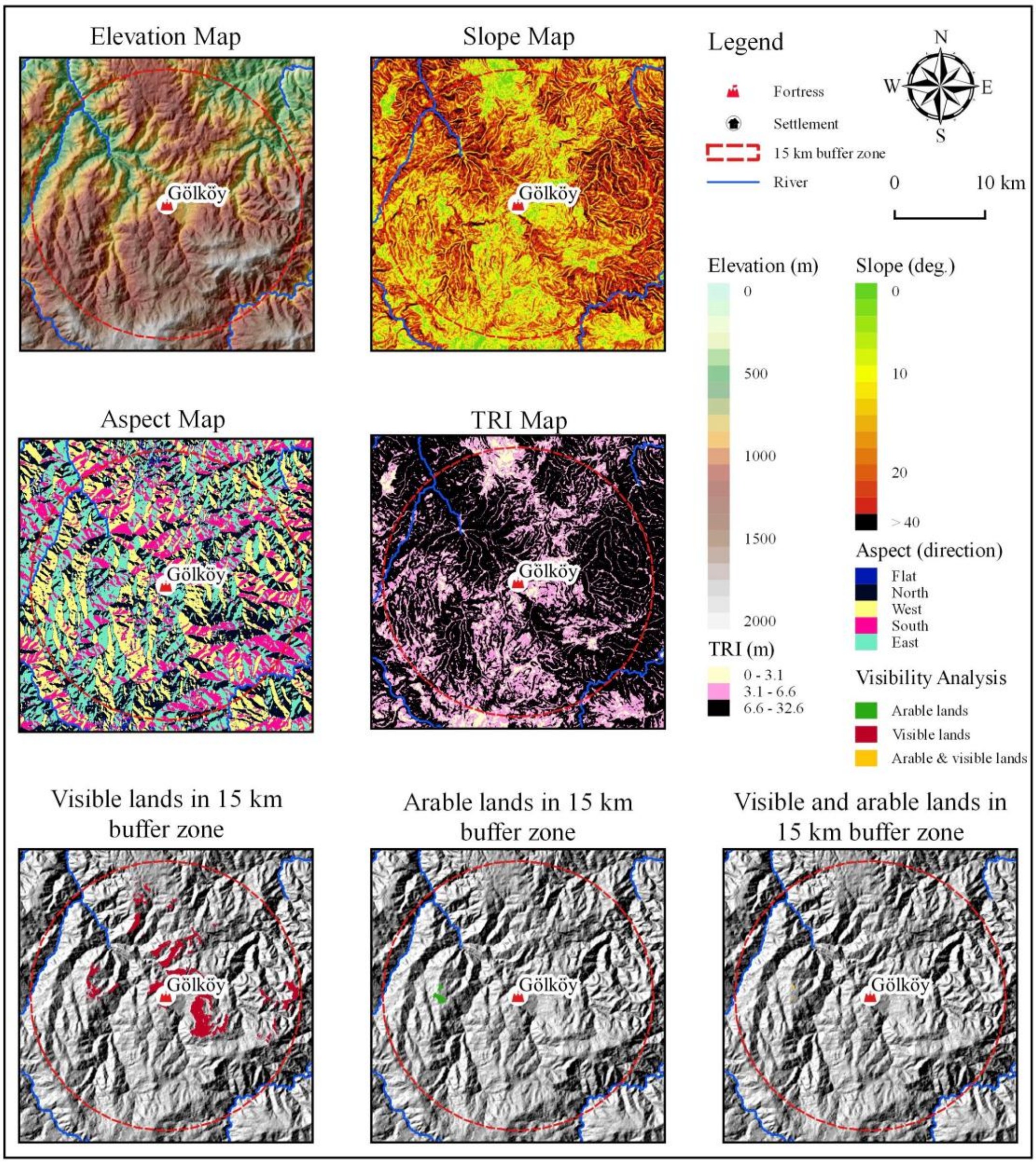
Hellenistic Tower structure Rock-cut Tunnel (photo by G. Summers

Pieces of mortar and tiles on top of the outcrop indicate later periods of activity. The surveyors think that this is a Pontic fortress and were designed to protect the pass located on top of the eastern bank of the Kazankaya Canyon. The idea of building a strong fortress to protect the pass was abandoned when it was understood that fresh water could not be stored.[15]

Since the Kazankaya is a rocky outcrop through which the Scylax River is running, It can be thought as a control point that secures the canyon.

[15]http://kerkenes.metu.edu.tr/kerk2/17downlds/reportPdf/1998kreptr.pdf, Özcan M, G. Summers, F. Summers, 1999. 1998 yılı Kerkenes Dağı Projesi ¨*17. Araştırma Sonuçları Toplantısı II. Cilt.* Ankara 211-228, (213-214)

ID:029 - Gölköy			
Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.8	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Ordu	**Easting, m**	380761
County	Gölköy	**Northing, m**	4505248
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	995 m	**Visible area**	3.9 %
Slope	25.9°	**Arable area**	0.1 %
Aspect	North	**Visible & arable area**	0.02 %
TRI	13.7 m	**Median TRI**	8.3 m



Description

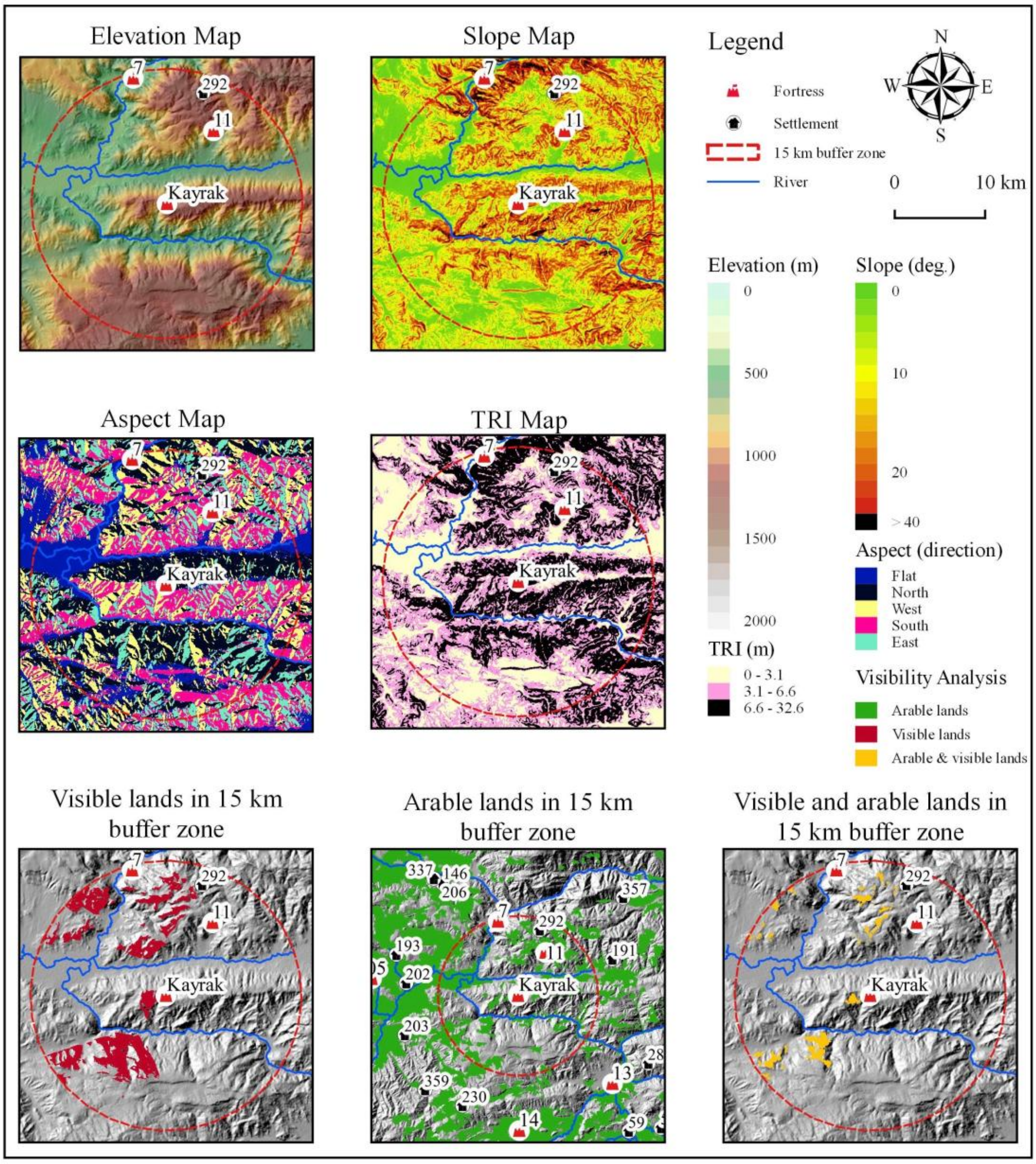
Gölköy fortress is located on the Aybastı Road. The fortress is located in a controlling position over the road from Polemonion to Nicopolis. Bryer and Winfield think that this is the Byzantine site Sauronisena (Bryer and Winfield, 1985: 116). The fortress lays on the massive granite rock block that sees the valley on its east. Fortification wall surrounded the fortress where the topogragraphy is not steep. It is date to Hellenistic and Byzantine period. The rock-cut tunnel (H. 5.5 and W. 3.5 meters), which is situated west and northwest side of the fortress, is possible reach the river. The tunnel has roughly vaulted archway and large arched niche (Bryer and Winfiled, 1985: 117). Fortress is located on a rough landscape, sits inside a narrow valley that eventually leads to Lycus valley and keeps the road comes from the coast line under its control.

A view of fortress from West

Rock-cut tunnel

ID:030 - Kayrak

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.9	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Amasya	**Easting, m**	743725
County	Center	**Northing, m**	4490532
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1093 m	**Visible area**	6.7 %
Slope	13.2°	**Arable area**	19 %
Aspect	West	**Visible & arable area**	1.7 %
TRI	5.7 m	**Median TRI**	5 m



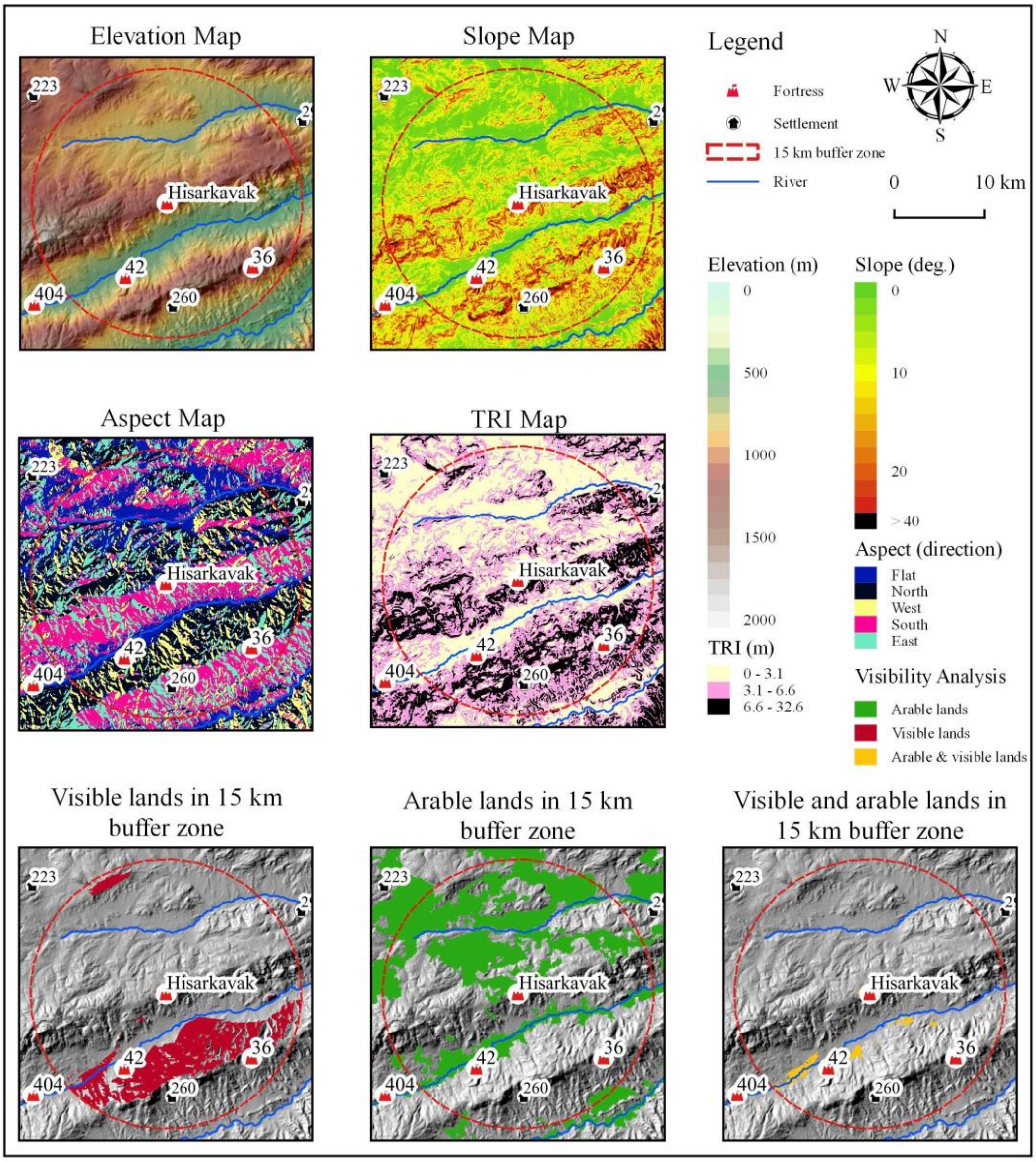
Description

Located at the Al Kayası area of the Kayrak village of Amasya, the fortress lays on an outcrop. It is surrounded by fortification wall dated to the Byzantine period. On top of the fortress there is a rock cut tomb and two cisterns carved into the rock 20-30 meters above the tomb. The fortress has a very commanding position over the valley and it is dated to the Hellenistic period based on pottery sherds and typical rock cut tunnel. The fortress has been listed in Amasya Cultural Inventory in 2007. There is no other information on the fortress except for the inventory provided by the museum. (Amasya Museum Inventory, p.73). Its commanding position to the valley and agricultural lands is labeled this fortress as administrative purpose.

A view of outcrop where the fortress sits on

ID:031 - Hisarkavak

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	1.3	**Dating**	CHAL/EBA/HL
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	697438
County	Mecitözü	**Northing, m**	4481895
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1091 m	**Visible area**	9.9 %
Slope	9.7°	**Arable area**	24 %
Aspect	West	**Visible & arable area**	1 %
TRI	4.4 m	**Median TRI**	3.9 m



Description

Kaletepe is located 2.7 km south of Hisarkavak village in Mecitözü, Çorum. The fortress is approximately 100 m above the ground level, sits on an outcrop. During my visit I did not come across any marks of a fortification wall surrounding the fortress. On top of the outcrop there are marks of rectangular buildings carved into the rock. On the very steep western slope, there is a rock-cut tunnel. On the left wall of the entrance to the tunnel there is a damaged niche of 40 x 60 cm size with a round arch with a pediment.

A view from South

The tunnel structure continues on the right and left directions towards the middle. The left side is full of rocks and debris. The right side of the tunnel has been emptied by illegal excavators. Round vaulted on top, this tunnel has 2 meters of average height and 1.5 meters width. The revealed section has 145 steps. The height of these steps vary between 30 and 40 cm with an approximate gradient of 50 degrees, the tunnel goes down with two right turns and ends with a water filled narrow reservoir at the bottom. At the first turning point of the tunnel, there is a niche on the left wall on the way down. However, it has been damaged by illegal excavations.

Rock-cut tunnel and end of the tunnel reaching to reservoir (Çorum Museum Archive)

Another tunnel is located northwest of the fortress and it reaches to bottom of the outcrop. There aren't any material culture elements found on the outcrop while a high density of pottery sherds dated to Chalcolithic, Bronze Age and generally Hellenistic period are found in the fields below. Hisarkavak fortresss is located north of Göynücek Valley, its ancient name is not certain (Babanomon?). The area that offers a high density of ceramic findings on the fields surrounding the outcrop is about 20 hectares.

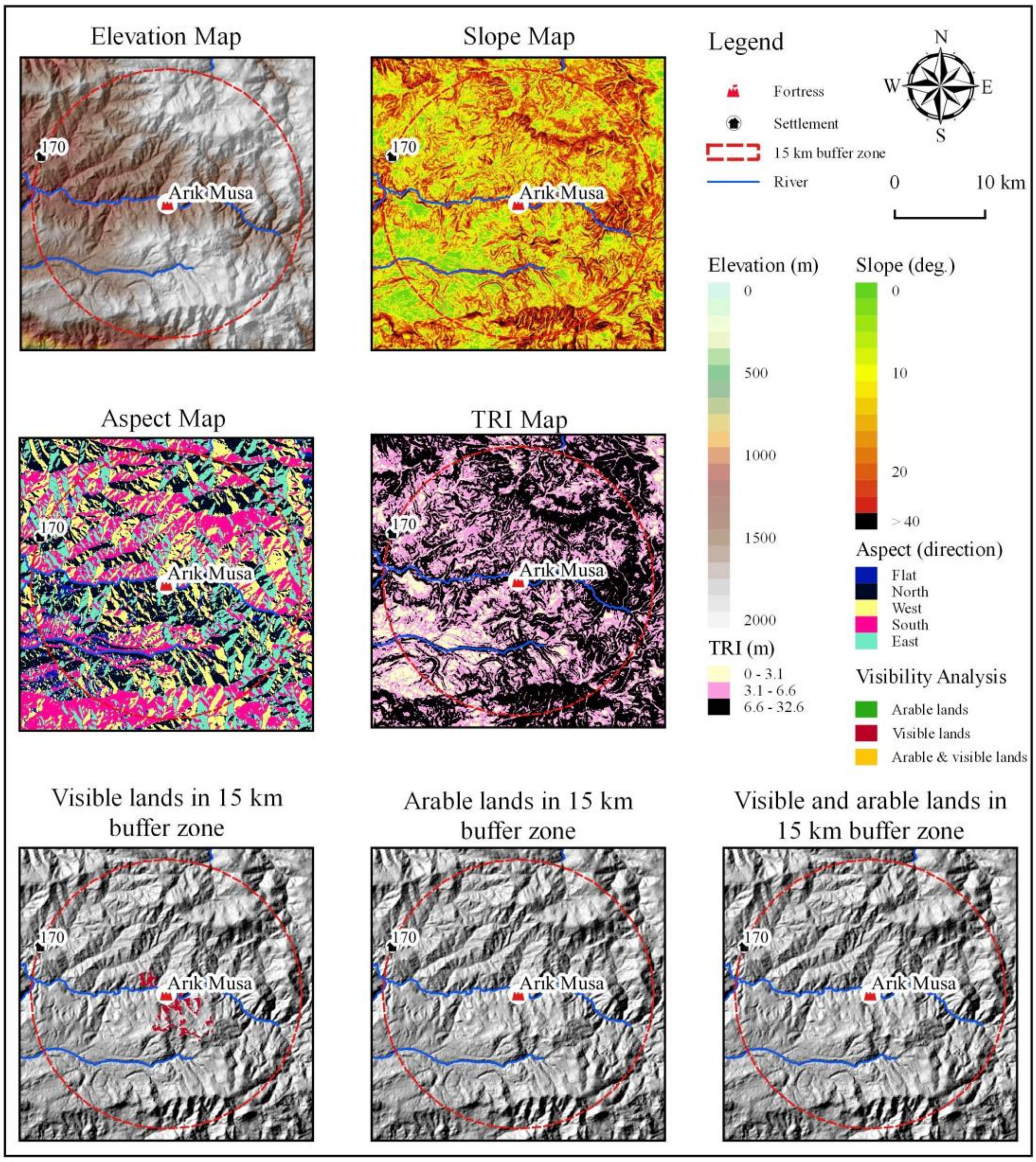
Hisarkavak fortress controls the Göynücek Valley, and most of the agricultural fields of the valley.

Niche on the left side of the tunnel

Göynücek valley from the fortress

ID:032 - Arıkmusa

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.7	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Ordu	**Easting, m**	407640
County	Mesudiye	**Northing, m**	4478003
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1254 m	**Visible area**	1.1 %
Slope	6.4°	**Arable area**	0 %
Aspect	South	**Visible & arable area**	0 %
TRI	3.3 m	**Median TRI**	6.6 m

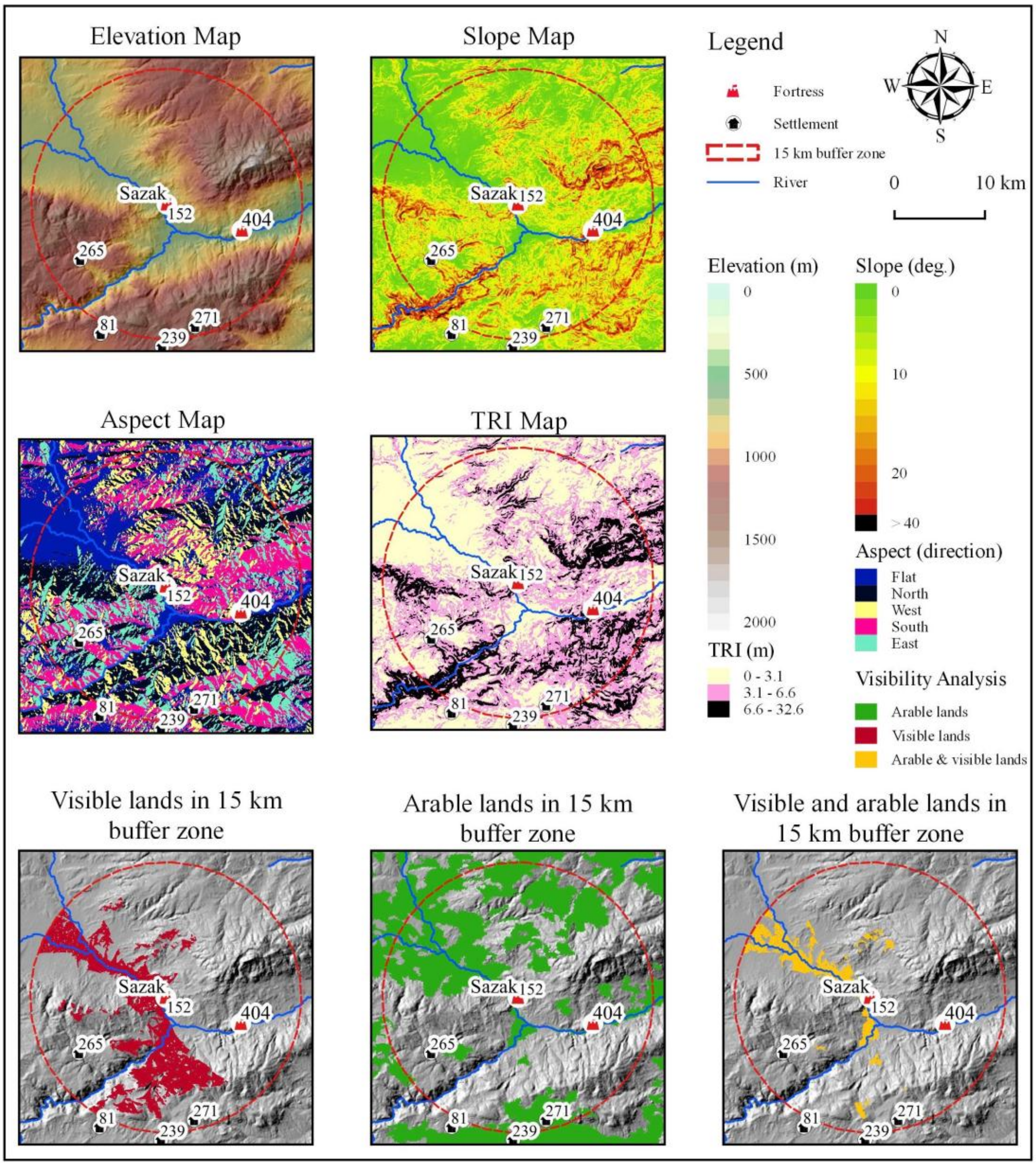


Description

The fortress built on an outcrop which 10-12 meters high form the river-bed in Arıkmusa village of Mesudiye in Ordu. It was recoded by Özsait during his surveys in the region (Özsait, 1993: 286). However, he did not provide detailed description about the fortress. The outcrop is 160 meters wide northeast to southwest and 50 meters wide west to east. There are two rock-cut tunnels in the fortress going down to the Melet River. This fortress shares similarities with Esatlı and Gölköy fortresses. It is located in a smaller valley that is parallel to other two fortresses. This valley leads to Lycus valley. It is inferred that function of these three fortresses is to keep the valleys that leads to Lycus under control.

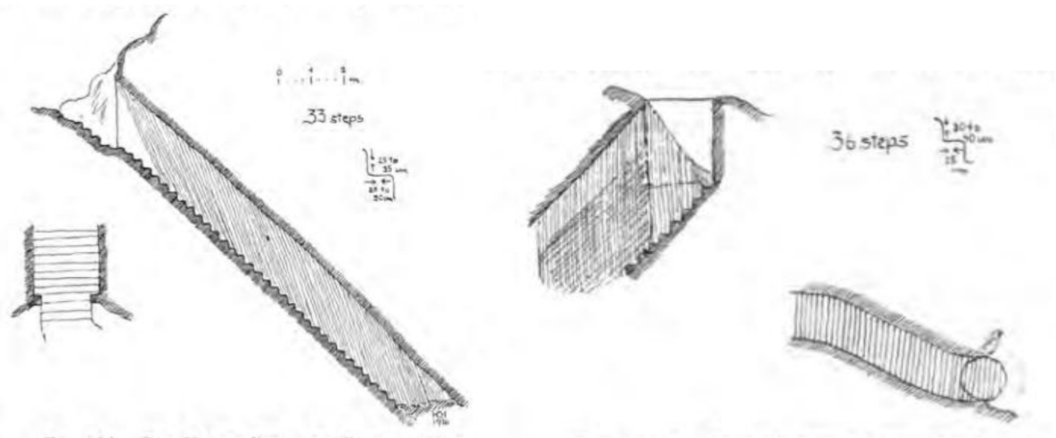
Outcrop from the south

ID:033 - Sazak			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	1.6	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	675076
County	Merkez	**Northing, m**	4472042
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	794 m	**Visible area**	11.9 %
Slope	22.6°	**Arable area**	23 %
Aspect	West	**Visible & arable area**	4.3 %
TRI	10.2 m	**Median TRI**	3.4 m



Description

It is located at approximately 200 meters altitude on the cliff across from Sarılık village, just before the Saçayağı region where Çorum River flows (Yıldırım and Sipahi, 2004: 306). There are rock cut steps over the surface that allows an easier to climb on the outcrop. There are also rock cut structures on top of the fortress. The rock cut tunnel is 45 degrees inclination and about 10 meters deep, 2.45 meters wide and 2.77 meters high. There are about 36 steps reaching to the rubble fill. The width of the steps is 25 cm and height is 28 cm. Another tunnel is located on the west side. According to Atalay there are 26 steps in this tunnel, von der Osten counted 33 steps (1929: 126). During my visit, 22 steps can be counted. The length of the tunnel is 1.5 meters. Both the height and width of the tunnel are about 2 meters. Another tunnel on the northern side is 2.5 meters high and 1.3 meters wide. The number of visible steps is 16 (Atalay, 1986: 64 and my personal observation), however von der Osten recorded 36 steps during his visit (1929: 126). On top of the fortress there is flattened platform and several post holes possibly used for wooden construction. Mostly Byzantine period wall remains and pottery sherds were observed during the my visit.

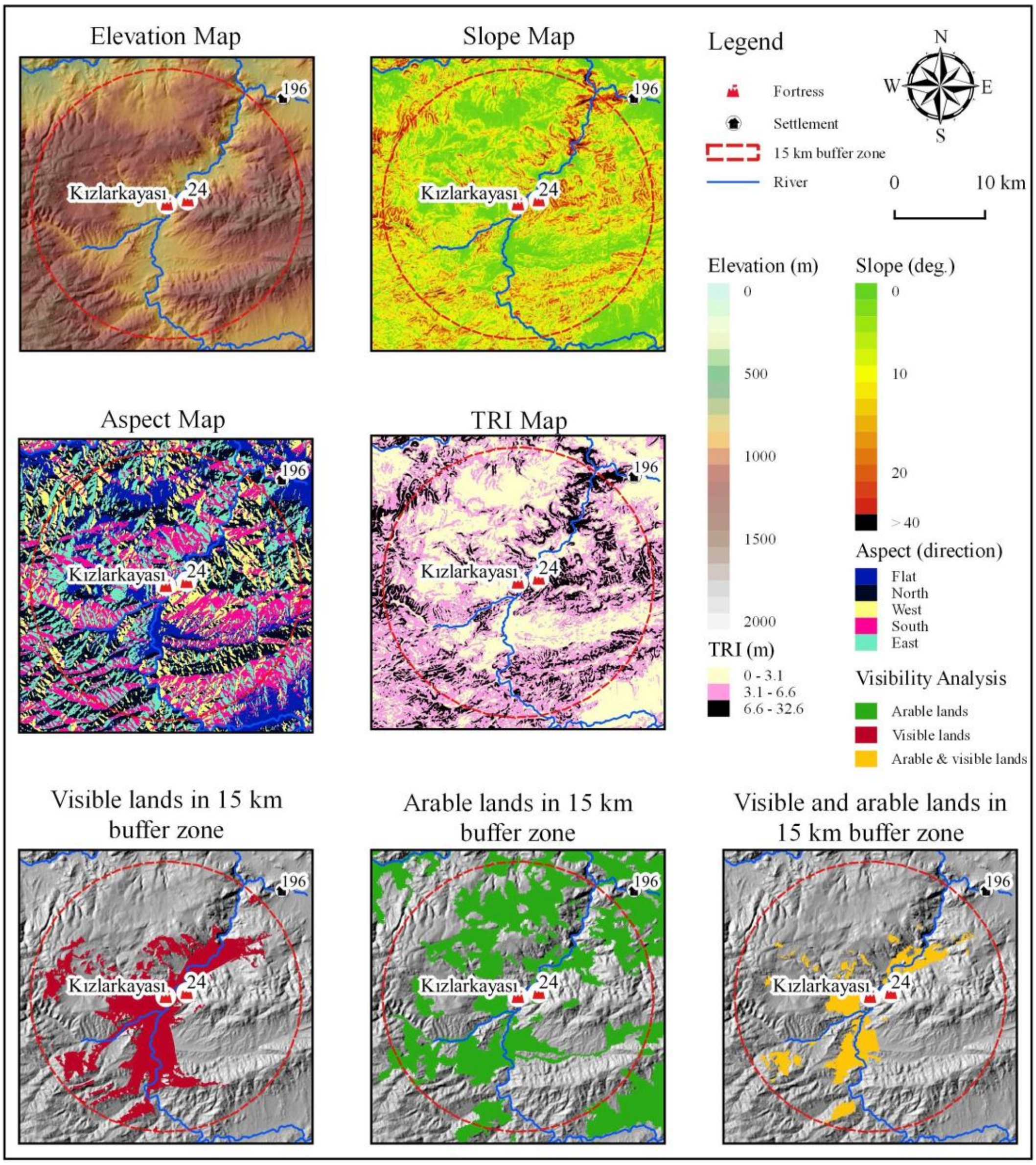


Section plans of the two tunnels at Gümüşlü Kale drawn by von der Osten (1929: 126-7).

Fortress positioned on a outcrop was to practice surveillance on the plain. Visibility results of it reveal that the agricultural areas mostly under control. Due to the analysis, It can be suggested that the fortress had administrative function.

A view from the fortress (Çorum Museum Archive)

ID:034 - Kızlarkayası			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.8	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Yozgat	**Easting, m**	717162
County	Çekerek	**Northing, m**	4436882
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	903 m	**Visible area**	16.1 %
Slope	4.2°	**Arable area**	22 %
Aspect	West	**Visible & arable area**	0.1 %
TRI	2.3 m	**Median TRI**	3.6 m



Description

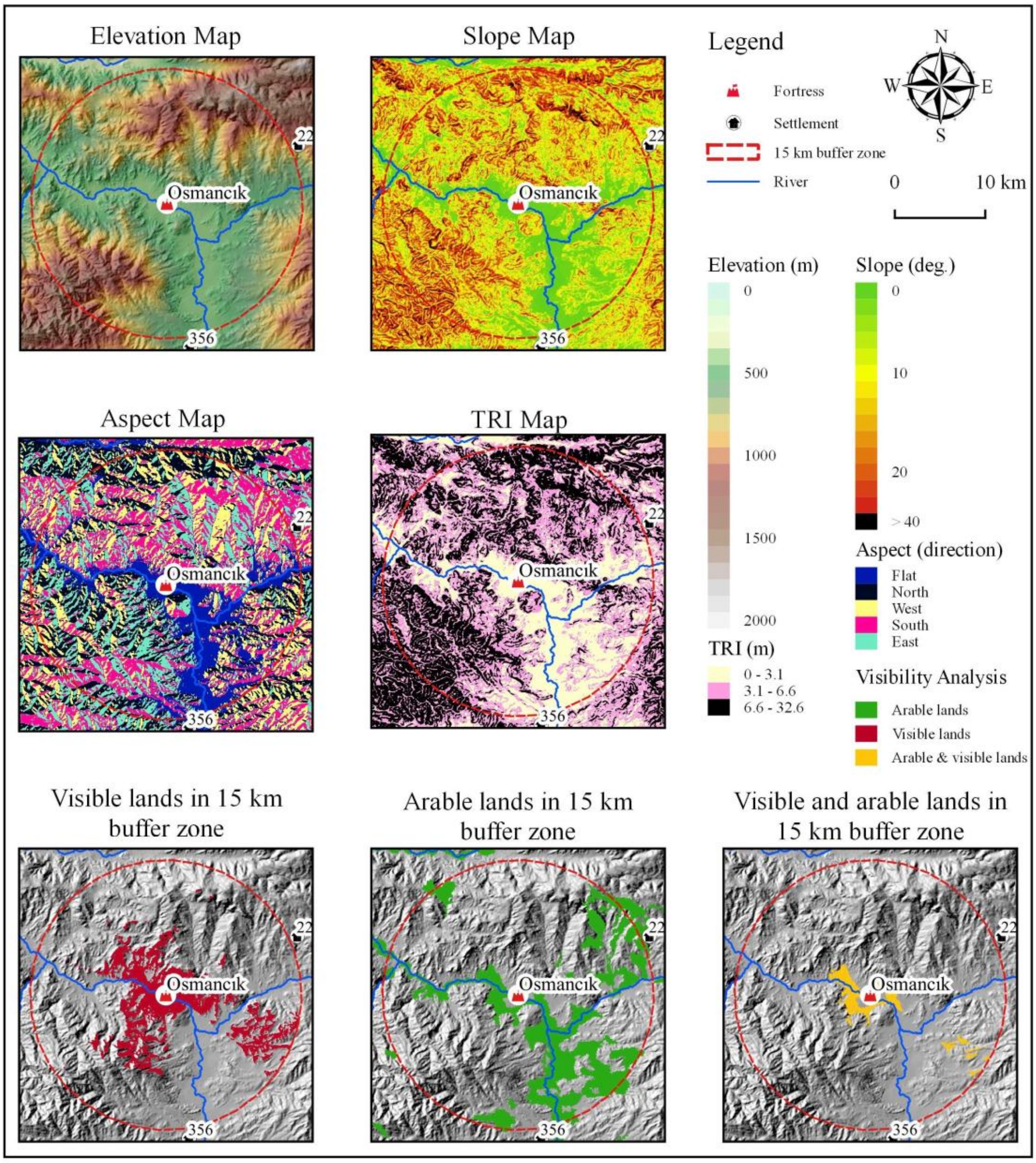
Located in Yozgat/Çekerek, on the Çekerek-Zile highway along the Scylax (Çekerek) River, the fortress is built on an outcrop that is about 10 meters above the river level.

Kızlar Kayası from the south

There is a visible rock tomb on the fortress, as well as a rock-cut tunnel (H. 2.50 and W. 2.00 meters).[16]. The tunnel is thought to go down to the Scylax River. Yozgat Museum, which conducted the survey, reported that Byzantine period pottery sherds, terracotta sarcophagus pieces are recorded.[17] The outcrop covers approximately 0.5 hectares of area. Rock-cut tunnel is somewhat elaborated in terms of labor. Fortress on the southwest edge of the kingdom might have been marking the border. When analysed in terms of function, the fortress seems to have had a defensive function.

[16]www.yozgatmuzesi.gov.tr
[17]www.yozgatmuzesi.gov.tr

ID:035 - Osmancık			
Ancient Name(s)	Pimolisa	**Proposed Function**	ADM
Size of Fortress, ha	1.7	**Dating**	HL/BYZ/SEL/OTT
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	651659
County	Osmancık	**Northing, m**	4537151
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	479 m	**Visible area**	10 %
Slope	8.2°	**Arable area**	15 %
Aspect	North	**Visible & arable area**	2.1 %
TRI	6.6 m	**Median TRI**	4.9 m



Description

If the localization is correct, Pimolisa is a fortress built on a rocky outcrop rising in the city center of Osmancık on the bank of Halys River.[18] The highest point of the rock is 60 meters above the river level. There is very little remaining from the fortress. Anderson who visited the fortress reports a fragment of wall with a solid gateway flanked by towers at the base of the hill on the river-front and another wall with triangular buttresses to fortify more accessible part of the outcrop (Anderson, 1903: 102). These ruins are dated to the Byzantine and Ottoman periods.

Fortress form north

Rock-cut tunnel which eroded to a great extent, is locating east side of the fortification wall and reaching to south bank of Halys with 30 degress inclination. Pimolisa is one of the royal fortresses (φρουρίου βασιλικου) of the Mithradatic Kingdom issuing coins. The land of Pimolisene was located on the slopes of the Pimolisa fortress, on both sides of the river. Strabo states that the district of Pimolisa

[18]Wilson thinks that Pimolisa is not Osmancık, it should be somewhere in the territory of Pompeiopolis, based on Strabo's accounts (Wilson, 1960: 209).

was once called Pimolisene which was situated next to Chiliocomon, in the northern part of the territory of Amaseia but extending to the River Halys (Strabo, XII.3.39). He also states that Pompeiopolis and mount Sandaracurgium[19] in this city is not far away from Pimolisa but in ruins at the time of this account is made (Strabo, XII.3.40). Ramsay regards the identification of Pimolisa in Osmancık by Kieperts as highly probable (Ramsay, 1890: 329). During Byzantine period especially in Kommennoi, the fortress could used as refuse in times of civil unrest (Crow, 2009:34). In Seljuk times, Karahisar-ı Osmancık, fortress served as an assembly point for the army. It also controlled the road that leads to east.

Rock-cut tunnel reaches to Halys

There is a rock-cut tomb situated on the north-west side of the fortress. It is rather plain and undecorated though it shares some similarities with other rock tombs in the region. Von der Osten drew a plan of it in 1926. It has an inelaborately constructed single room which is 4x2,5 m in width (1929: 120)

[19]As a consequence of mining activities, Mt. Sandaracurgium is hollowed out as workman excavated great cavities beneath it. These workman is also reportet to have regulary lost their lives as the air in the mines is both deadly and has hard to endure odour (Strabo, XII..3.40)

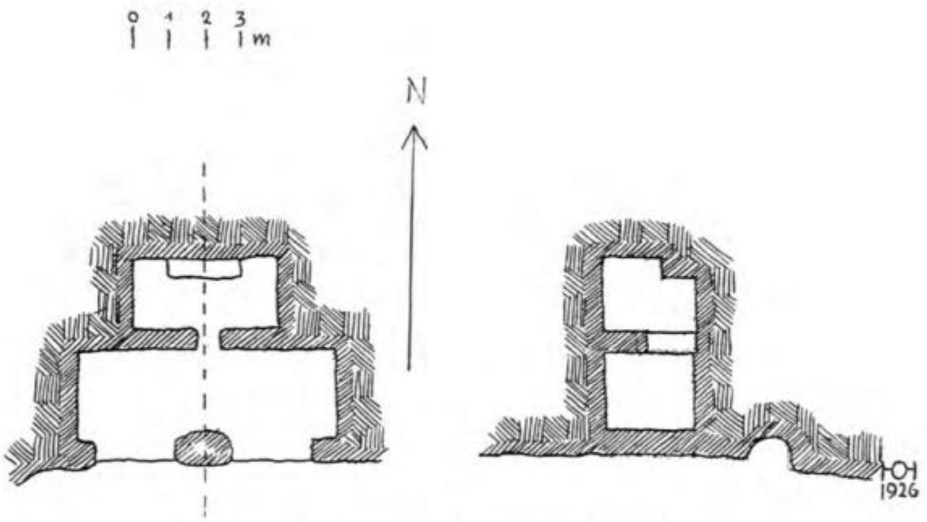


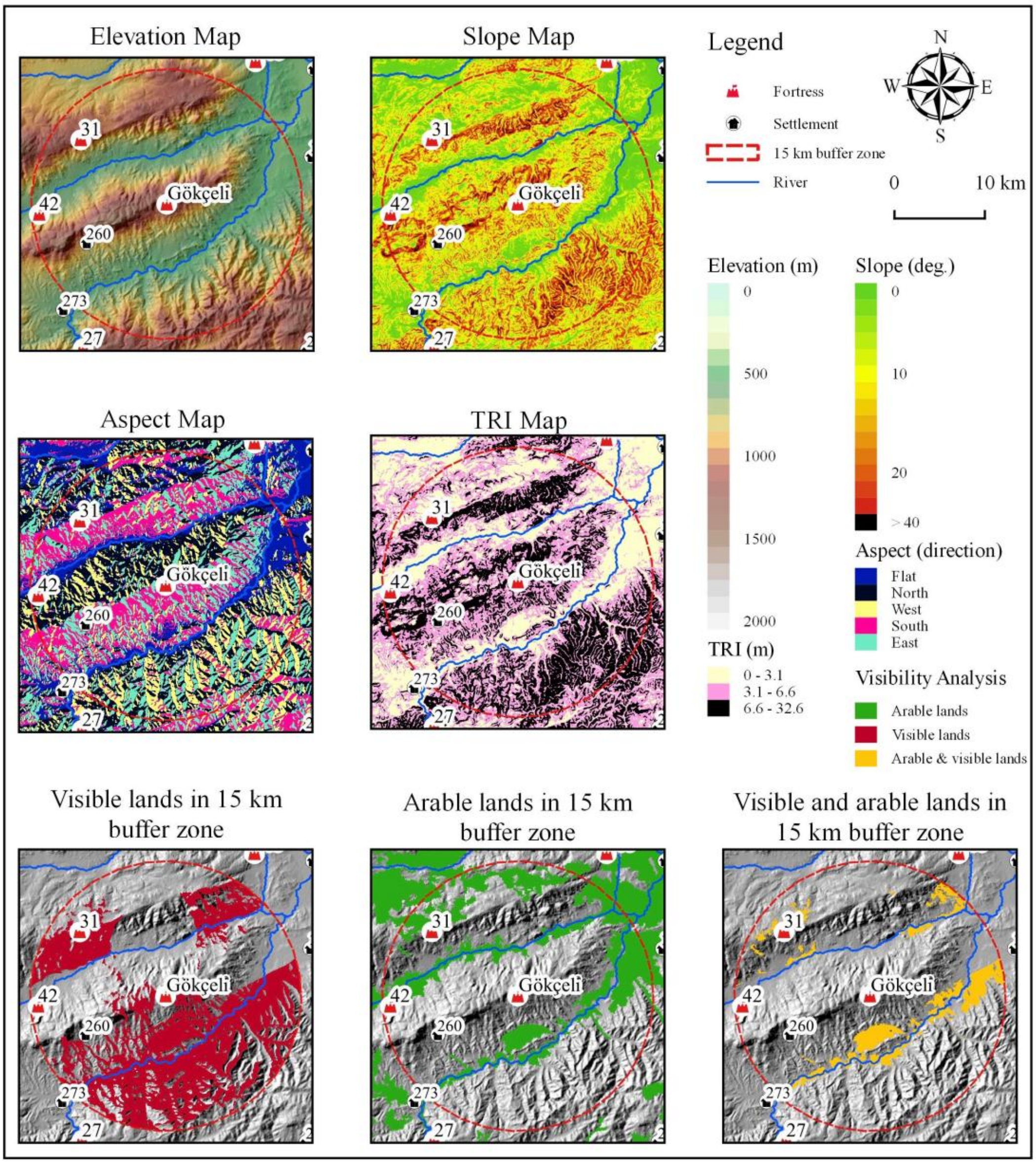
Fig. 190.—Cliff Tomb near Osmanjik. Plan and Section

The existence of this land (Pimolisene), the fact that this is a royal fortress (Strabo 12.3.40) and its location on the road coming from west to Ameseia all imply that this is a defense unit with control functions as well as administrative roles. Analyses show that the fortress has a visibility range that is enough to keep agricultural lands around under control.

A view from the fortress

ID:036 - Gökçeli

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	2.4	**Dating**	IA/HL
Location		**Projection**	UTM WGS84 36N
Province	Amasya	**Easting, m**	707412
County		**Northing, m**	4475439
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1490 m	**Visible area**	30.2 %
Slope	17.1°	**Arable area**	16 %
Aspect	East	**Visible & arable area**	6.4 %
TRI	8.1 m	**Median TRI**	4.9 m



Description

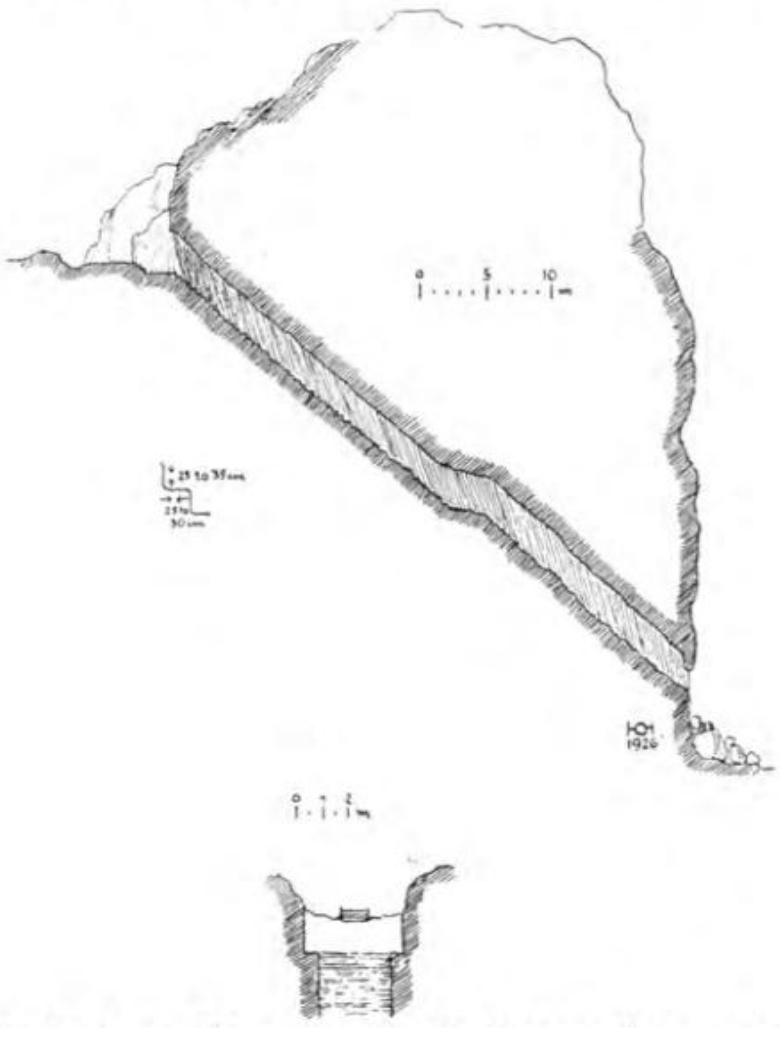
It is located 6-7 km away from the Gökçeli village of the Göynücek, towards northeast from the district, in the Kaletepe. It sits on the rocky outcrop on edge of the valley that Çekerek river passes through. There are steps that embedded in rocks here and there. Also natural terraces make it easy for climbing. On the top of the rocks there are two platforms which are constructed by flattening of the rocks as in Gümüşlük fortress. There are holes in inorderly fashion which probably utilized for the wooden construction.

Gökçeli Kale (photo by M. Doğanbaş)

Cumont was the first person to mention the fortress.[20] There are three rock cut stepped tunnels and two cisterns in the fortress (von Gall, 1967: 508). In two tunnels there are niches on the right side walls. Perrot notes that the tunnel in the fortress consist of 300 steps which leads to the water source (Perrot, 1862: 373). There are

[20] Cumont, 1906: 158; von der Osten, 1929: 127-129; von Gall, 1968: 514

also rock cut steps in various places on the surface of the fortress. The pottery sherds found on the surface are mostly course ware. Moreover, Özsait recorded numerous Iron Age ceramics during his surveys (Özsait, 2006: 251). In his visit, Von der Osten drew the plan of the biger tunnel. 220 steps of the tunnel are still observable. Each steps is 25x30 cm. Entrance of the tunnel has a width of 5,48m. Smaller tunnel is 1,50m in height, 1,10m in width and has 30 steps. I wasn't able to reach to the third tunnel.



Section plan of the biggest tunnel in Gökçeli Kale drawn by von der Osten (1929: 129).

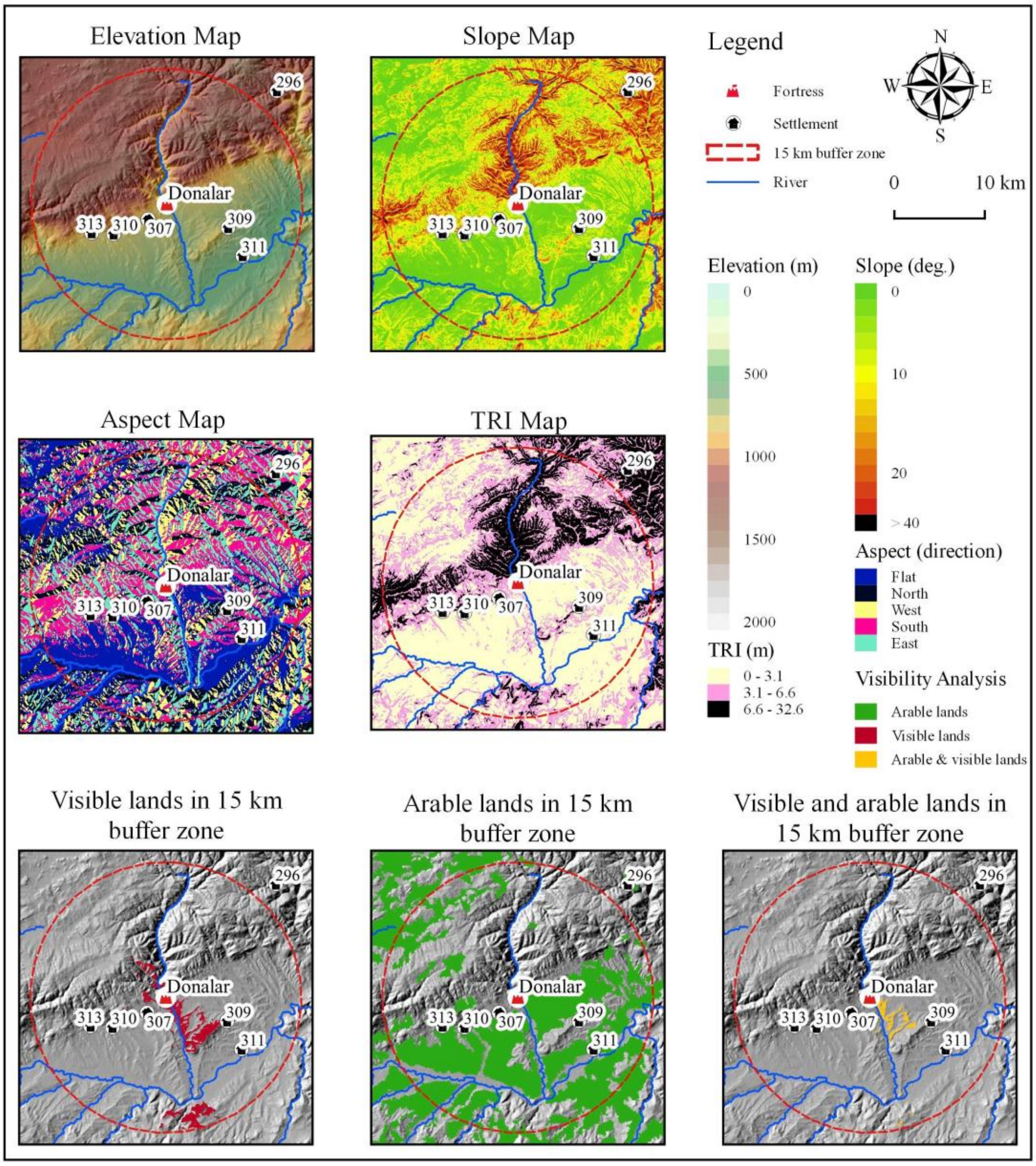
Tunnel Entrance (photo by M. Doğanbaş)

According to Jerphanion, since it is the beginning of a valley but rises mountains behind it, is more likely to think of an administrative as well as defense (de Jerphanion, 1928: 33). Analyses based on its location reveal that the fortress has a visibility on valley irrigated by Scylax river. In his visibility there are also vast agricultural lands. It is therefore pssible to assert that this fortress has an admnistrative function.

Inside the tunnel (photo by M. Doğanbaş)

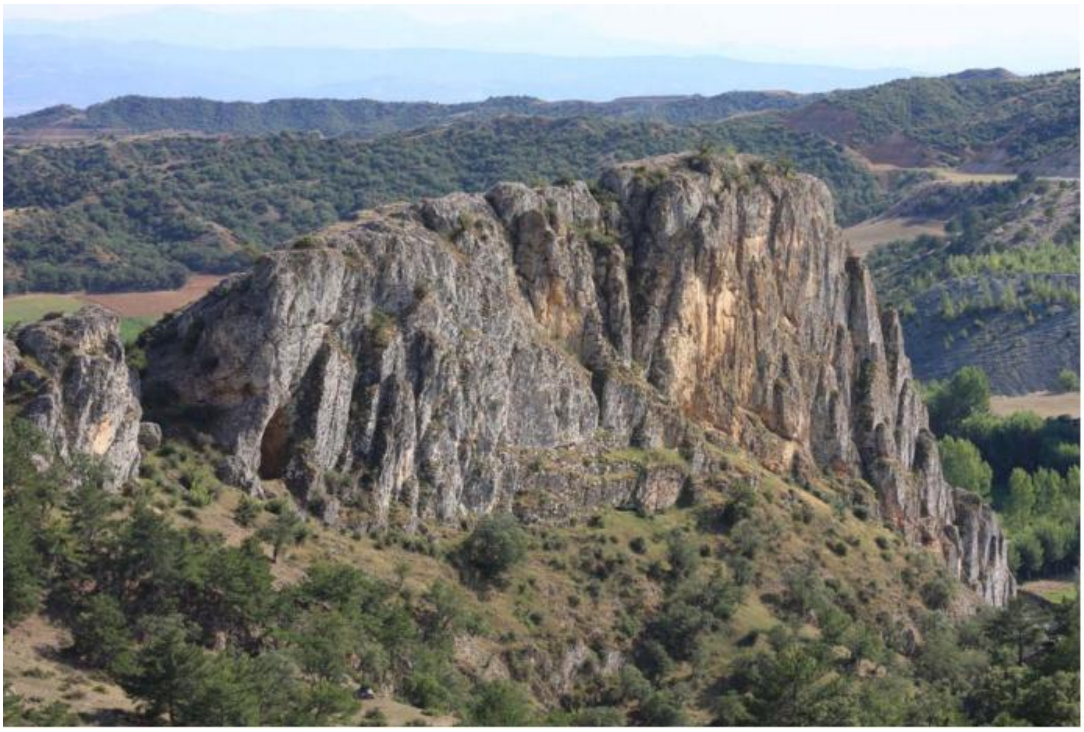
ID:037 - Donalar

Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	1	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 36N
Province	Kastamonu	**Easting, m**	590910
County	Taşköprü	**Northing, m**	4601921
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	729 m	**Visible area**	2.4 %
Slope	14.5°	**Arable area**	27 %
Aspect	West	**Visible & arable area**	0.5 %
TRI	7.1 m	**Median TRI**	2.8 m



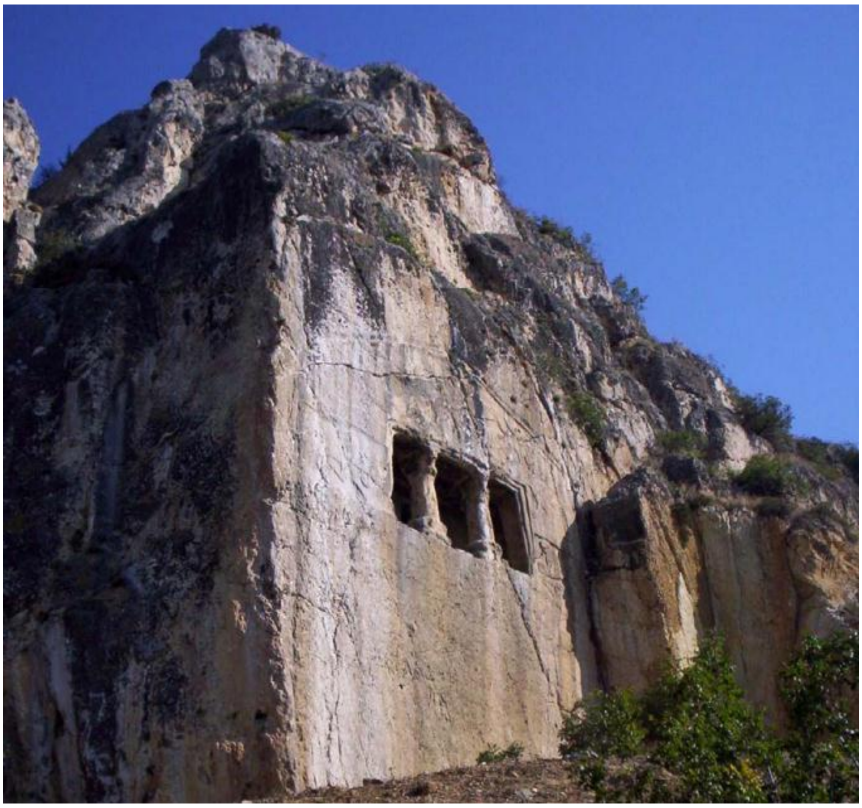
Description

The fortress was located near the tributary of Amnias River called Karadere. Bittel and Naumann's research in the fortress provides the initial information. Fortress located on an outcrop and has a commanding position over the plain. On the surface, there are rectangular caverns and cutting marks where buildings once might have sit upon. There are rock tunnels that reach down to the river at the bottom of the cliff (Naumann and Bittel 1965, 72 ff, pl. 10 drawing). After Bittel and Naumann's identification, von Gall also visited this fortress, thought that the rock cut tomb located here may belong to the leader of Paphlagonian tribes named Corylas by which Coryleion was assumingly named after in the 4 century BCE according to von Gall (1967: 515) Kalekapıkaya is the largest fortress of the Amnias Valley, and it has linked to the settlement lying on both banks of the Karadere. Visibility is low on the plateau and on a slope to the south of the eastern outcrop, where Hellenistic and Roman sherds predominate.



A view from the West (Johnson, 2010: 525-526)

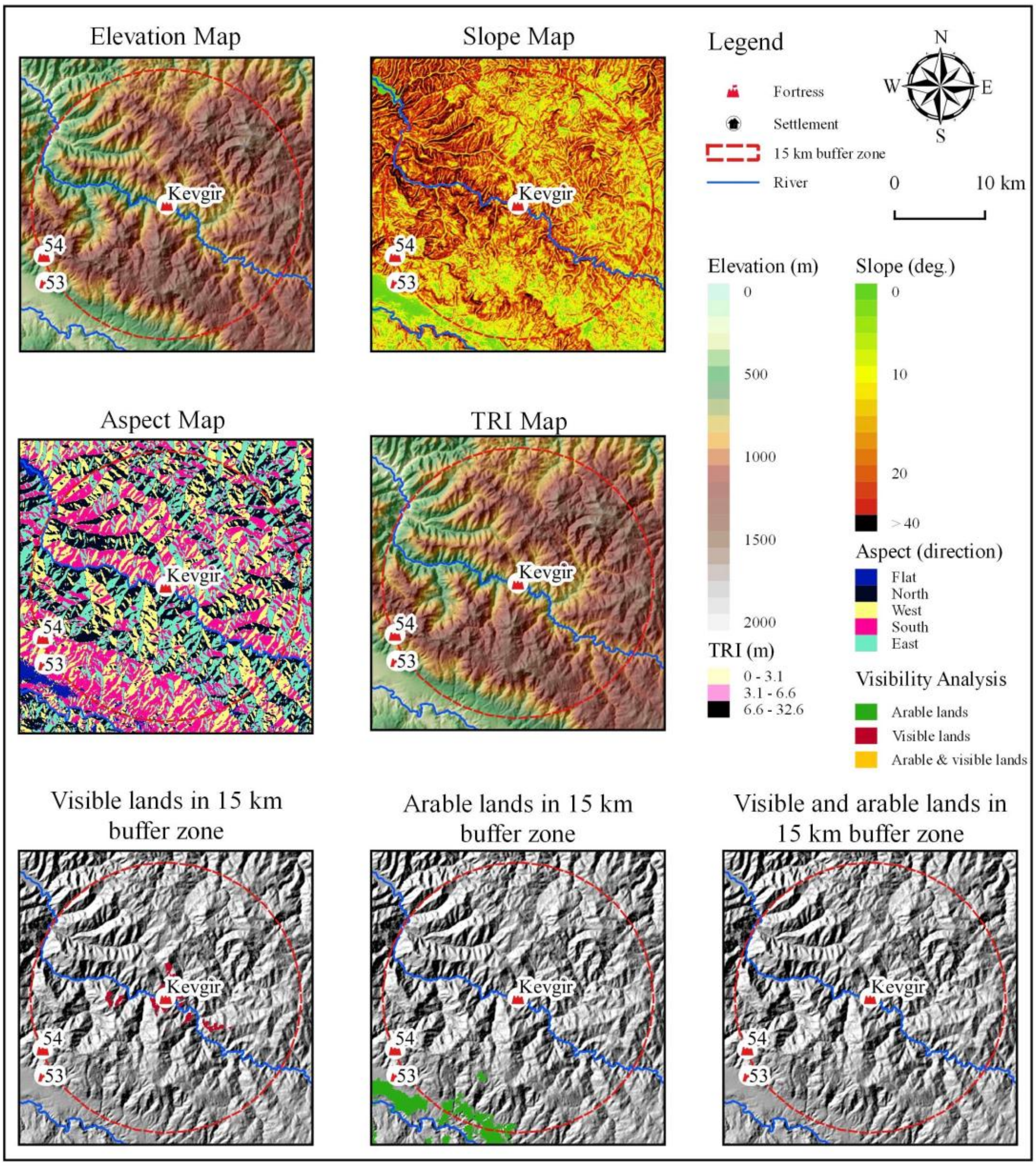
There are four rock-cut tunnel defined in this fortress. The first tunnel on the eastern slope is from the summit and is aligned with the ridge. The second tunnel is on the ridge and turns 90 degrees to align itself with the ridge (Johnson, 2010: 332). The fourth has a simple curving technique resembles to Gerdekkaya. The fascinating tomb is 10 meters high and has two chambers. Larger chamber’s decoration and wood-like ceiling arrangement is similar to Gerdekkaya tomb. Iconography carved outside the tomb was neatly studied by Johnson in her dissertation (2006: 122-132). On the relief, there are charging bull panel and the combat scene of Heracles and Nemean lion. Iconographical analysis implies that the tomb brings Greekness element into prominence. Because there are no comparable peer in and around Amnias valley, it can be inferred that this might have had a connection with an individual or family from Greek colony Sinope. On the other hand, bull depictions on the side panels display Achaemenid characteristics. Therefore it is plausible to say that a hybrid work of art was produced that was influenced by Aegean, Achaemenid and Anatolian cultures (Johnson, 2006: 22)



Rock-cut tomb studied by Johnson (2010)

ID:038 - Kevgirkale

Ancient Name(s)	Kainon Chorion	**Proposed Function**	DEF
Size of Fortress, ha	0.7	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	318453
County	Erbaa	**Northing, m**	4516786
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	658 m	**Visible area**	1.2 %
Slope	8.2°	**Arable area**	1 %
Aspect	West	**Visible & arable area**	0.01 %
TRI	5.8 m	**Median TRI**	8 m

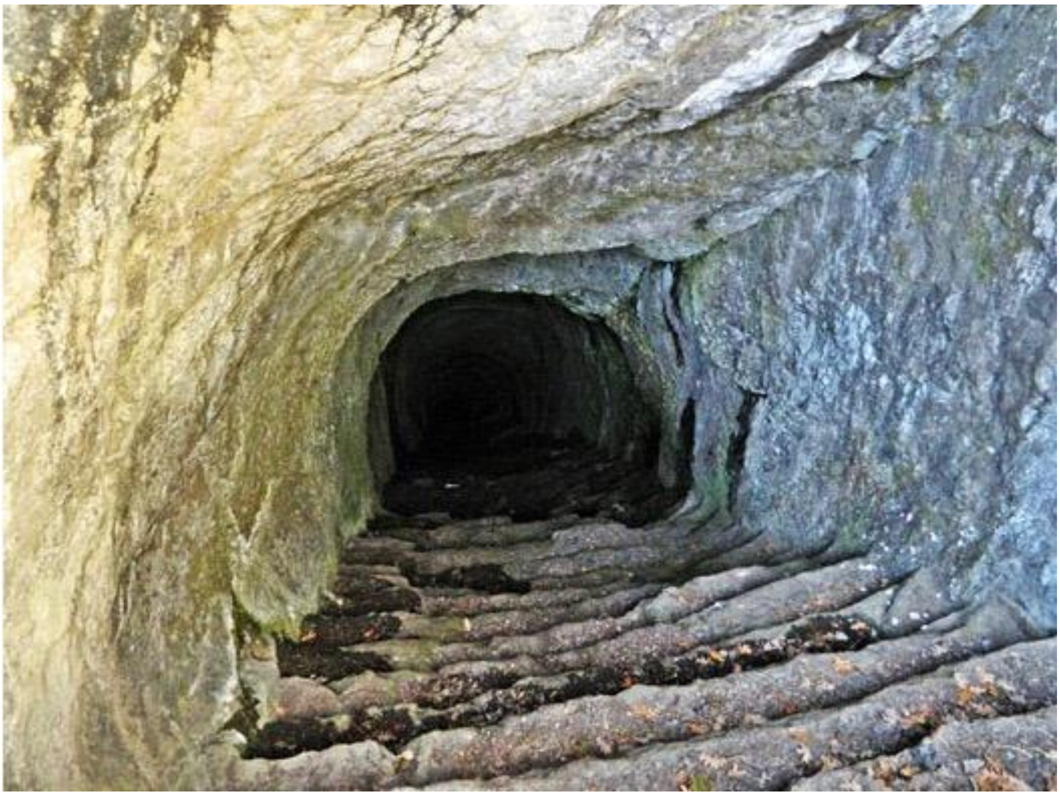


Description

The fortress is located in Akgün village, northeast of Erbaa in Tokat. It is far from Akgün village an hour of walk.

Kevgir Kale from south

Located in a mountainous topography, the fortress is built on an outcrop and is surrounded by walls, which are mostly demolished. The lower layer of the wall is 30x50 cm ashlar masonry dated to Hellenistic and it was repaired and used in the Byzantine period. During the construction of the fortification wall, the rock was flattened and terraced. Western and northern sides of the fortress are so steep that no fortification wall was ever required. The outcrop that the fortress sits on is right next to the river.



There are three rock cut tunnels, a tower in the northeast and a rock cut tomb are still visible. One of the tunnels is located right under the tower outside the walls (Şahin, 1988: 25). The entrance of the tunnel is 2.3 m wide and 2.33 m high. The steps of the tunnel are not visible due to the debris that filled it. The tunnel is in the east-west direction with a gradient of approximately 45 degrees. Another tunnel is located on the south slope of the fortress. At the entrance of the tunnel there is a chamber that is 7 m long towards west and 5 meters long in the south-west direction. There is an L shaped channel on the east that connects to this room but its function could not be identified. The entrance of the tunnel is 3.3 meters wide and 2.50 meters high and the tunnel has a 45 degree gradient (von Gall, 1967: 515). There are 9 visible steps in the tunnel. The rest is filled with debris. The steps are 30x30 cm in size. The third tunnel is located 30 meters away from the second tunnel, close to the southwest corner of the fortress. The entrance to the 45 degree rock cut stepped tunnel faces east. There is a niche on both sides of the first step. The entrance depth of the tunnel is 2.70 m, height is 2.3 m. 120 steps can be counted in the tunnel and their size is 25x30 cm. The end of the tunnel could not be reached and therefore the exact number of steps is unknown. The small north facing slope at the highest point of the fortress has a rock cut tomb with a north facing entrance. This tomb has an interesting structure with many bowl shaped circular hollows on the floor (Şahin, 1988: 34).

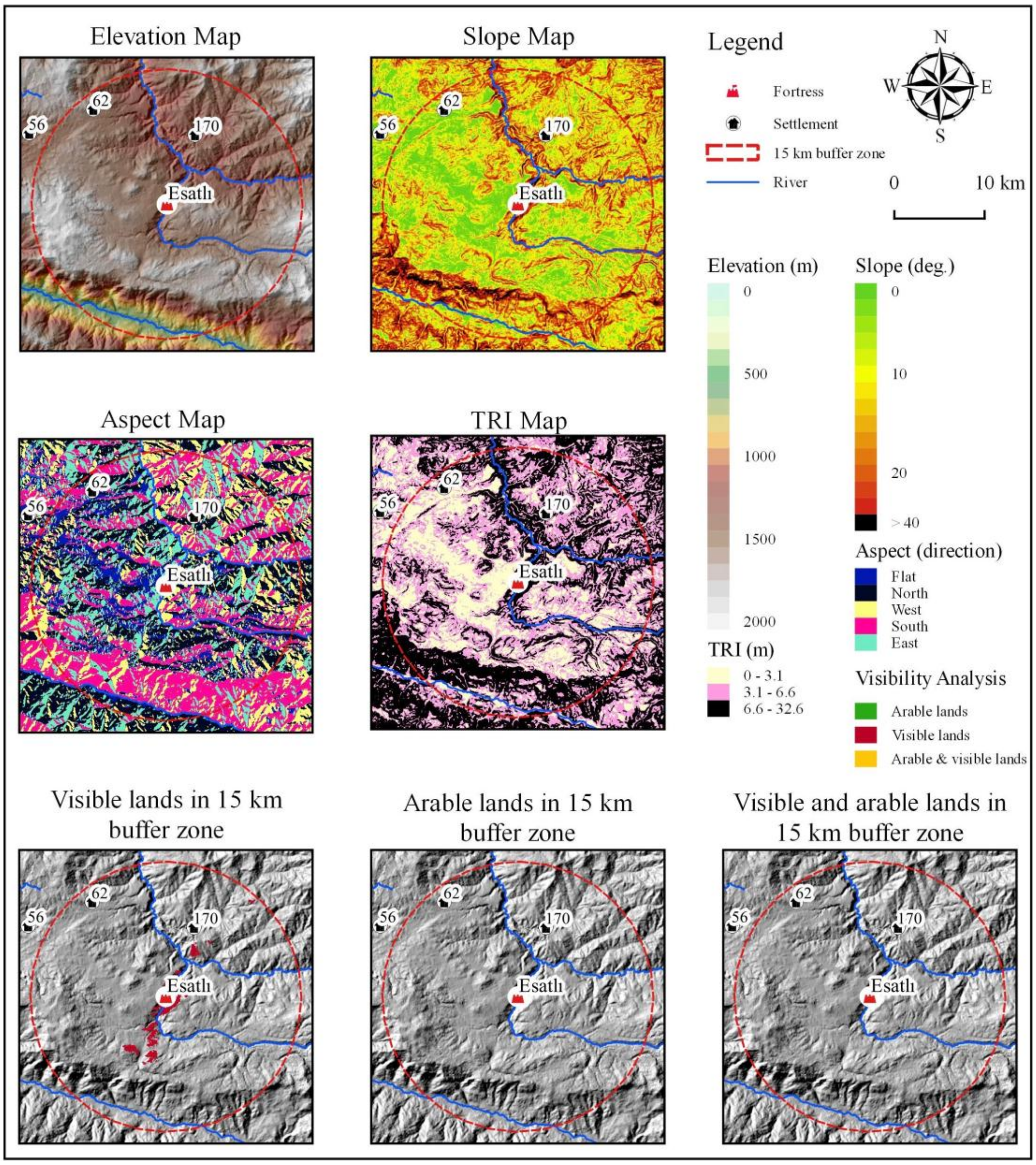
Mahalle or Kevgir fortress was identified by Jerphanion as Cainon Chorion[21], one of the most important fortress of Mithridates VI (1912: 135; pl.28). Located on the Paryadres Mountains, this fortress had a command over the road between Neocaesareia and Oinaion. Cainon Chorion is described to be 200 stadia distant from Cabeira[22] and there is spring on its summit which yields abundant water with a river and a deep ravine at its foot. The country around is also reported by Strabo to have been highly mountainous and devoid of water, such that it is almost impossible for an enemy to encamp within 120 stadia. This fortress is also known as the place where most precious of Mithradates' treasures were kept (Strabo, XII.3.31). The fortress was captured by Pompey in 64/3 BCE, during the Third Mithridatic war.

This fortress located on a high topography and uneasy to reach, served a defensive purposes. If localization is right, Mithradates preserved his treasury in here (Strabo, XII.3.31). This location is quite suitable for storing a treasury because of its impregnability.

[21] The word Chorion is using for estate which can also mean 'a fortified post' (G.R. Whittaker, Rome and its frontiers the dynamics of Empire, Routledge, 2004).
[22] 1 stadia is approximately 157 m. Kevgir kale can possibly be Kainon Chorion if we consider that 200 stadia is 31.4 km.

ID:039 - Esatlı Kale

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.5	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Ordu	**Easting, m**	390580
County	Mesudiye	**Northing, m**	4475657
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1272 m	**Visible area**	1.4 %
Slope	8.8°	**Arable area**	0 %
Aspect	East	**Visible & arable area**	0 %
TRI	4.1 m	**Median TRI**	5.1 m



Description

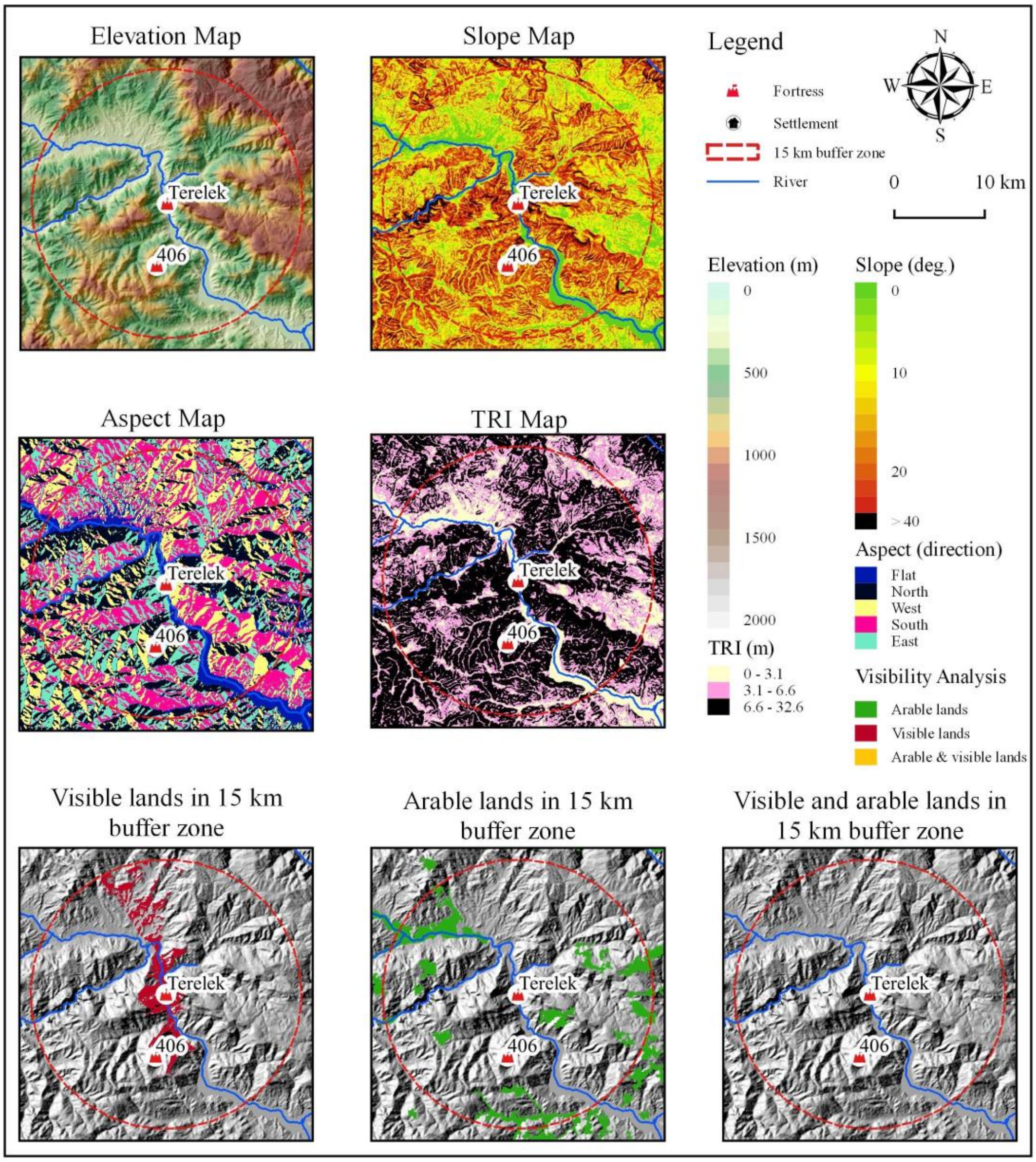
Located on an outcrop south of Esatlı village of Mesudiye in Ordu province, the fortress has some architectural remains such as cistern and a rectangular structure on the south face of the outcrop that was probably used as a watchtower. Moreover, also in the same place there is a rock cut tunnel (H. 2.70 and W. 2.56 meters) with 152 steps. There hasn't been any studies conducted in Esatlıkaya. There is only one article written about the rock paintings at the foothills of the cliff.[23] Fortress is located on part of the valley that is near to Lycus where there is also Gölköy is located. It is situated on a rough landscape and the defensive function of the fortress is similar to that of Gölköy; it keeps the valley under its protection.

A view from fortress

[23]Demir, N. 2009. Esatlı Köyü (Ordu-Mesudiye) Kaya Üstü Resim ve Yazıtları ile Bunların Tarihi Alt Yapısı, Zeitschrift für die Welt der Türken Journal of World of Turks Vol. 1, No: 2: 1-29.

ID:040 - Terelek

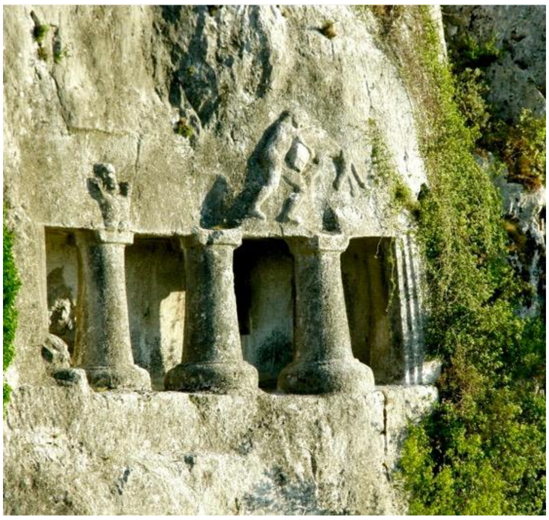
Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	1.3	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Sinop	**Easting, m**	678639
County	Durağan	**Northing, m**	4580398
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	295 m	**Visible area**	4.4 %
Slope	35.9°	**Arable area**	6 %
Aspect	West	**Visible & arable area**	0. %
TRI	16.1 m	**Median TRI**	7.2 m

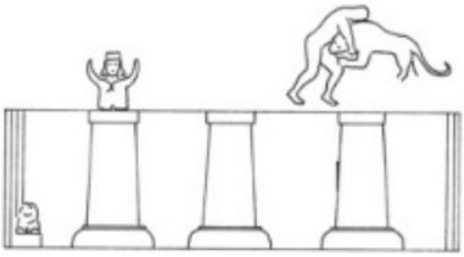


Description

The fortress is located on a outcrop near to the Amnias River. The outcrop has rock cut tomb dated to Hellenistic period and a rock cut tunnel that goes down to Halys. The façade of the tomb embellished with three columns and at the pediment of the rock-cut tomb, Herakles-lion and Matar reliefs dominates the tombs. (Dökü, 2008: 66-7; Gökoğlu, 1952: 59). Fortress with its location near to Halys which run along to Phazemon, seems to control water transportation. Furthermore, intervisibility with Eğrikale, infers their function to gaze the valley as well.

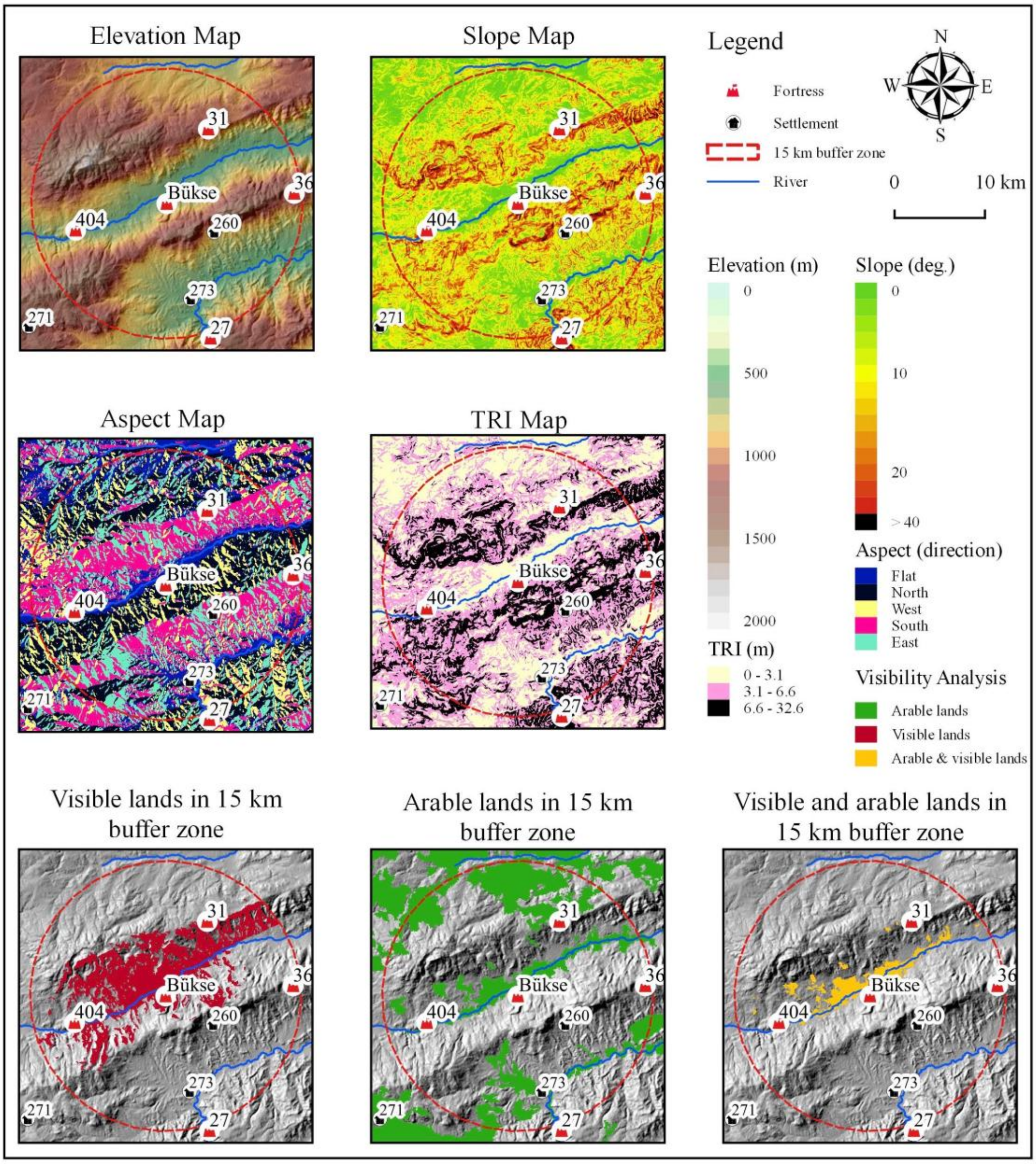
A general view of the fortress and the rock-cut tunnel





Drawing of the façade of the Terelik tomb (von Gall, 1966: 11a)

ID:042 - Bükse			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.7	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	693411
County	Mecitözü	**Northing, m**	4473353
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	700 m	**Visible area**	13.8 %
Slope	7.8°	**Arable area**	16 %
Aspect	West	**Visible & arable area**	3.1 %
TRI	6.1 m	**Median TRI**	4.4 m



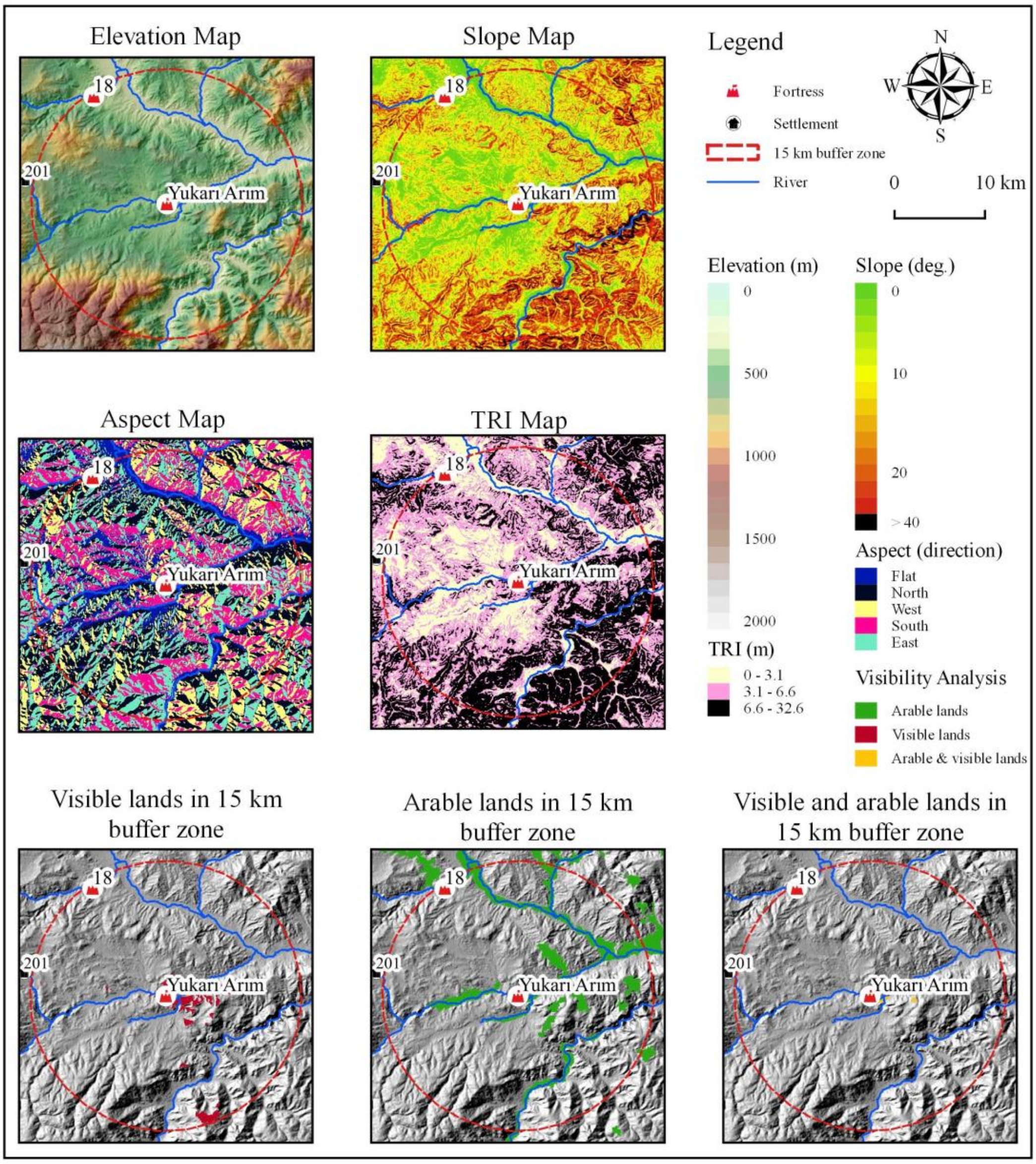
Description

It is located in the Bükse village of Mecitözü in Çorum, on the Çorum-Amasya road. It is called Gavur Kale by the locals. Çorum Museum does not hold any records of it. The fortress is built on a hill, about 40 meters above road level. There is a very simple built rock-cut tunnel on the northern side of the outcrop. There are also two simply carved rock tombs with no *kline*s. There is a niche on the right side of one of the tombs. It is probable that the other tomb had a niche as well, but it cannot be identified due to severe damage. On the highest point there is round rock cut cistern that is approximately 2 meters deep. The pottery sherds distributed in a 0.25 hectares area mainly coarse ware.

Fortress with high visibility over fertile Göynücek valley can be considered as administrative function.

ID:043 - Yukarı Arım

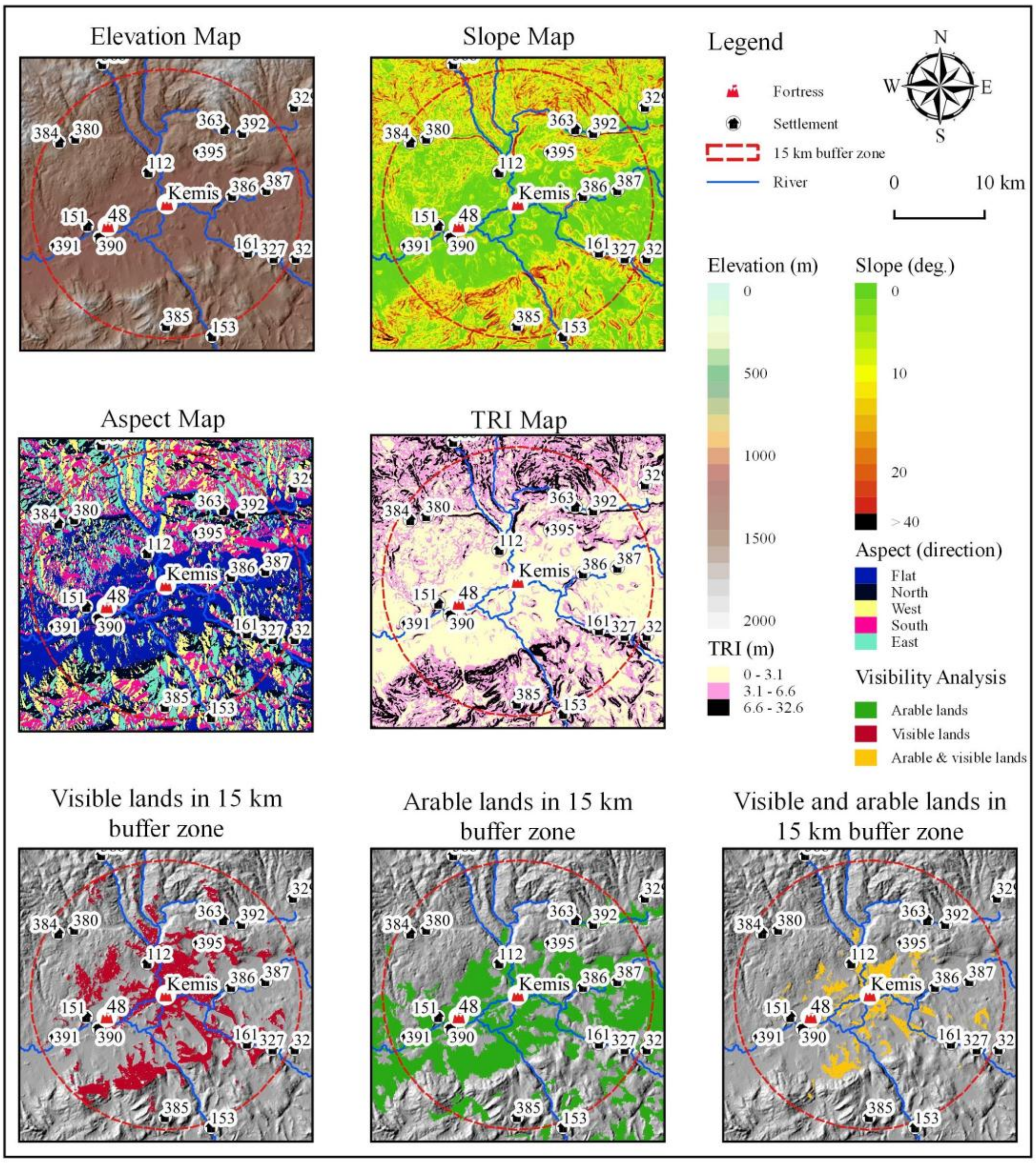
Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	1.4	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Sinop	**Easting, m**	655986
County	Saraydüzü	**Northing, m**	4580489
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	351 m	**Visible area**	1.2 %
Slope	11.5°	**Arable area**	7 %
Aspect	West	**Visible & arable area**	0.1 %
TRI	5.0 m	**Median TRI**	4.8 m



Description

It is located on an outcrop above Yukarı Arım village of Boyabat in Sinop. Arım River runs right next on the outcrop. There is a rock cut tomb inelaborately carved on one side of the outcrop (Başoğlu, 1972: 68). The rock cut tunnel located east of the fortress is highly eroded. The fortress was recorded by Gökoğlu but detailed information cannot be found (Gökoğlu, 1952: 125). Inside the narrow valley parallel to Halys River, the fortress controls its position and valley traffic.

ID:044 - Kemis			
Ancient Name(s)	Kamisa	**Proposed Function**	ADM
Size of Fortress, ha	1.3	**Dating**	HL/ROM/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Sivas	**Easting, m**	363655
County	Hafik	**Northing, m**	4412122
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1304 m	**Visible area**	14.1 %
Slope	11.2°	**Arable area**	24 %
Aspect	North	**Visible & arable area**	5.1 %
TRI	5.5 m	**Median TRI**	2.4 m

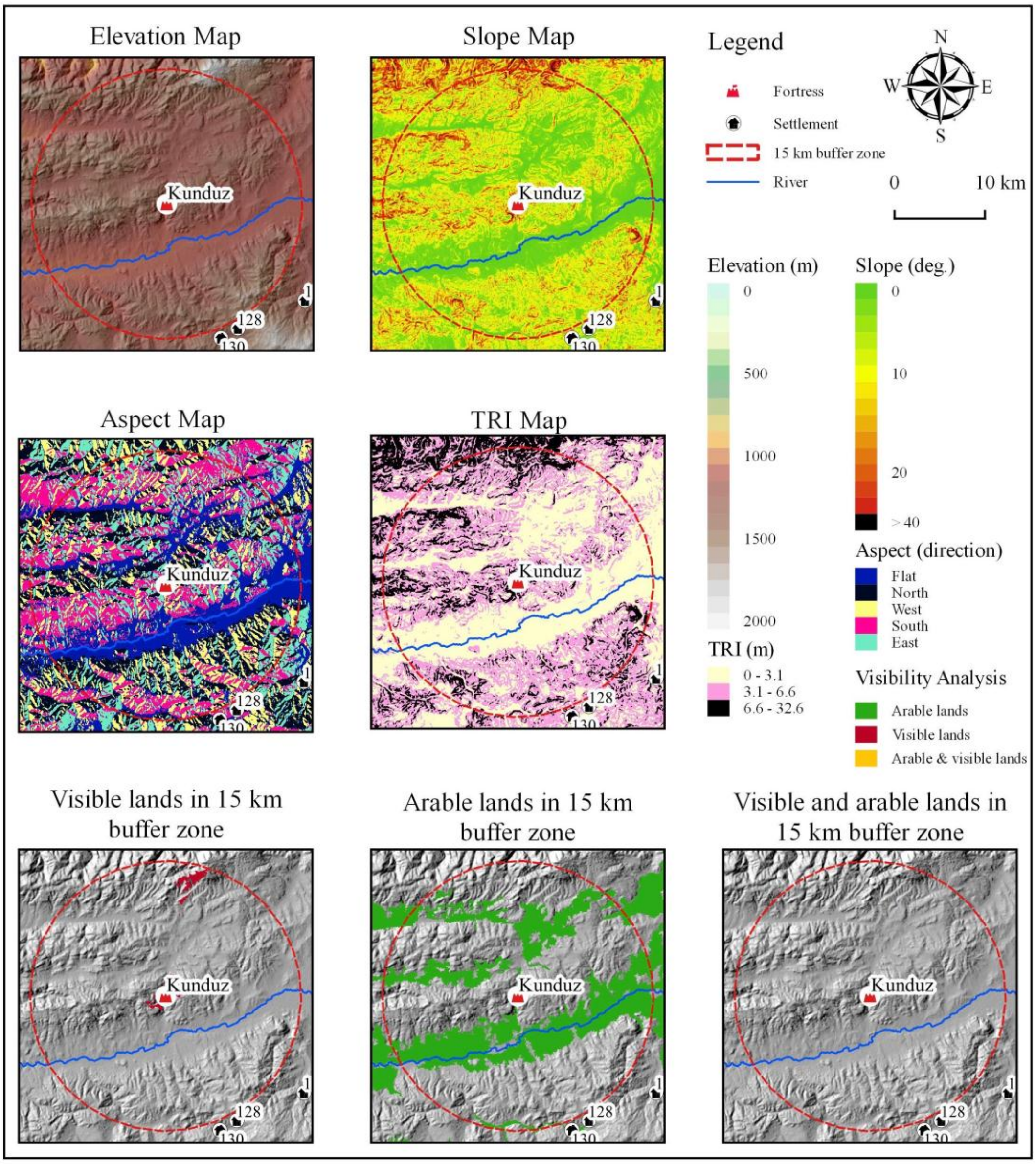


Description

It is located on an outcrop north of Dışkapı village (Kemis Köy) in Sivas, right beside Halys (Kızılırmak). According to ancient sources Camisene territories are located right behind the Camisa fortress (Strabo, XII.3.37). He also mentions that the Camisene was the reigon located next to the Pontic territory. Only small remnants of the wall on the north side are visible today (Ökse, 1997: 379). A rock cut tunnel with 45 degrees inclination has 80 visible steps (Olshausen & Biller, 1984: 62; Biller & Olshausen, 1978: 170 and table LVI). The fortress has a commanding position over the Camisene territory. Considering that population that lived behind it such as Pimolisa probably had a role in its administration, it is a defense unit that has both an administrative and a controlling role. If we accept that Camisene was next to Pontic territory, it can be said that the fortress of Camisa was located on the border of Pontos.

A view from the fortress and the tunnel (Sivas Survey Project Archive)

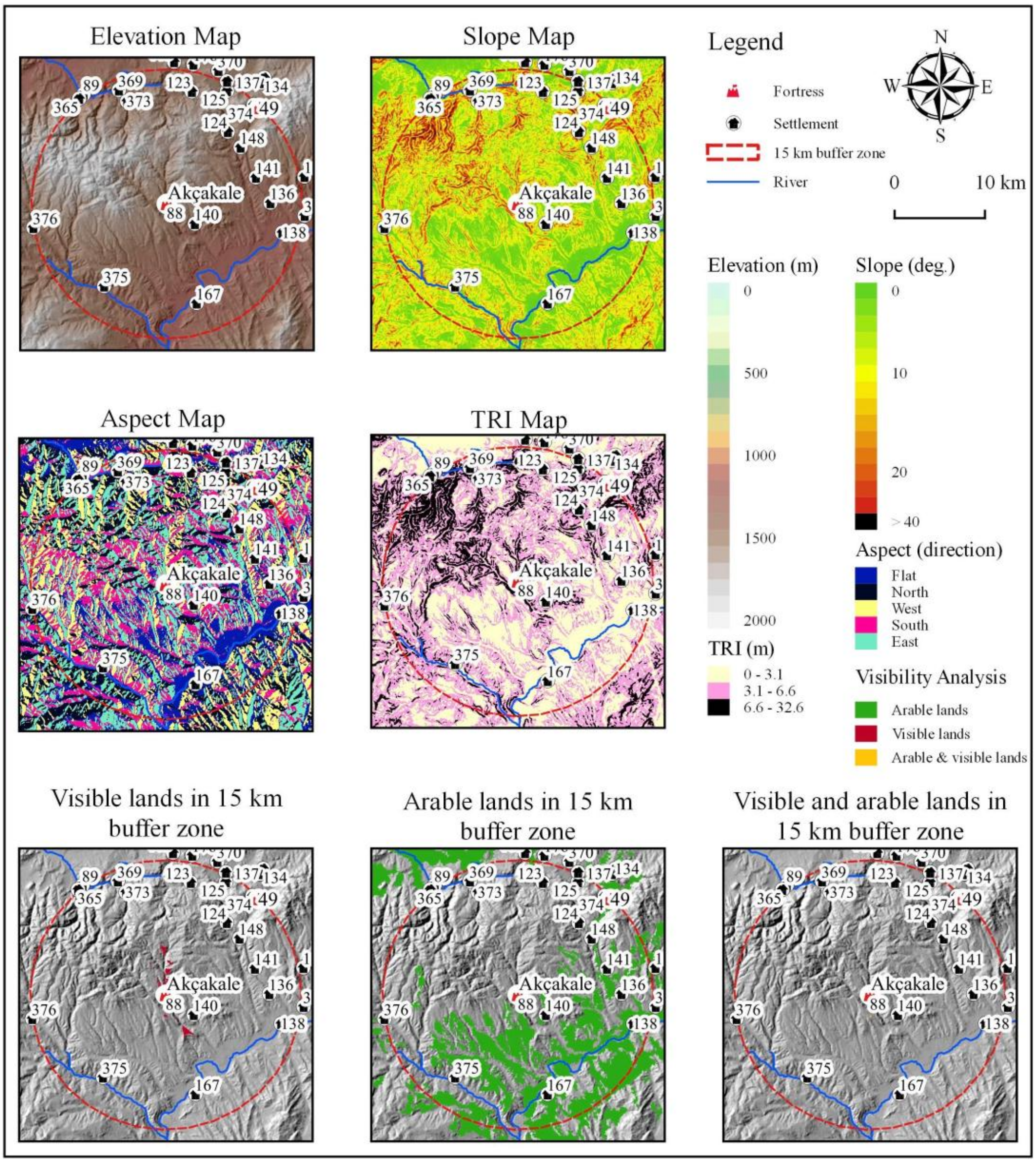
ID:046 - Kunduz			
Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	0.6	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	269742
County	Artova	**Northing, m**	4439974
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1147 m	**Visible area**	0.7 %
Slope	8.8°	**Arable area**	20 %
Aspect	West	**Visible & arable area**	0.0 %
TRI	3.1 m	**Median TRI**	3.2 m



Description

Kunduz Kale is located on the west side of the road that connects Artova to Kunduz village. Although there are no visible remains of a fortification wall there is a stepped tunnel passing through the foot of the outcrop, going down to the Kunduz river. The tunnel is full of debris. There are no reported findings from the fortress in the museum inventory (Tokat Museum Inventory, p.270). According to the analysis, this fortress was possibly built for defense based on its location inside the valley, it also protected the natural pass from Sebasteia to Dazimonitis plain.

ID:047 - Akçakale			
Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	1.5	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Sivas	**Easting, m**	275046
County	Yıldızeli	**Northing, m**	4391458
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1416 m	**Visible area**	0.4 %
Slope	10.6°	**Arable area**	18 %
Aspect	East	**Visible & arable area**	0.0 %
TRI	4.6 m	**Median TRI**	3.5 m



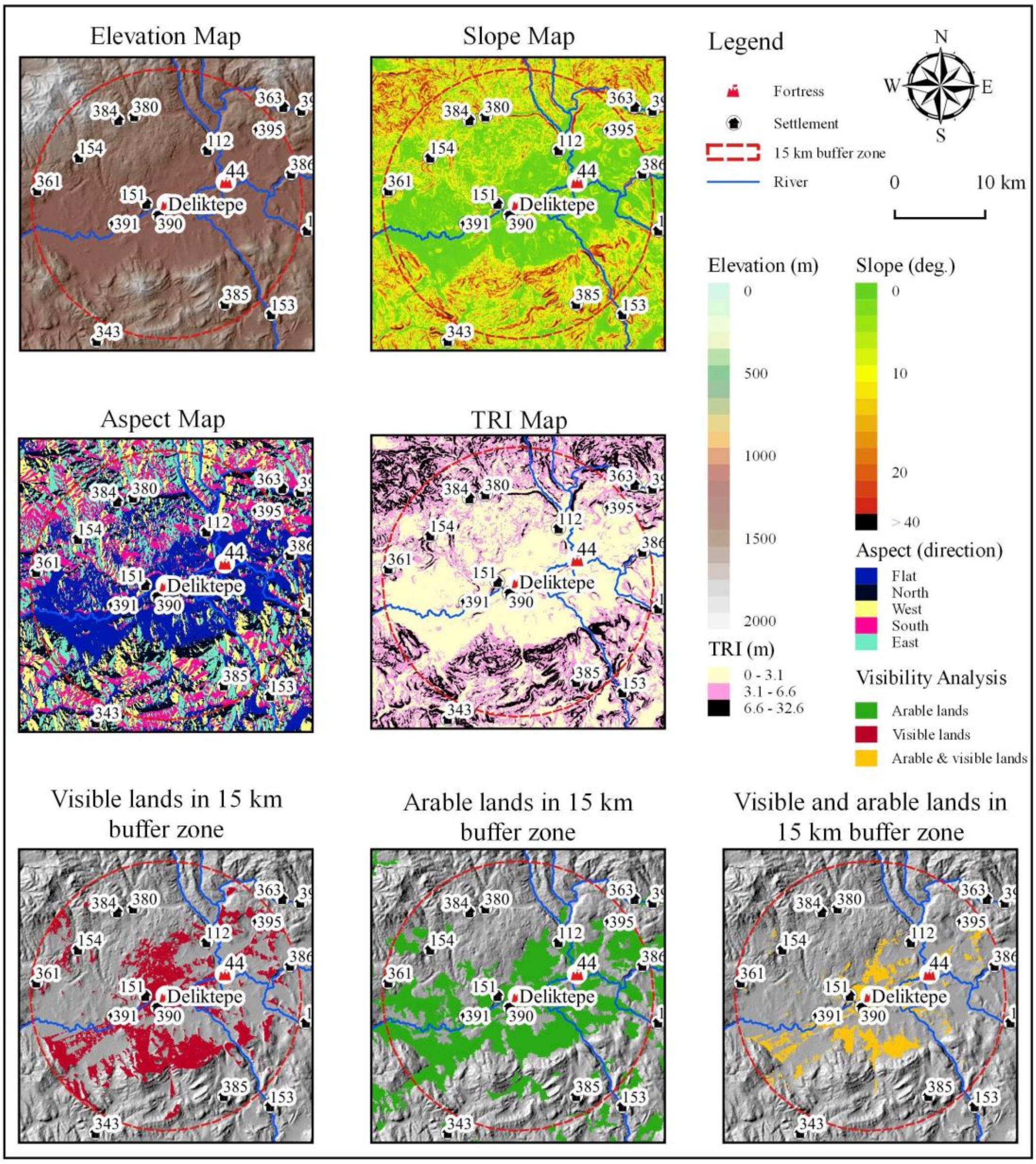
Description

It is located on an outcrop in Akcakale village of Yıldızeli in Sivas. The outcrop is surrounded by the river on north, south and east. Therefore the fortress is only accessible from the west. There is a watchtower on the north of the fortress (Ökse, 1999: 472). The fortification wall remain stands as high as 6 meters in some places dated to Byzantine Period. On the north side of the fortress, there is a rock cut tunnel mostly filled with stones and debris (Olshausen and Biller, 1984: 253). (Sivas Museum Inventory, p.443). Fortress is located on the southern border of the kingdom. It has a relationship with Kümbet fortress in terms of visibility. Analyses produced no substantial outcomes regarding to the function of the fortress.

A view of the fortress (Sivas Kültür Envanteri)

ID:048 - Deliktepe

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.9	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 37N
Province	Sivas	**Easting, m**	357114
County	Hafik	**Northing, m**	4409686
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1326 m	**Visible area**	15.5 %
Slope	4.7°	**Arable area**	24 %
Aspect	North	**Visible & arable area**	6.0 %
TRI	4.9 m	**Median TRI**	2.4 m



Description

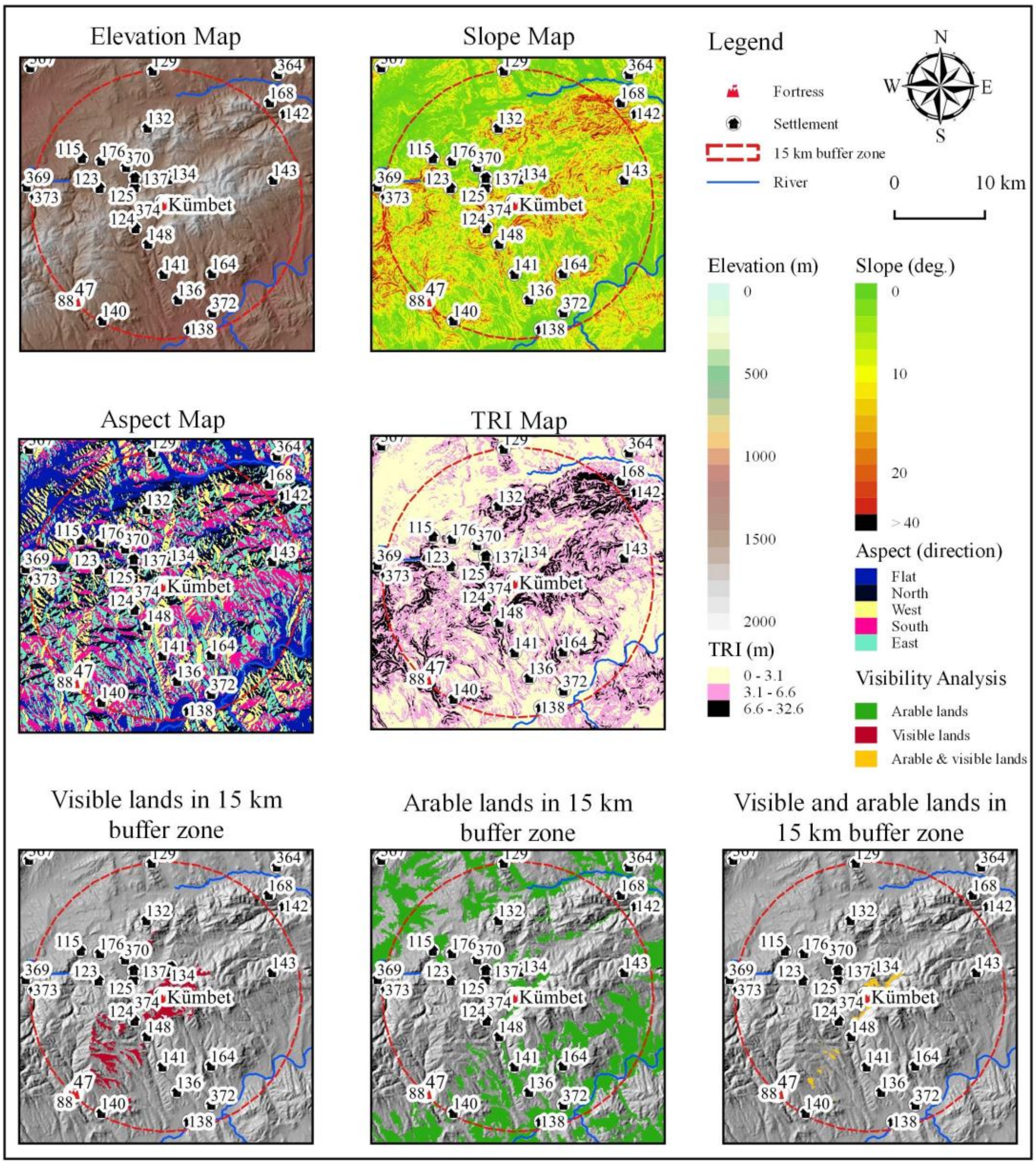
It is built on an outcrop that is 40 meters above the river level, on the right side of the Sivas-Erzincan highway, 3 km south of Durulmuş village of Sivas. The rock-cut tunnel with 30 degrees inclination and 152 visible steps, is assumed to go down to the river.[24] There is a small water tank that is partially collapsed at the end of the 55 meters of tunnel. On the mound at the foothills of the fortress a high density of Hellenistic and Roman period pottery was collected (Yakar, 1992: 509; Ökse, 1997: 378). Deliktepe fortress is located on the southern border of the kingdom. It has a relationship with Kemis fortress in terms of visibility. Analysis results from these two fortresses are similar to each other. Deliktepe fortress is as much associated with the protection of the agricultural lands as Kemis fortress. Thus it might have had an administrative role alongside of its defensive function.

A view from the fortress and the tunnel (Sivas Survey Project Archive)

[24]http://www.tayproject.org/Magara.fm$Retrieve?MagaraNo=12584&html=cave_detail_t.html&layout=web

ID:049 - Kümbet

Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	0.3	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 37N
Province	Sivas	**Easting, m**	285275
County	Yıldızeli	**Northing, m**	4402091
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1583 m	**Visible area**	3.3 %
Slope	5.3°	**Arable area**	16 %
Aspect	North	**Visible & arable area**	0.7 %
TRI	4.3 m	**Median TRI**	3.3 m

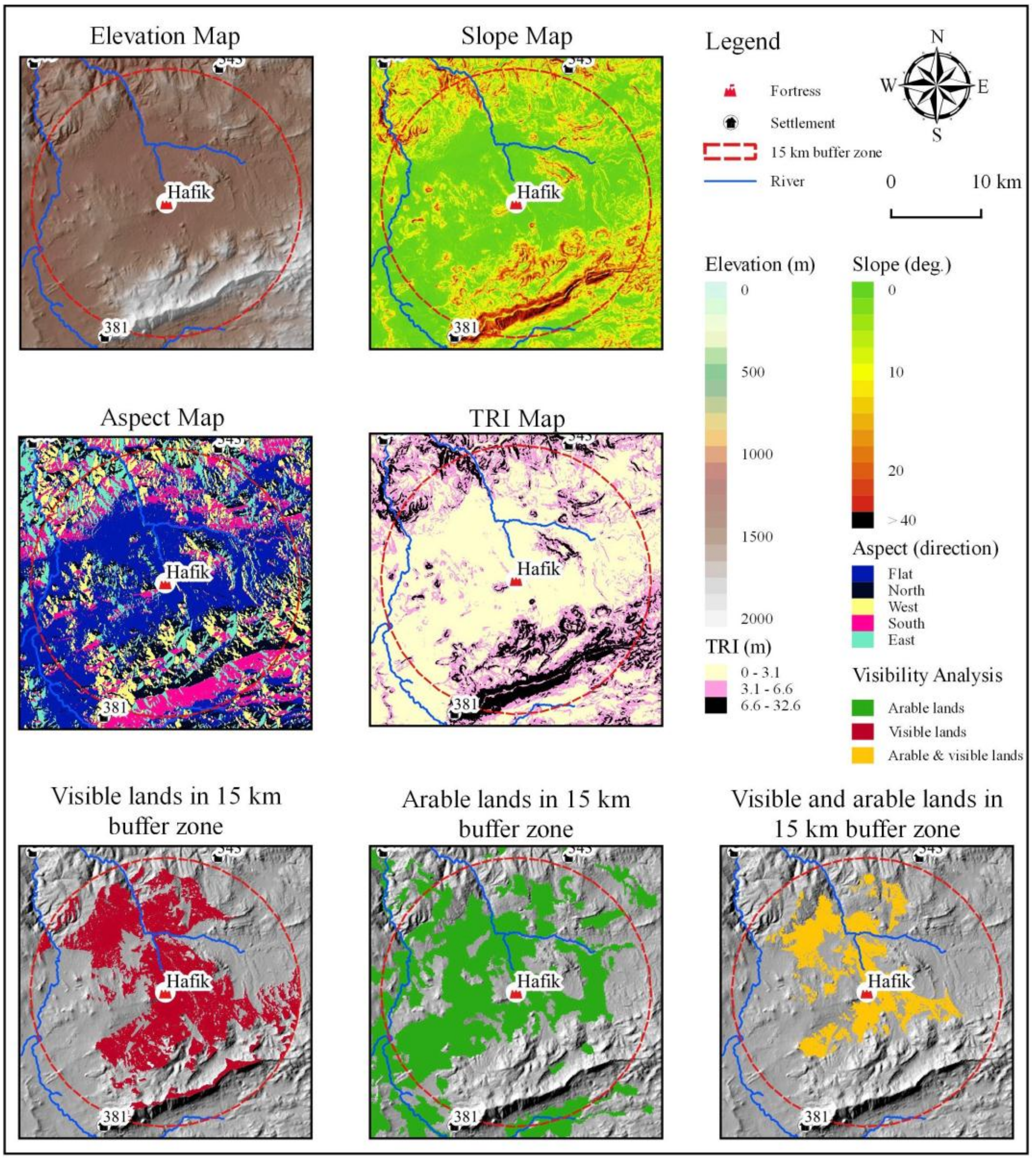


Description

Located southwest of Yıldızeli district of Sivas, the fortress is built on an outcrop on top of a high hill. There is rock cut tunnel south of the fortress that turns west and reaches down to the river. The ceramic data is almost nonexistent due to soil erosion off the outcrop. Small amount of sherds were dated to Roman period (Ökse, 1999: 471). Kümbet is one of the southern border fortresses of Pontos. It has a relationship with Akçakale in terms of visibility. It has a vast agricultural lands around but the primary function of the fortress has not been determined. It is quite likely that it served as a border fortress.

Kümbet fortress from east and the tunnel (Sivas Archaeological Survey Project Archive)

ID:050 - Hafik			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.6	**Dating**	EBA/IA/HL/ROM/BYZ/OTT
Location		**Projection**	UTM WGS84 37N
Province	Sivas	**Easting, m**	343465
County	Ulaş	**Northing, m**	4379449
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1419 m	**Visible area**	24.5 %
Slope	14.8°	**Arable area**	30 %
Aspect	North	**Visible & arable area**	11.8 %
TRI	6.9 m	**Median TRI**	2.0 m

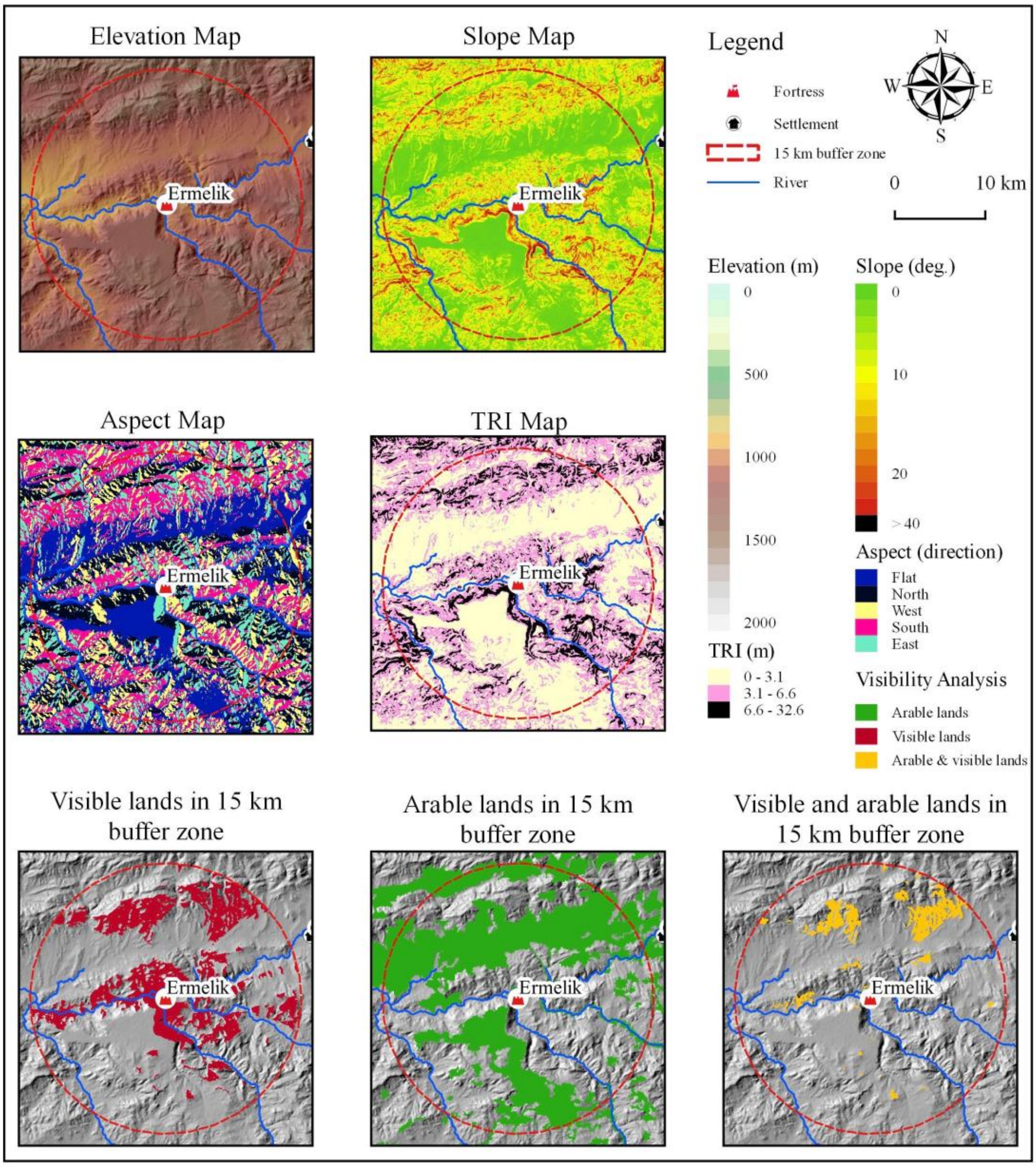


Description

Located within the borders of the Harmancık village of the Ulaş in Sivas, the fortress sits on the outcrop that rises above a flat plain. On the south, Tecer Mountain runs from east to west. On the east side of the outcrop there is a sign of a settlement. Fortification wall that surrounds the fortress is dated to the Byzantine and Ottoman Period. Surveyors reported the Second Millennium, Iron Age, Hellenistic and Roman occupation with dense pottery sherds (Yakar, 1979: 40). There is a rock cut stepped tunnel on the east side of the outcrop, built with a 70 degrees inclination. Hafik fortress is located on the southern end of the kingdom. It must have had an administrative function as it controls vast plains on the north and agricultural lands around.

Hafik Fortress (Sivas Survey Project Archive)

ID:051 - Ermelik			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	4.8	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Yozgat	**Easting, m**	747661
County	Akmağden	**Northing, m**	4423598
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1185 m	**Visible area**	14.8 %
Slope	10.4°	**Arable area**	29 %
Aspect	West	**Visible & arable area**	4.0 %
TRI	5.2 m	**Median TRI**	2.8 m



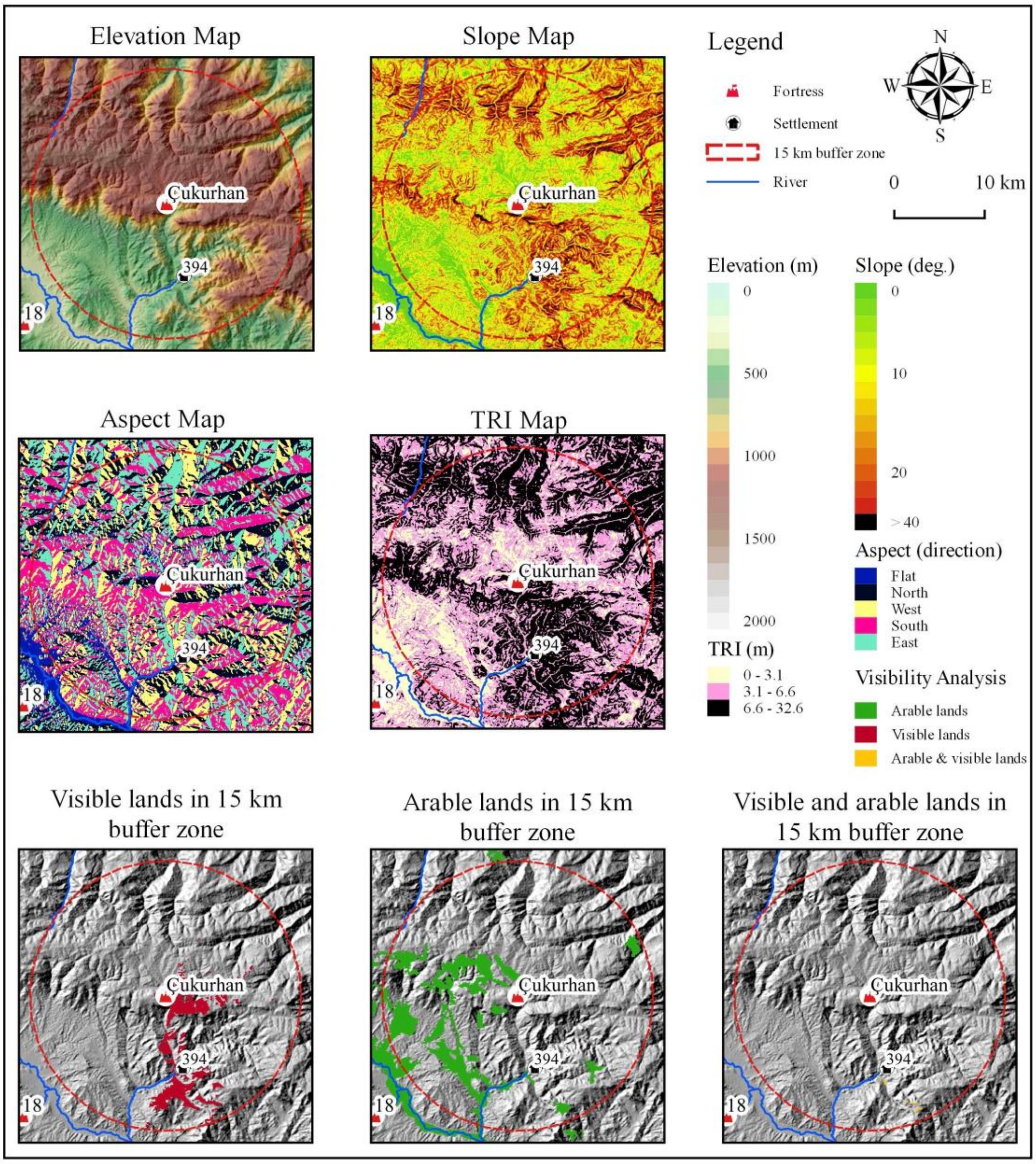
Description

Located 30 km north of Yozgat Akmağden, 2 km north of Gündüzler (Ermelik) village, on the right bank of Scylax River and 17 km south-west of Sulusaray, the fortress is built on an outcrop. It covers about 7 hectares of land. The size of the fortress and its commanding position over the valley imply that it could have an administrative role. Culupene region was situated on the east side under its control. Jerphanion reports that the fortification wall is visible, he also mentions according to the information he received, there is a rock-cut tunnel (de Jerphanion, 1928: 13).

Ermelik kale from south

ID:052 - Çukurhan

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.8	**Dating**	HL/ROM
Location		**Projection**	UTM WGS84 36N
Province	Sinop	**Easting, m**	661993
County	Boyabat	**Northing, m**	4606154
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1063 m	**Visible area**	3.6 %
Slope	20.6°	**Arable area**	7 %
Aspect	South	**Visible & arable area**	0.0 %
TRI	15.5 m	**Median TRI**	5.8 m



Description

It is located west of Çukurhan village of Boyabat in Sinop. The fortress was visited by D. French in 1991. He asserts that the fortress controls the roads that go from Boyabat to Sinop and was built during the Hellenistic period, it is a very strategic location for the Pontos Kingdom (French, 1992: 150).[25] Hellenistic period ashlar masonry and rock cut tunnel of the fortress are well preserved. As French says, the fortress is a defense unit in highly precipitous and defensive position. It located at the entrance of the valley and monitoring the route coming from the coast and to the interior valleys.

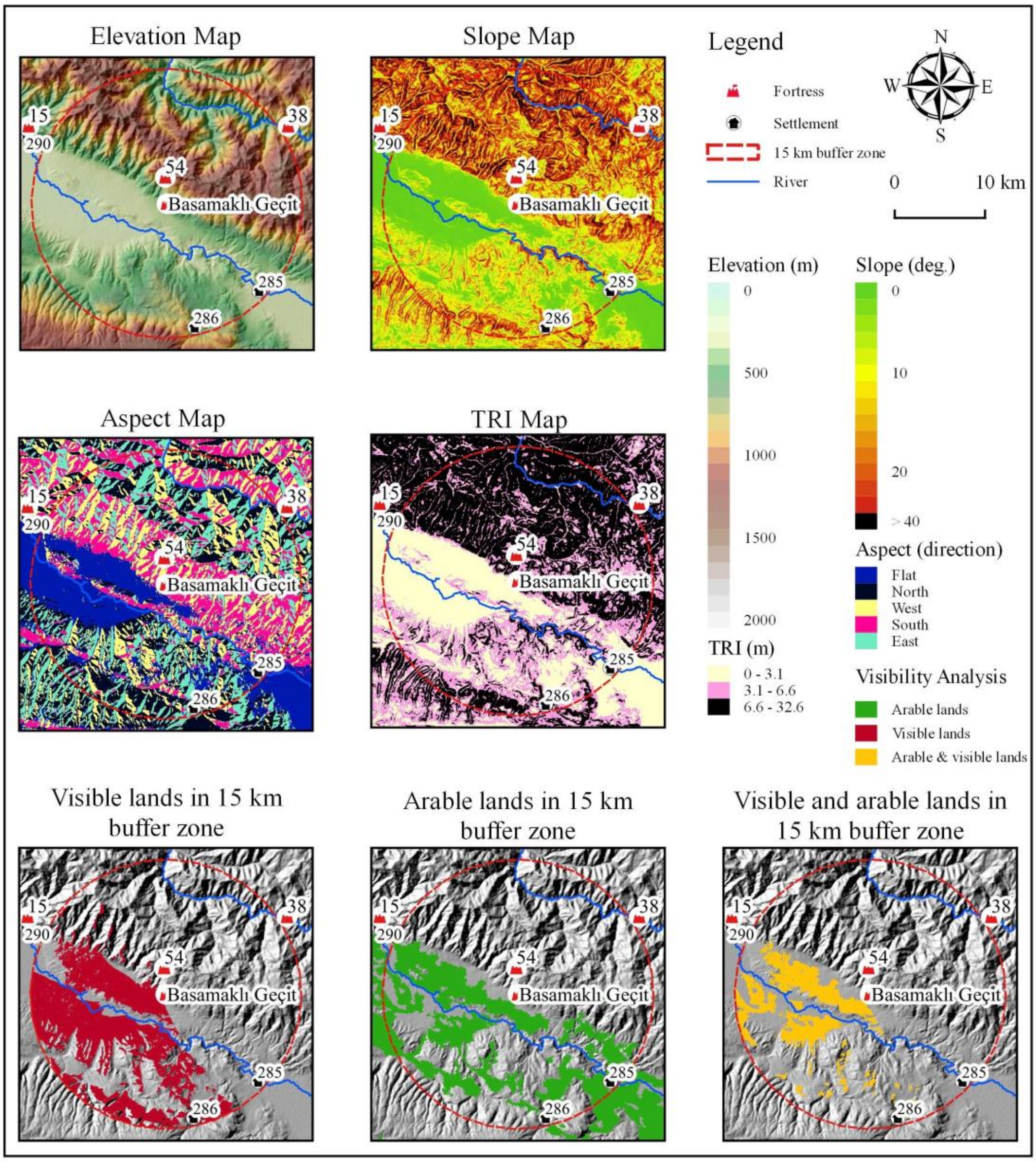
Çukurhan fortress from west

Tunnel at Çukurhan

[25] Işın also underlines the fortress' strategic position during the decades of conflict between the Pontic Kings and Rome (Işın, 1998: 105, site 31).

ID:053–Basamaklı Geçit

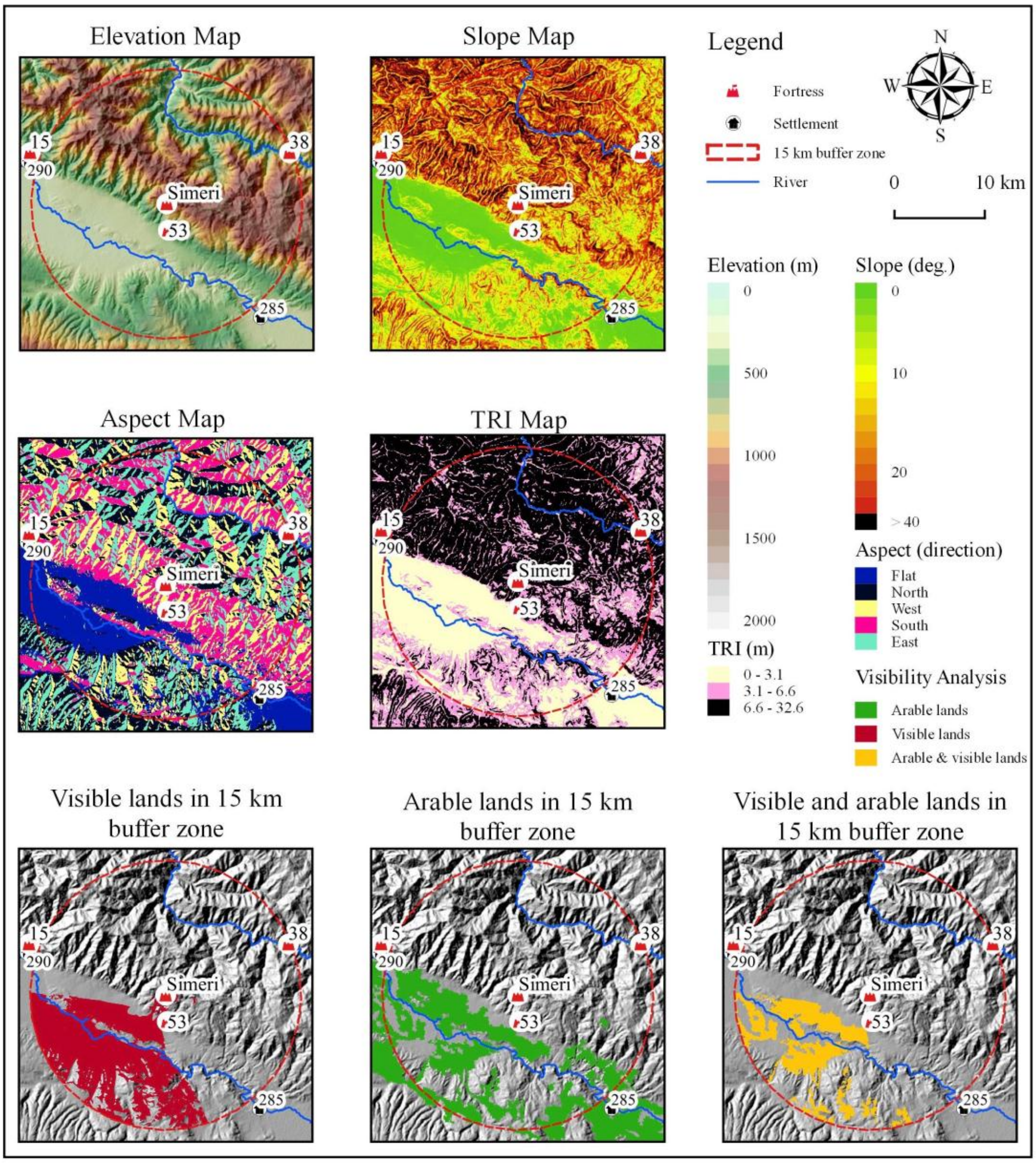
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.4	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	305028
County	Erbaa	**Northing, m**	4508197
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	501 m	**Visible area**	18.5 %
Slope	22.9°	**Arable area**	16 %
Aspect	South	**Visible & arable area**	7.4 %
TRI	10.4 m	**Median TRI**	5.6 m



Description

Basamaklı Geçit is located in Eyce Oluk area of the Geyne (Yoldere) village of Erbaa in Tokat. The is no further information available except for the rock cut stepped tunnel. The tunnel structure with 26 visible steps, down to the river bed is approximately 30 meters long. The bottom is closed with debris and rocks (Tokat Museum Inventory, p. 283). The fortress has a commanding position over the Erbaa plain, its analysis show that it should have administrative function. The visibility and the distribution of the agricultural lands for this fortress are quite high. Considering its location between Caberia and Boğazkesen Fortress, it probably served as signaling purpose as well.

ID:054- Simeri			
Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	0.6	**Dating**	HL
Location		**Projection**	UTM WGS84 37N
Province	Tokat	**Easting, m**	304847
County	Erbaa	**Northing, m**	4511115
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	913 m	**Visible area**	16.0 %
Slope	20.7°	**Arable area**	13 %
Aspect	South	**Visible & arable area**	7.2 %
TRI	10.5 m	**Median TRI**	6.4 m

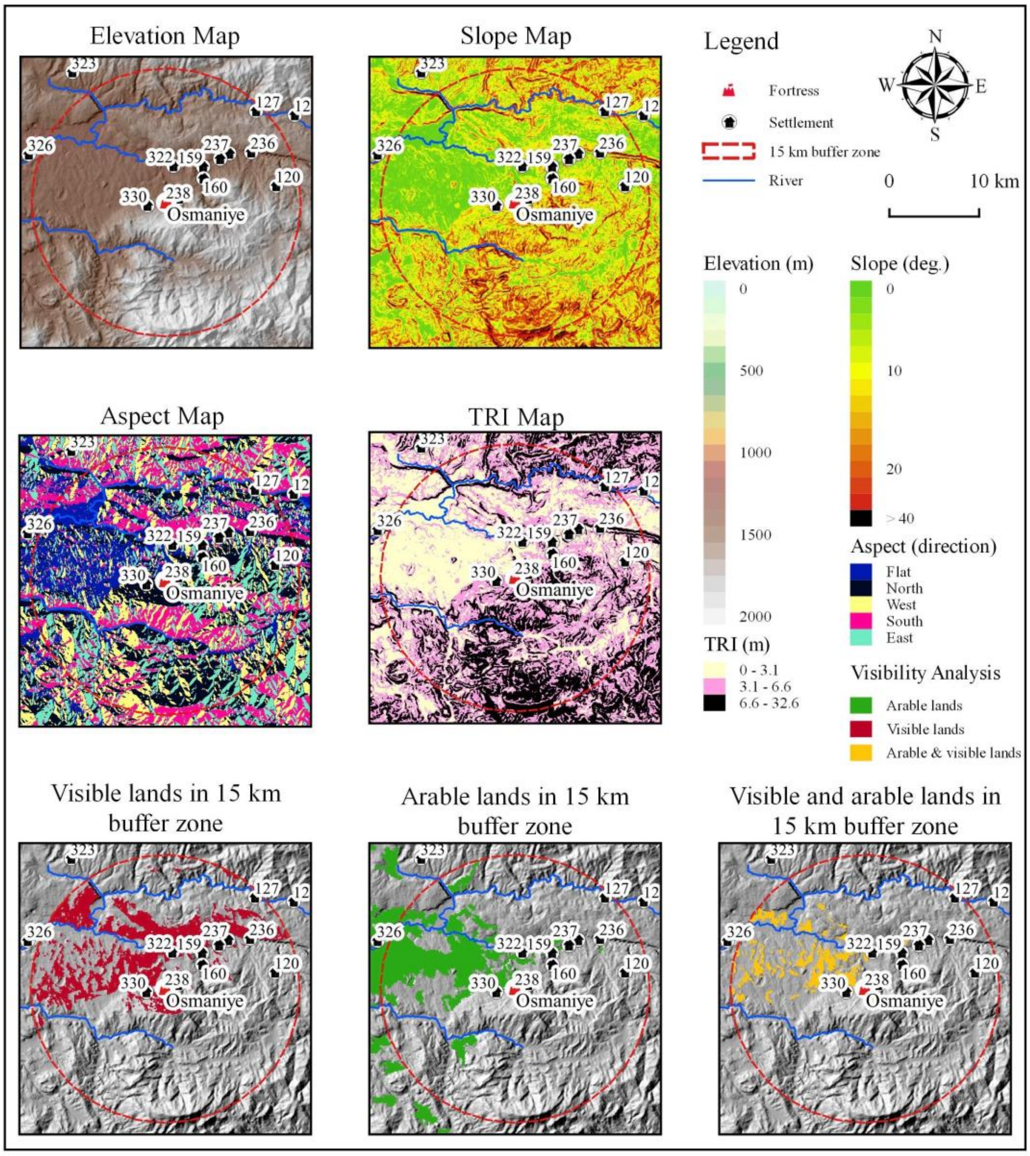


Description

Located in the Simeri (Güveçli) village of Erbaa in Tokat, the fortress has a commanding position over the Erbaa plain. On the steep outcrop, there is a rock-cut tunnel with 75 visible steps, probably going down to the river. No further information available (Tokat Museum Inventory, p. 292). The fortress is seems to Basamaklı Geçit in term of location and visibility. It mediates between Cabeira and Boğazkesen fortresses, probably served as signaling and purpose. It also controls considerable amount of agricultural lands by its visibility.

ID:402- Osmaniye Kalesi

Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.3	**Dating**	EBA/HL/ROM/BYZ/OTT
Location		**Projection**	UTM WGS84 37N
Province	Sivas	**Easting, m**	401106
County	Zara	**Northing, m**	4407129
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1580 m	**Visible area**	12.5 %
Slope	14.4°	**Arable area**	10 %
Aspect	South	**Visible & arable area**	3.6 %
TRI	7.7 m	**Median TRI**	4.1 m

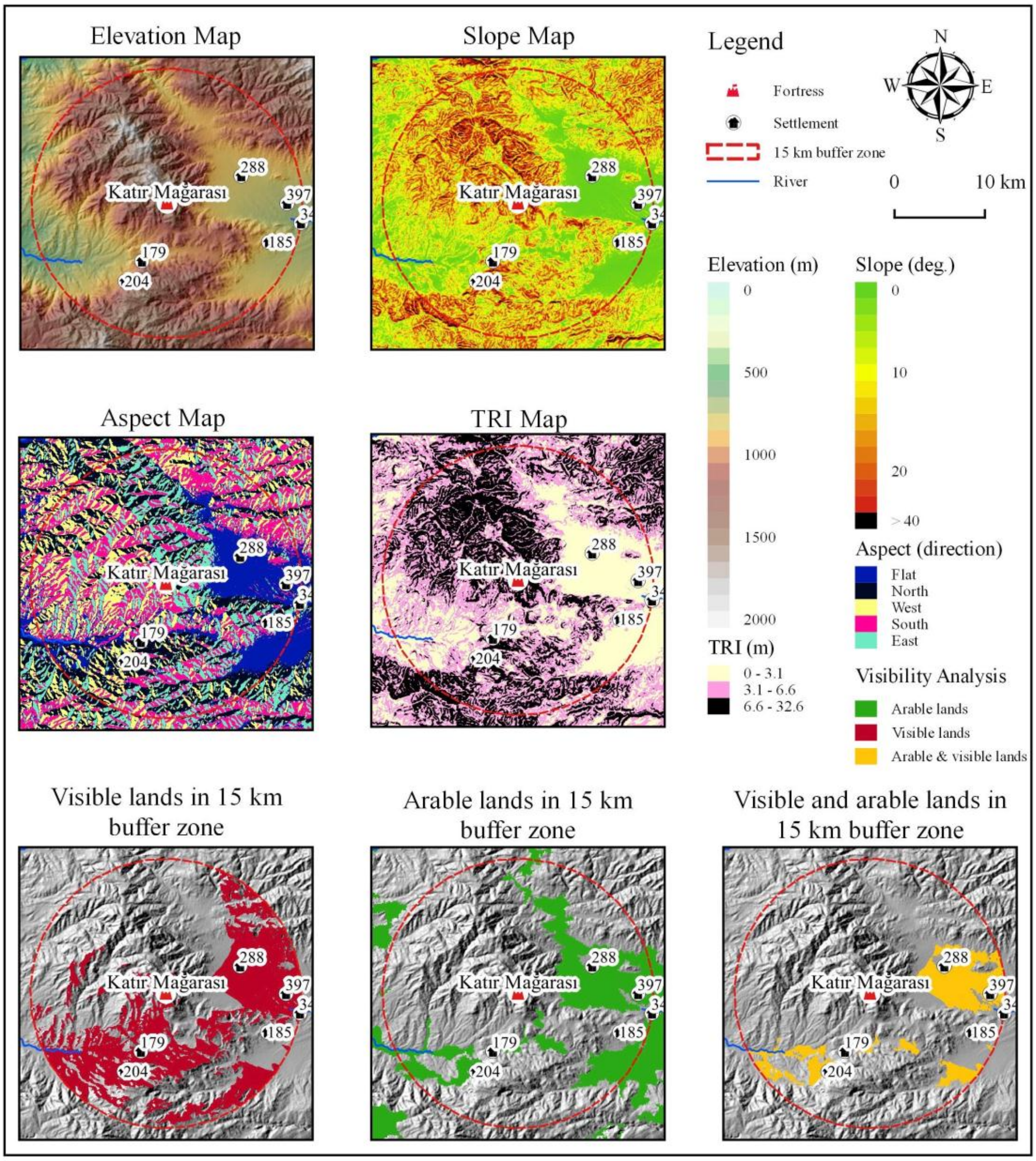


Description

A fortress and a mound settlement next to it stand in the village of Osmaniye of Sivas. The mound is situated on top of a high plateau. Engin identified a rock cut tunnel with 30 steps to the southwest of rocky slopes. Spolia used in the village house must have been taken from the settlement. Sherds collected from the mound were dated to belong to Early Bronze Age, Hellenistic, Roman and Middle Ages (Engin, 2012: 176). The fortress is located on the south border of Pontos and like all other fortresses in the region it is situated on a position that provides control of the surrounding agricultural areas and the valley it is located in.

Fortress from the east and the tunnel (Sivas Survey Project Archive)

ID:403- Katır Mağara			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	1.1	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Amasya	**Easting, m**	678940
County	Gümüşhacıköy	**Northing, m**	4522990
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1602 m	**Visible area**	25.2 %
Slope	5.2°	**Arable area**	14 %
Aspect	Flat	**Visible & arable area**	8.3 %
TRI	1.6 m	**Median TRI**	4.7 m



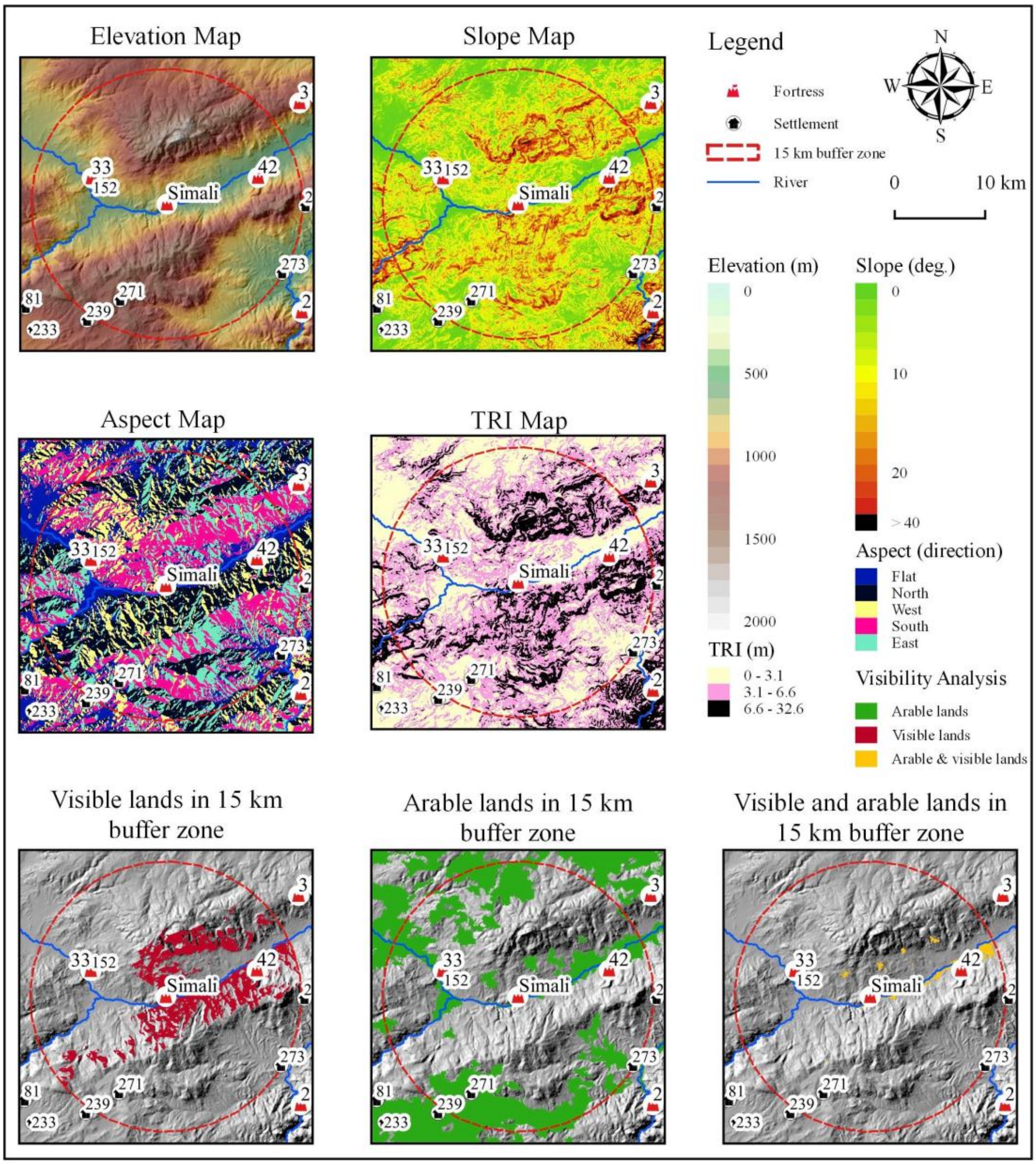
Description

Fortress is located on an outcrop in Amasya, near Gümüş village. There is no research conducted about the fortress. The rock-cut tunnel on the upper part of the fortress with 40 degrees inclination goes down approximately 80-90 metres. There is a watch-tower which was built on the north side of the fortress. Hellenistic age pottery sherds were found throughout the fortress (Amasya Museum Inventory). Katırmağara is situated in a position where it keeps great part of the Diacopene under its control. It is therefore thought to have served administrative function.

Tower remain on top of the fortress (Amaseia Museum Archive)

Detail of the tunnel (Amaseia Museum Archive)

ID:404- Simali			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.8	**Dating**	HL/BYZ
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	683554
County	Merkez	**Northing, m**	4469733
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	764 m	**Visible area**	9.3 %
Slope	26.0°	**Arable area**	19 %
Aspect	East	**Visible & arable area**	1.1 %
TRI	12.5 m	**Median TRI**	4.0 m



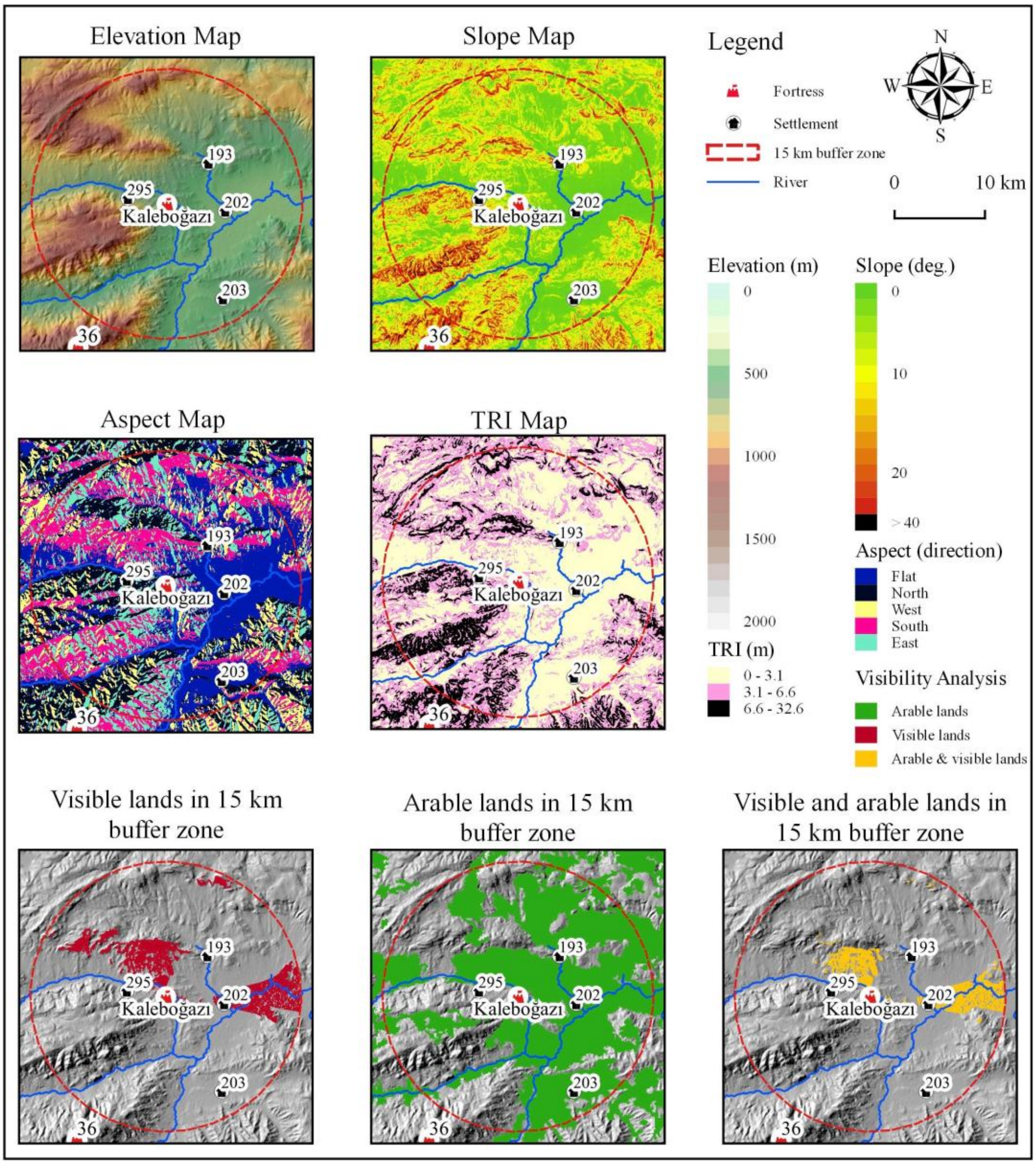
Description

It is a fortress located on top of the rocks southwest of the Örencik village of Çorum. It is located in the middle of the valley that one of the tributary of Çekerek river passes through. There is a rock-cut tunnel 15m above the southern slope of the rocks. Entrance is somewhat demolished. There are 25 steps observable. Length of the tunnel could not be measured since rest of the tunnel is flooded. Traces of holes on the southern slope of the rocks imply that a project was underway and but then halted at some point. Fortress keeps both valley and agricultural lands under its control. Therefore it essentially had an administrative function.

A view from north

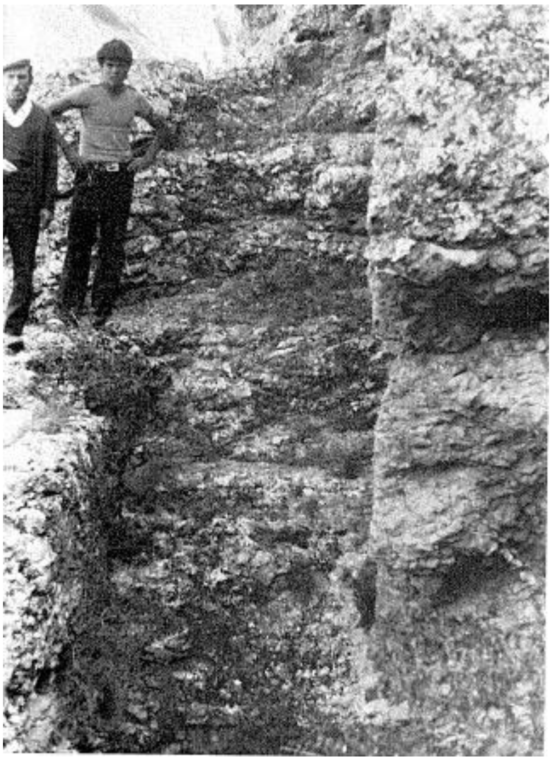
A detail of the tunnel

ID:405- Kaleboğazı			
Ancient Name(s)		**Proposed Function**	ADM
Size of Fortress, ha	0.9	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Amasya	**Easting, m**	716144
County	Merkez	**Northing, m**	4491836
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	549 m	**Visible area**	6.5 %
Slope	25.7°	**Arable area**	41 %
Aspect	North	**Visible & arable area**	4.2 %
TRI	9.5 m	**Median TRI**	2.6 m



Description

The fortress were discovered by Biller and Olshausen and the all informaiton about it came from their report. Kaleboğazı is located right bank of the Mecitözü River that runs into in the Kaleboğazı village of Amasya. The outcrop is approximately 10 meters high from river bed. According to the stone masonary the rock-cut tunnel, and the pottery sherd scattered around the field, Biller and Olshausen dated the fortress to the Hellenistic Period. The tunnel, located on the northern side reaches to the river (Biller and Olshausen, 1978: 176-7, pl. LXVI).

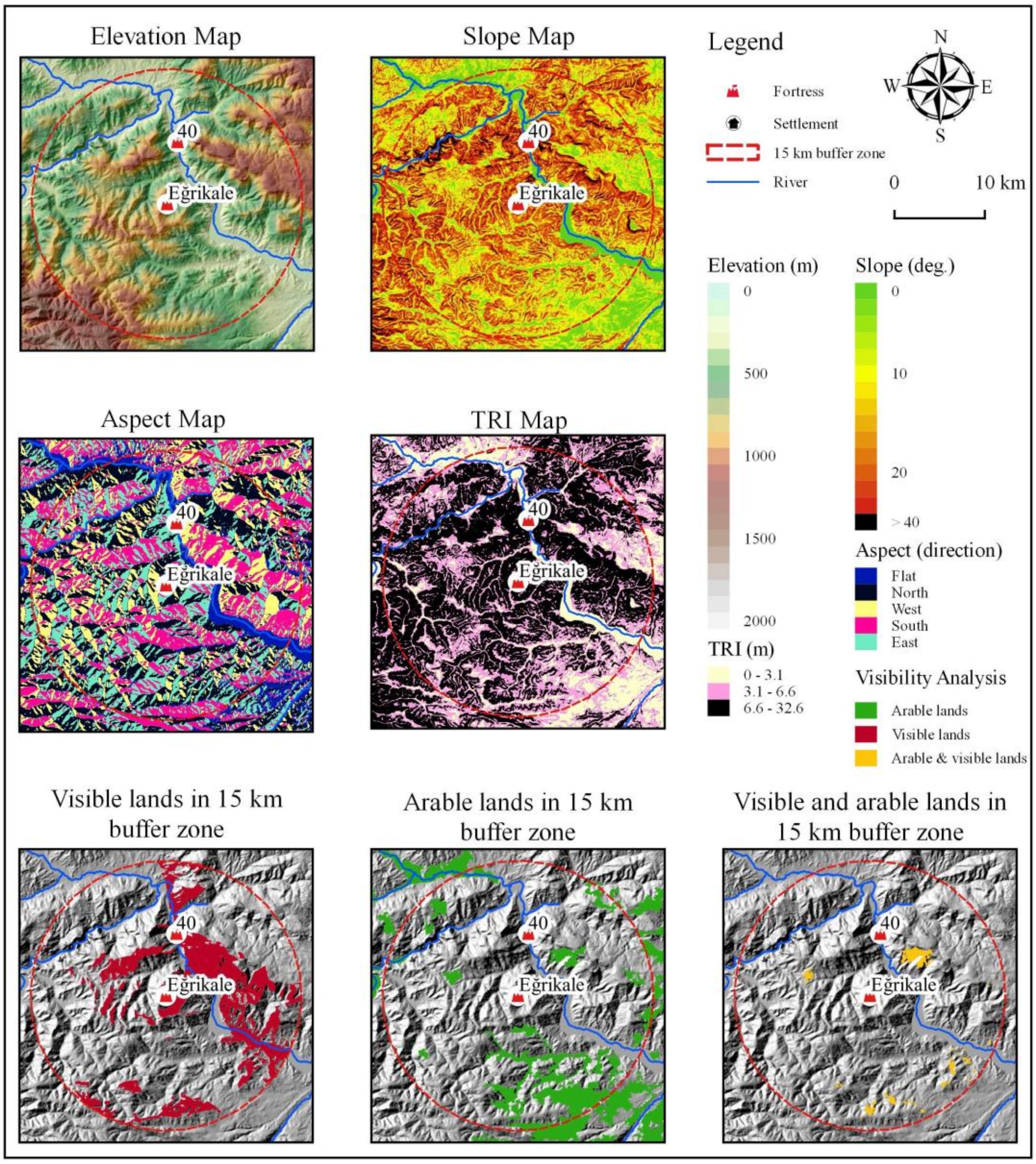


Biller and Olshausen, 1978: pl. LXVI

A view from fortress

ID:406- Eğrikale

Ancient Name(s)		**Proposed Function**	ND
Size of Fortress, ha	0.6	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Sinop	**Easting, m**	677970
County	Durağan	**Northing, m**	4573455
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	1000 m	**Visible area**	13.6 %
Slope	26.8°	**Arable area**	8 %
Aspect	North	**Visible & arable area**	1.0 %
TRI	10.5 m	**Median TRI**	7.4 m



Description

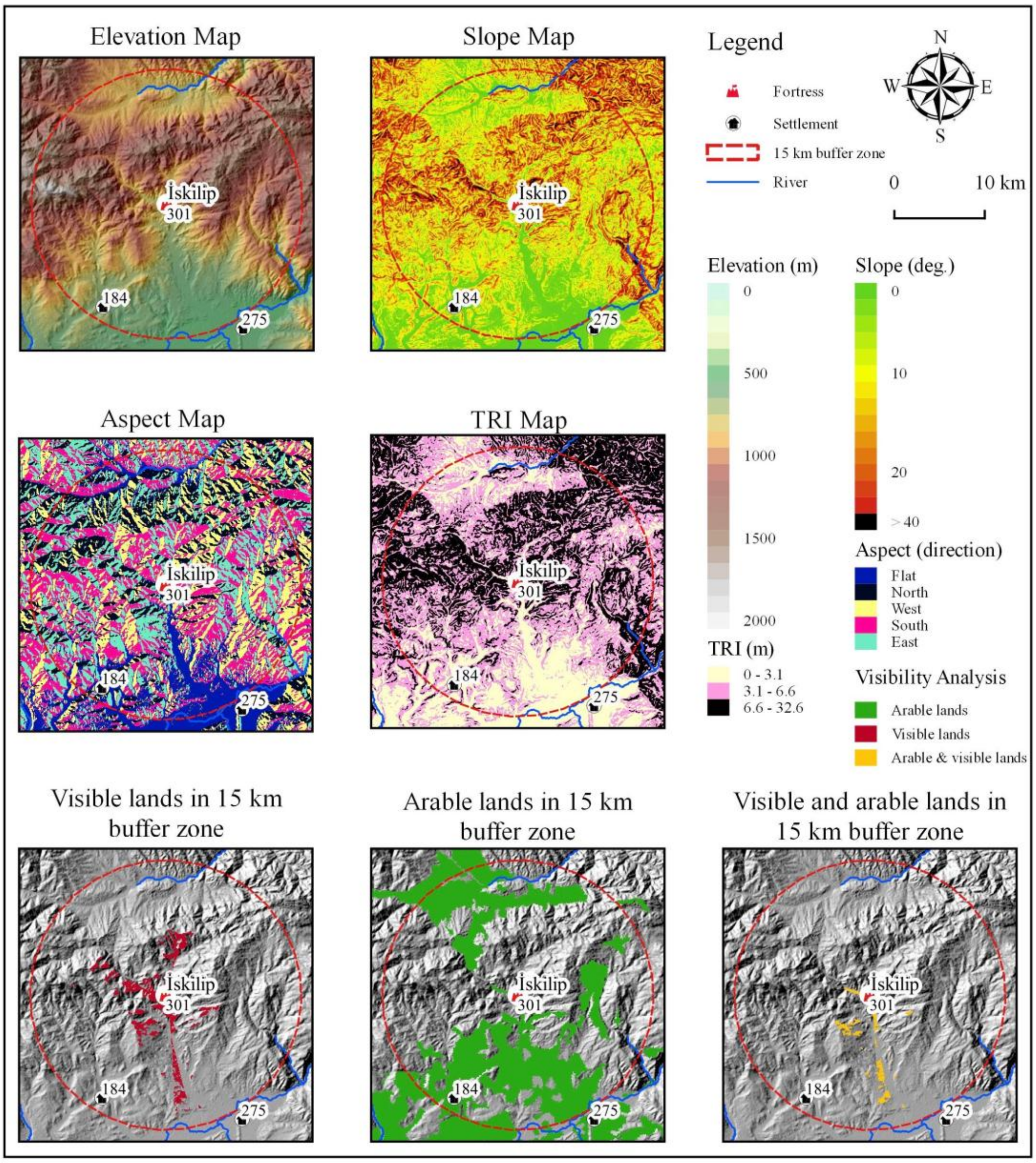
Eğrikale fortress is located west bank of the Halys River and 7 km far from Terelik fortress. The fortress is identified with Pteria, which Herodotos mentions (Olshausen and Biller 1984:161). Hamilton describes the topography rugged and very forestry (1842: 325). While considering the relationship with Terelik fortress, they both regulate the access to the valley. As stated by Hamilton, rugged and precipitous topograghy also underlines the defense function, instead of administrative.

A South face of the fortress

A view from fortress

ID:407- İskilip

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	2.2	**Dating**	HL/BYZ/OTT
Location		**Projection**	UTM WGS84 36N
Province	Çorum	**Easting, m**	624478
County	İskilip	**Northing, m**	4510283
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	797 m	**Visible area**	2.9 %
Slope	11.7°	**Arable area**	23 %
Aspect	East	**Visible & arable area**	0.7 %
TRI	6.7 m	**Median TRI**	4.9 m

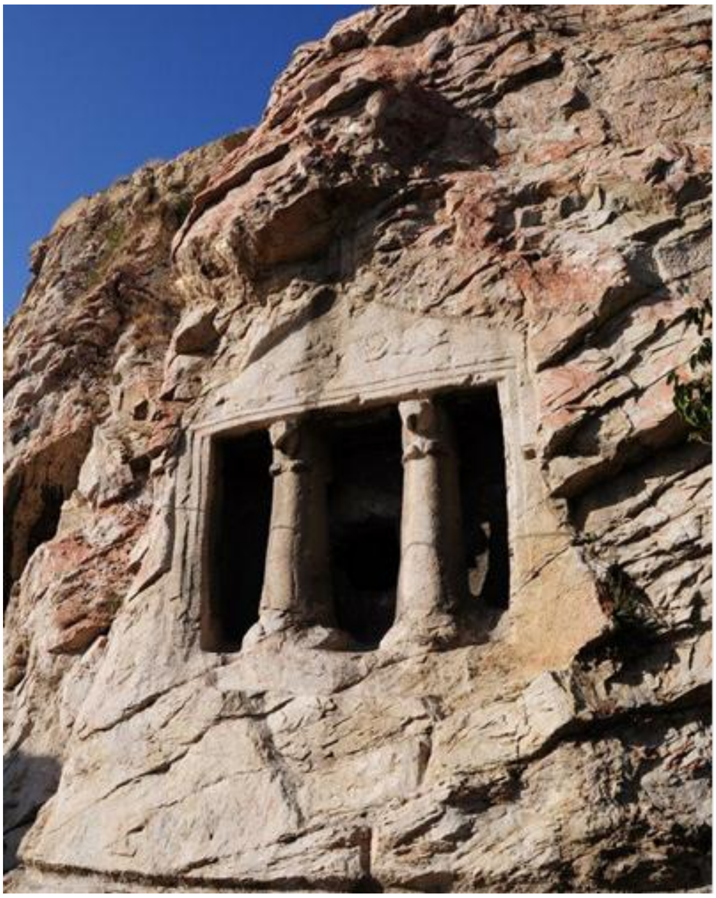


Description

Fortress in İskilip is located on a outcrop in the city center. It was highly occupied with Ottoman Period, inside the fortification wall inhabitation still continues. The outcrop takes place in a volcanic valley and Halys River passes 10 km east of the fortress. The tribute of the Halys comes near the the fortress. The outcrop houses four rock-cut tombs and a rock cut tunnel. The tunnel was reported by Gökoğlu and von Gall (Gökoğlu 1952:113; von Gall 1967:514).

Tombs were studied by Dökü in his dissertation (2008). They have some similar features with other rock-cut tombs in terms of column arrangements found in fortresses Terelik, Donalar, Salarköy (Dökü 2008:116, 118, 120-2). The column capitals with kneeling bulls can give as an examples for the resembling. Dökü dates the tombs to Hellenistic Period and possibly reused in Roman period.

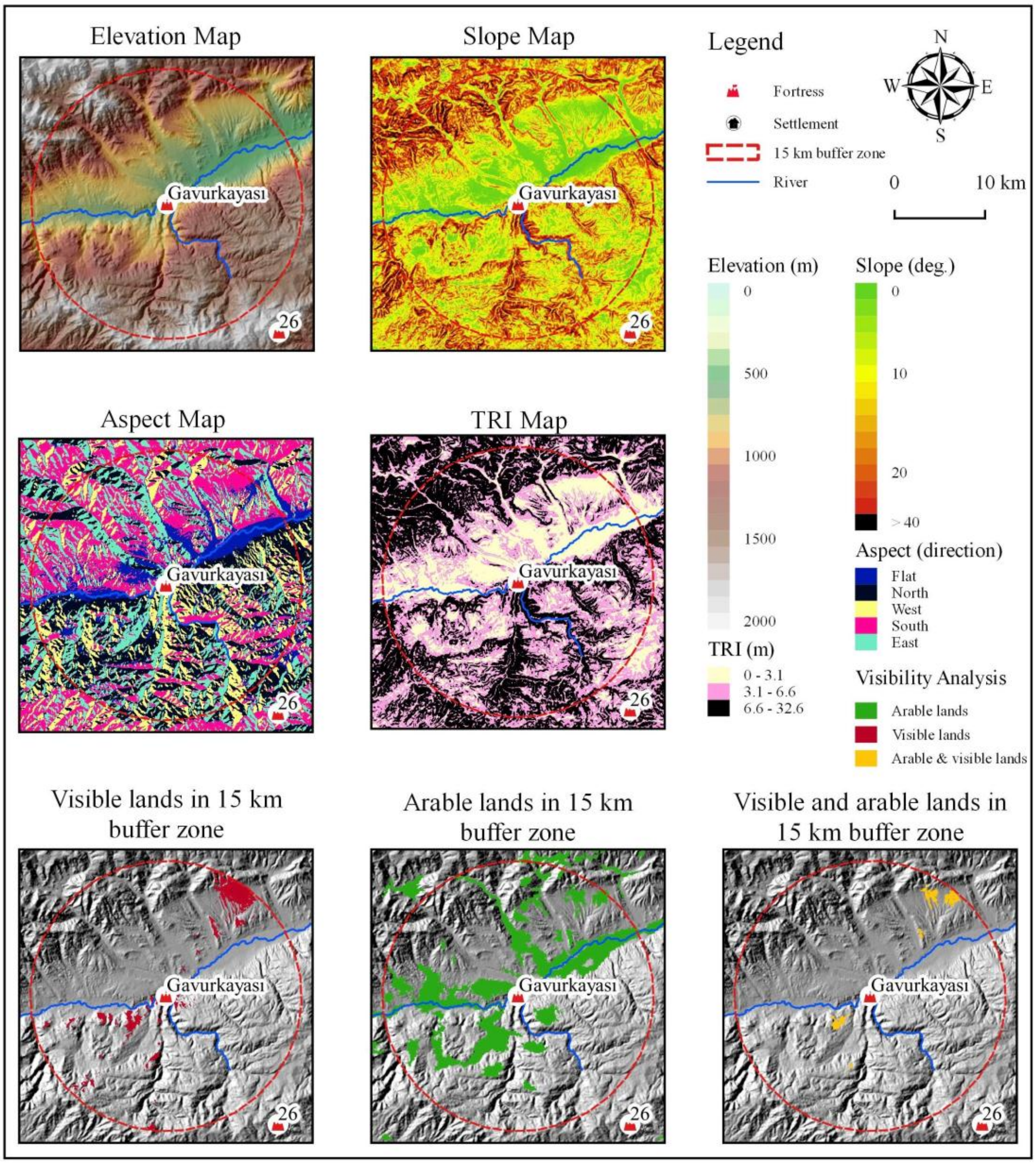
The fortress located on valley that opens to Halys River in one side, reaches to Amnias Valley in other side was possibly guard the passage.



A Paphlagonian style rock-cut tomb on the North facade of the fortress

ID:408- Gavur Kayası

Ancient Name(s)		**Proposed Function**	DEF
Size of Fortress, ha	0.7	**Dating**	HL
Location		**Projection**	UTM WGS84 36N
Province	Kastamonu	**Easting, m**	589534
County	Tosya	**Northing, m**	4535195
Topographic Properties			
Fortress		**15 km buffer zone of fortress**	
Elevation	616 m	**Visible area**	2.6 %
Slope	4.9°	**Arable area**	13 %
Aspect	South	**Visible & arable area**	0.7 %
TRI	2.6 m	**Median TRI**	5.2 m

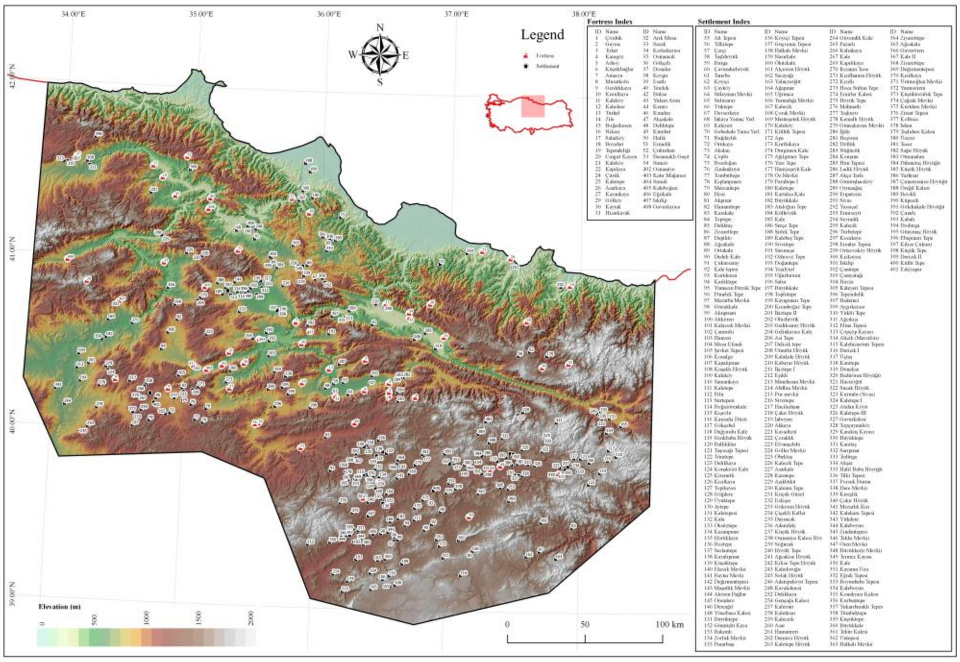


Description

Gavurkayası is located on a outcrop with fortification wall just near the Devrez River and it also has a rockcut tunnel and rock-cut tomb. The only information about the fortress comes from Gökoğlu. He dated all the features of the fortress to the Hellenistic period (1952:104-5), von Gall listed the tunnel based on Gökoğlu' report (1967:513). Its location inside the narrow valley underlines defense function of the fortress.

APPENDIX 2

LIST OF THE SETTLEMENTS AND THE FORTRESSES



APPENDIX 3

CHI-SQUARE TEST RESULTS FOR THE FORTRESSES

Elevation

Elevation, m	Observed # of Fortresses	Fortress, %	Region, %	Expected # of Fortress	Difference	Chi-square
0 - 300	5	8.77	4.75	2.71	4.03	1.95
300 - 600	10	17.54	8.91	5.08	8.63	4.76
600 - 900	15	26.32	17.12	9.76	9.20	2.82
900 - 1200	14	24.56	21.39	12.19	3.17	0.27
1200 - 1500	9	15.79	22.87	13.04	-7.09	1.25
1500 - 1800	4	7.02	18.70	10.66	-11.68	4.16
1800 - 2100	0	0.00	5.08	2.89	-5.08	2.89
2100 - 2400	0	0.00	1.17	0.67	-1.17	0.67
	57	100	100	57		18.77

Degrees of freedom = 7 Critical value at p 0.05 = 14.07

18.77 > = 14.07Fortress locations have significant divergence towards certain elevations.

Terrain Ruggedness Index (TRI)

TRI, m	Observed # of Fortresses	Fortress, %	Region, %	Expected # of Fortress	Difference	Chi-square
0 - 5	15	26.32	50.17	28.60	-23.85	6.46
5 - 10	30	52.63	35.06	19.98	17.57	5.02
10 -15	10	17.54	12.01	6.85	5.53	1.45
15 - 20	2	3.51	2.76	1.57	0.75	0.12
	57	100	100	57		13.05

Degrees of freedom = 3 Critical value at p 0.05 = 7.81

13.05 > = 7.81 Fortress locations have significant divergence towards certain TRI values.

Slope

Slope, degree	Observed # of Fortresses	Fortress, %	Region, %	Expected # of Fortress	Difference	Chi-square
0 - 5	7	12.28	24.41	13.92	-12.13	3.44
5 - 10	15	26.32	25.58	14.58	0.74	0.01
10 -15	18	31.58	20.31	11.62	11.20	3.51
15 - 20	4	7.02	13.87	7.91	-6.86	1.93
20 - 25	5	8.77	8.48	4.83	0.29	0.01
25 - 30	7	12.28	4.59	2.62	7.69	7.33
30 - 35	0	0.00	2.05	1.17	-2.05	1.17
35 - 40	1	1.75	0.64	0.36	1.12	1.12
	57	100	100	57		18.51

Degrees of freedom = 7 Critical value at p 0.05 = 14.07

18.51 > = 14.07 Fortress locations have significant divergence towards certain slope values.

Aspect

Aspect	Observed # of Fortresses	Fortress, %	Region, %	Expected # of Fortress	Difference	Chi-square
Flat	3	5.26	19.09	10.88	-13.83	5.71
North	20	35.09	21.49	12.25	13.60	4.91
East	8	14.04	19.66	11.21	-5.62	0.92
South	12	21.05	20.43	11.65	0.62	0.01
West	14	24.56	19.33	11.02	5.23	0.81
	57	100	100	57		12.35

Degrees of freedom = 4 Critical value at p 0.05 = 9.49

12.35 > = 9.49 Fortress locations have significant divergence towards certain directions.

Rock Type

Rock Type	Observed # of Fortresses	Fortress, %	Region, %	Expected # of Fortress	Difference	Chi-square
Recent sedimentary rocks	10	17.54	9.36	5.33	4.67	4.08
Sedimentary rocks	29	50.88	58.57	33.38	-4.38	0.58
Extrusive igneous rocks	5	8.77	10.20	5.81	-0.81	0.11
Intrusive igneous rocks	0	0.00	1.77	1.01	-1.01	1.01
Metamorphics	9	15.79	11.35	6.47	2.53	0.99
Ophiolite	4	7.02	8.76	4.99	-0.99	0.20
	57	100	100	57		6.97

Degrees of freedom = 5 Critical value at p 0.05 = 11.07

6.97 not > = 11.07 Fortress locations do not have any significant divergence towards any rock type.

Chi Square Test Results for Settlements

Elevation

Elevation, m	Observed # of Settlement	Settlement, %	Region, %	Expected # of Settlement	Difference	Chi-square
0 - 300	5	8.77	4.75	2.71	4.03	1.95
300 - 600	10	17.54	8.91	5.08	8.63	4.76
600 - 900	15	26.32	17.12	9.76	9.20	2.82
900 - 1200	14	24.56	21.39	12.19	3.17	0.27
1200 - 1500	9	15.79	22.87	13.04	-7.09	1.25
1500 - 1800	4	7.02	18.70	10.66	-11.68	4.16
1800 - 2100	0	0.00	5.08	2.89	-5.08	2.89
2100 - 2400	0	0.00	1.17	0.67	-1.17	0.67
	57	100	100	57		18.77

Degrees of freedom = 7 Critical value at p 0.05 = 14.07

18.77 > = 14.07Settlement locations have significant divergence towards certain elevations.

Terrain Ruggedness Index (TRI)

TRI, m	Observed # of Settlement	Settlement, %	Region, %	Expected # of Settlement	Difference	Chi-square
0 - 2	88	26.51	16.27	54.01	10.24	21.39
2 - 4	107	32.23	23.01	76.40	9.22	12.25
4 - 6	74	22.29	20.48	68.00	1.81	0.53
6 - 8	32	9.64	15.12	50.21	-5.49	6.61
8 - 10	17	5.12	10.34	34.32	-5.22	8.74
10 - 12	7	2.11	6.64	22.04	-4.53	10.26
12 - 14	4	1.20	4.04	13.42	-2.84	6.62
14 - 16	3	0.90	2.32	7.69	-1.41	2.86
16 - 18	0	0.00	1.21	4.03	-1.21	4.03
18 - 20	0	0.00	0.56	1.86	-0.56	1.86
	332	100	100	332		75.15

Degrees of freedom = 9 Critical value at p 0.05 = 16.92

75.15 > = 16.92Settlement locations have significant divergence towards certain TRI values.

Slope

Slope, degree	Observed # of Settlement	Settlemen t, %	Region, %	Expected # of Settlement	Difference	Chi-square
0 - 4	87	26.20	19.14	63.53	7.07	8.67
4 - 8	95	28.61	20.93	69.49	7.68	9.36
8 - 12	78	23.49	18.89	62.71	4.61	3.73
12 - 16	42	12.65	14.68	48.75	-2.03	0.94
16 - 20	20	6.02	10.61	35.21	-4.58	6.57
20 - 24	3	0.90	7.14	23.71	-6.24	18.09
24 - 28	5	1.51	4.47	14.83	-2.96	6.52
28 - 32	2	0.60	2.52	8.37	-1.92	4.85
32 - 36	0	0.00	1.19	3.96	-1.19	3.96
36 - 40	0	0.00	0.43	1.43	-0.43	1.43
	332	100	100	332		64.11

Degrees of freedom = 9 Critical value at p 0.05 = 16.92

64.11 > = 16.92Settlement locations have significant divergence towards certain TRI values.

Aspect

Aspect	Observed # of Settlement	Settlement, %	Region, %	Expected # of Settlement	Difference	Chi-square
Flat	70	21.08	19.09	63.38	1.99	0.69
North	66	19.88	21.49	71.34	-1.61	0.40
East	63	18.98	19.66	65.27	-0.68	0.08
South	56	16.87	20.43	67.84	-3.57	2.07
West	77	23.19	19.33	64.17	3.86	2.56
	332	100	100	332		5.80

Degrees of freedom = 4   Critical value at p 0.05 = 9.49

5.80 not > = 9.49 Settlement locations do nothave any significant divergence towards anydirections.

Rock Type

Rock Type	Observed # of Settlement	Settlement , %	Region, %	Expected # of Settlement	Difference	Chi-square
Recent sedimentary rocks	71	21.39	9.36	31.07	12.03	51.32
Sedimentary rocks	196	59.04	58.57	194.44	0.47	0.01
Extrusive igneous rocks	29	8.73	10.20	33.85	-1.46	0.70
Intrusive igneous rocks	1	0.30	1.77	5.88	-1.47	4.05
Metamorphics	14	4.22	8.76	29.09	-4.54	7.82
Ophiolite	21	6.33	11.35	37.67	-5.02	7.38
	332	100	100	332		71.28

Degrees of freedom = 5   Critical value at p 0.05 = 11.07

71.28 > = 11.07 Settlement locations have significant divergence towards certain rock type.

APPENDIX 4

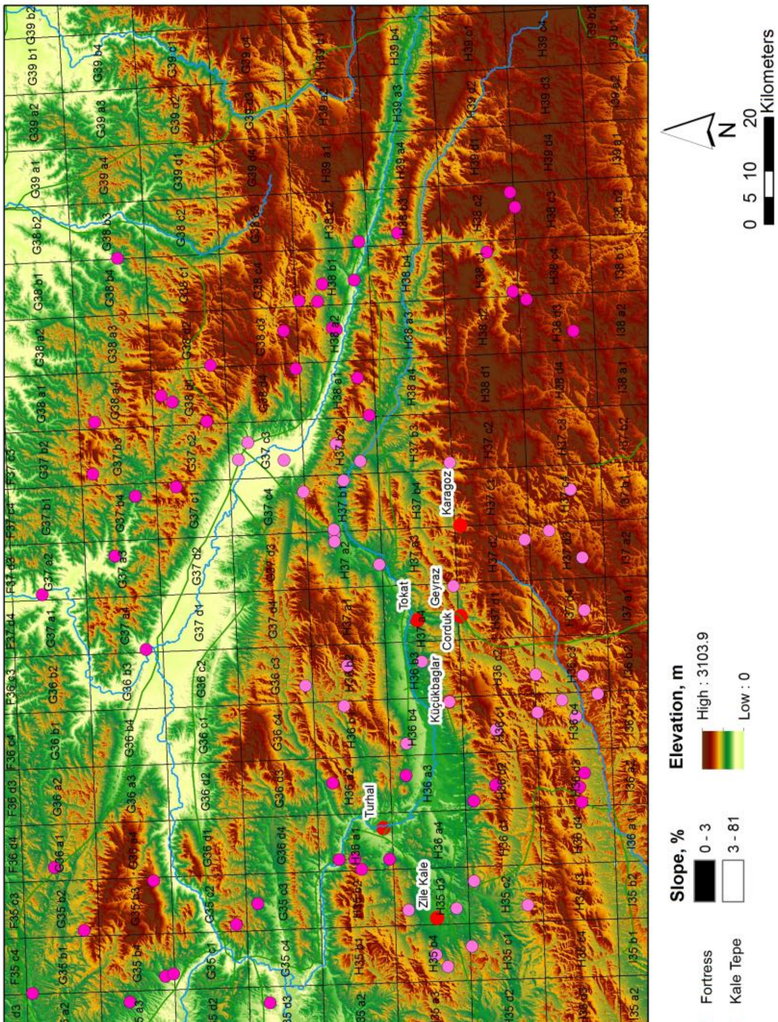
POSSIBLE FORTRESS LOCATIONS

ID	APPENDIX 4 Name	X_UTMWGS84	Y_UTMWGS84	Zone
1	Kaletepe Hacıbükü	301,005	4,497,992	37
2	Nifikkalesi T.	284,045	4,479,687	37
3	Kaleboynu T. - Uckayalar	283,805	4,465,681	37
4	Kale T.	268,724	4,469,591	37
5	Asar T.	270,167	4,452,683	37
6	Kale T.	279,971	4,444,578	37
7	Çobankale T.	279,242	4,435,739	37
8	Kale T.	272,891	4,444,745	37
9	Kale T.	274,903	4,440,000	37
10	Kale T.	271,649	4,437,622	37
11	Asarkale T.	275,600	4,433,266	37
12	Maltepe - Watchtower	302,469	4,472,400	37
13	Kucuk Kalecik T.	308,802	4,480,379	37
14	Kalecik T.	309,662	4,480,505	37
15	Maltepe?	307,362	4,480,492	37
16	Kale T. - Sevindik	297,566	4,458,827	37
17	Asar T. - Kadıvakfı	318,656	4,478,076	37

ID	APPENDIX 4 Name	X_UTMWGS84	Y_UTMWGS84	Zone
18	Kale T. - Sağırlar	325,615	4,478,998	37
19	Hasankale T. - Almus	322,061	4,474,667	37
20	Kale T. - Gürmüş Y.	320,709	4,457,964	37
21	Asar T. - Akoren	314,159	4,435,765	37
22	Kale T. - Doğanlı	305,325	4,444,965	37
23	Kale T. – Doğanlı II	306,725	4,440,254	37
24	Kale T. - Danisment	301,275	4,434,417	37
25	Delikkaya T. - Kizik	291,393	4,434,654	37
26	Delikkaya T. - Çerdiğin	280,798	4,487,727	37
27	Delik T. - Niksar	323,905	4,497,368	37
28	Kale T. - Donekse - Boğazbaşı	323,267	4,488,915	37
29	Kale T. - Ohtap - Tahtali - Yeşilkaya	317,057	4,485,675	37
30	Kale Tepe	729,847	4,523,148	36
31	Kale Tepe	731,459	4,541,399	36
32	Kale Tepe	743,315	4,531,692	36
33	Asarkaya Tepe	752,601	4,518,710	36
34	Kale Tepe	734,683	4,516,452	36
35	Kale Tepe	735,162	4,514,915	36
36	Kaleyiri tepe	744,417	4,503,191	36
37	Kale Tepe	748,357	4,499,170	36
38	Kavurkalesi Tepe	722,312	4,504,264	36
39	Kale Tepe	729,772	4,496,877	36
40	Kaleboğazı	716,431	4,492,558	36

	APPENDIX 4			
ID	**Name**	**X_UTMWGS84**	**Y_UTMWGS84**	**Zone**
41	Kale Tepe	250,091	4,537,100	37
42	Kale tepe	301,203	4,535,852	37
43	Kale Tepe	307,525	4,521,797	37
44	Kaledüzü Tepe	323,085	4,524,893	37
45	Kale tepe	319,634	4,509,482	37
46	Kale Tepe	347,404	4,487,425	37
47	Kale tepe	340,208	4,485,621	37
48	Kertil Tepe	332,787	4,523,871	37
49	Kale Mahallesi	363,143	4,517,516	37
50	Kale Tepe	331,475	4,502,947	37
51	Kaleboynu Tepe	336,871	4,511,122	37
52	Kale tepe	335,547	4,509,143	37
53	Kale Tepe	341,947	4,501,499	37
54	Kale Tepe	247,904	4,483,785	37
55	Kale Tepe	247,788	4,480,808	37
56	Kafurkale Tepe	245,792	4,479,698	37
57	Kafurkalesi Tepe	247,323	4,474,328	37
58	Kale Tepe	262,309	4,484,004	37
59	Eskiasarcik Örenleri	262,794	4,470,168	37
60	Kale Tepe	259,919	4,453,537	37
61	Kale Tepe	255,584	4,437,619	37
62	Kaleçalı Tepe	258,425	4,437,863	37
63	Kalecik Tepe	260,966	4,436,841	37
64	Akıncıkale Tepe	337,758	4,474,247	37

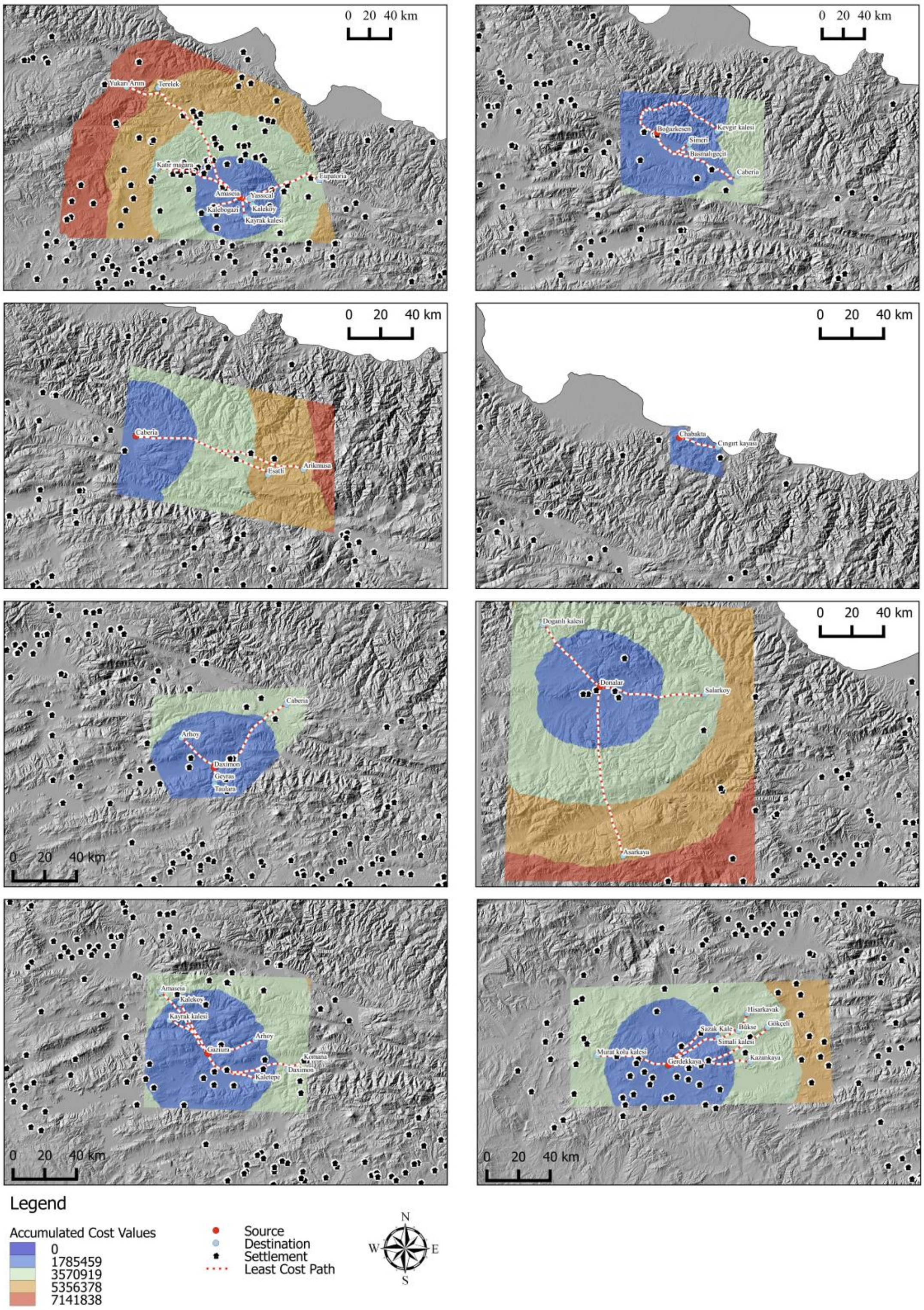
ID	APPENDIX 4 Name	X_UTMWGS84	Y_UTMWGS84	Zone
65	Kalecik Tepe	330,578	4,472,507	37
66	Kale Tepe	347,323	4,478,278	37
67	Delikkaya	347,036	4,477,567	37
68	Kale Tepe	352,876	4,484,120	37
69	Kale Tepe	352,457	4,480,653	37
70	Eskikale Tepe	355,658	4,479,564	37
71	Melgenkale Tepe	356,006	4,473,575	37
72	Kale Tepe	363,121	4,472,224	37
73	Kale Tepe	343,728	4,433,325	37
74	Kale Tepe	350,209	4,441,652	37
75	Kalekaya	364,285	4,464,876	37
76	Kale Tepe	359,587	4,448,504	37
77	Kale Tepe	351,866	4,444,136	37
78	Kale Tepe	370,439	4,443,399	37
79	Kale Tepe	367,647	4,442,627	37
80	Kaletepe-H35c2	748,026	4,448,430	36
81	Kaletepe	752,512	4,458,549	36
82	Gavurkale tepe	740,287	4,458,961	36
83	Kaleycik tepe	738,734	4,465,611	36
84	Kaletepe	736,477	4,463,411	36
85	Merdivenkaya tepe	747,464	4,461,836	36
86	Kaletepe	747,099	4,470,777	36

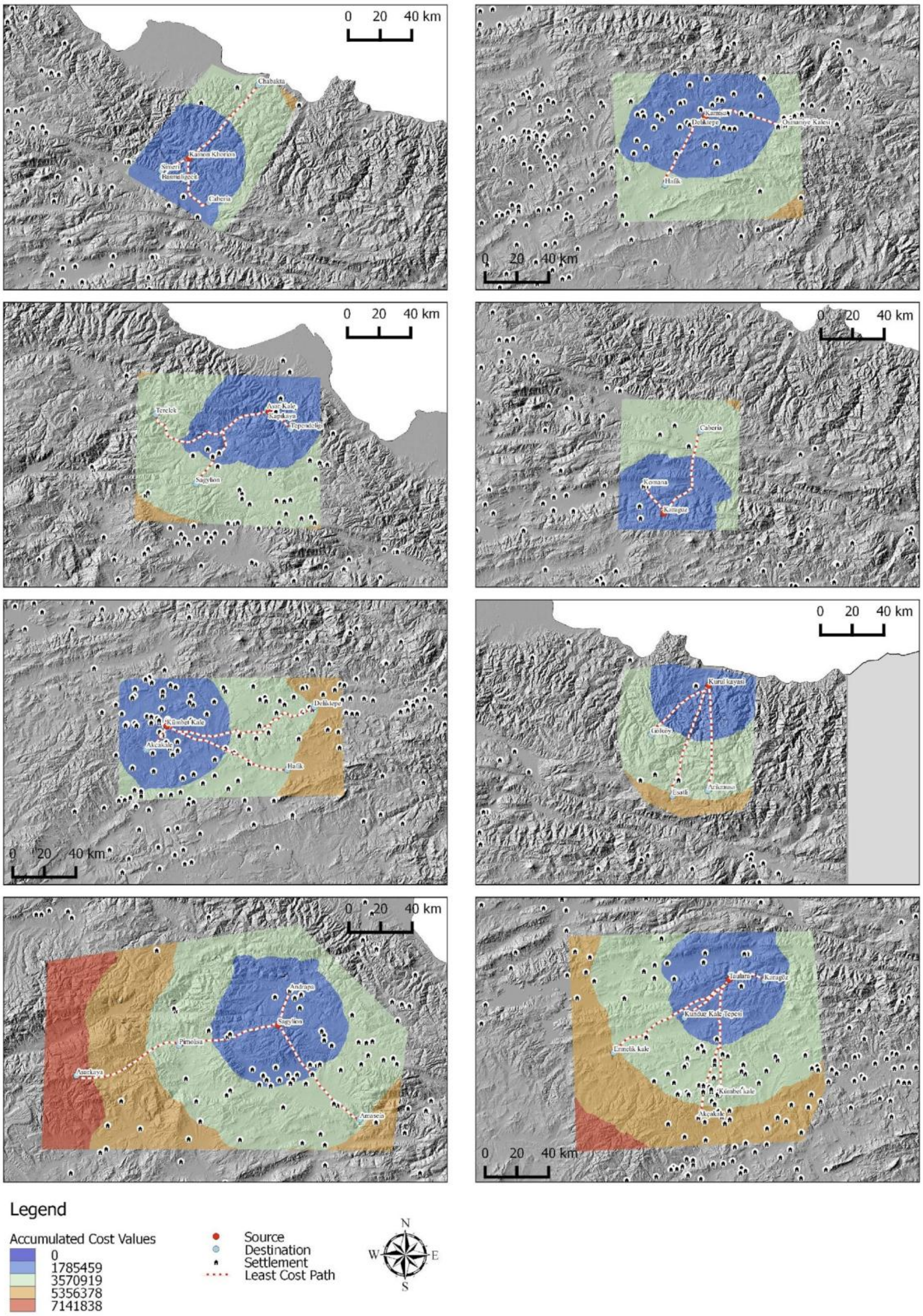


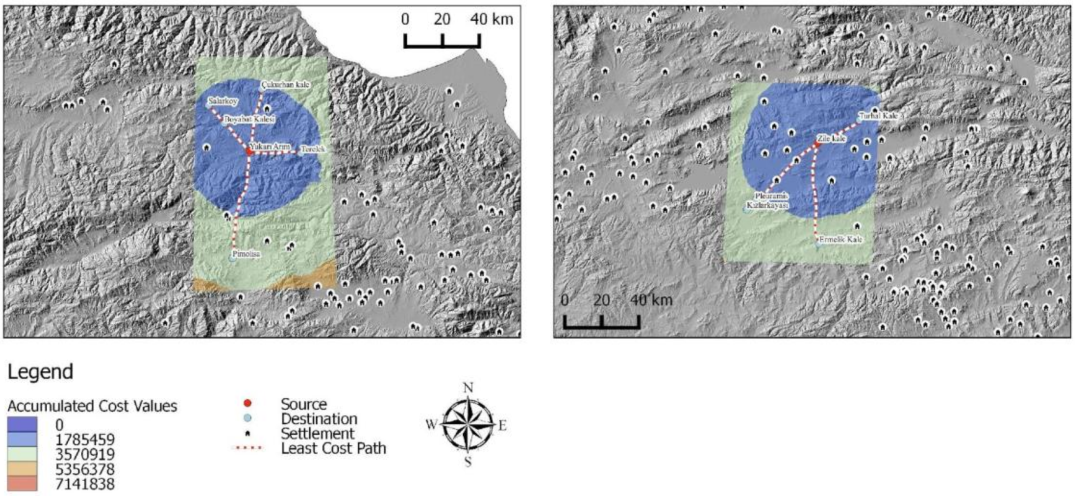
Legend
Rivers
Roman roads
Fortress
Kale Tepe
Slope, %
0 - 3
3 - 81
Elevation, m
High : 3103.9
Low : 0
0 5 10 20 Kilometers
N
Zile Kale
Turhal
Küçükbağlar
Tokat
Corduk
Geyraz
Karagoz

APPENDIX 5

RESULTS OF LEAST COST PATH ANALYSIS




0 20 40 km
Legend
Accumulated Cost Values
0
1785459
3570919
5356378
7141838
Source
Destination
Settlement
Least Cost Path
N
E
S
W


0 20 40 km
Çukurhan kale
Salarkoy
Boyabat Kalesi
Yukarı Arım
Terelek
Pimolisa
Turhal Kale
Zile kale
Pleuramis
Kızlarkayası
Ermelik Kale
0 20 40 km
Legend
Accumulated Cost Values
0
1785459
3570919
5356378
7141838
Source
Destination
Settlement
Least Cost Path
N
W
E
S

APPENDIX 6

TURKISH SUMMARY/TÜRKÇE ÖZET

Savunma Mevhumu Hellenistik dönem tarihinde en çok karşımıza çıkan konulardan biridir. Dönemin çalkantılı ve savaş odaklı doğası gereği, savunma üzerinden toplulukların ekonomisi, sosyal yapısı ve askeri organizasyonu hakkında bir çok bilgiye ulaşmak mümkündür. Ardı arkası kesilmeyen bu savaş ikliminde Anadolu'da kendi halinde varlığını sürdüren küçük krallıklar, tarih sahnesinde yer almalarını sağlayacak olan otorite boşluğunu iyi değerlendirmişlerdir. Bunlardan biri olan Mithradat Krallığı Orta Karadeniz Bölgesi'nde Amasya'yı merkez almış yönetsel bir güç olarak karşımıza çıkmaktadır. Hellenistik dönemin diğer krallıklarından farklı olarak Mithradat'lar kentleşme politikası gütmemiş, kırsalın efektif bir şekilde yönetilmesine dair bir düzenleme gerçekleştirmişti. Verimli tarım arazileri, bu arazilerden elde edilen ürünü krallık ekonomisi için katkıya dönüştüren köy toplulukları ve bunların içinde bulunduğu vadileri, önemli geçiş noktalarını koruyan-gözeten kaleler ile kült merkezleri, krallığın yönetsel organizasyon şemasını oluşturmaktaydı.

Hanedanlık köklerini Perslere dayandırma iddiasındadır. Pontos kralları, sınırları genişledikçe ve güçlendikçe köklü bir geçmiş yaratma çabasına girmişlerdir. Kendisinden önce hakimiyet alanlarında etkin olan Pers kültürü ile dönemin konjonktürne uygun olarak Hellen etkisini birleştirmiş bir siyasal ve dinsel organizasyonu benimsemişlerdir. I. Pharnakes'den itibaren Pontos Krallığı'nın Pers döneminden beri var olduğu iddia edilmiş ve bu iddia Mithradates Eupator döneminde resmi propaganda haline gelmiştir. Krallığın temelleri M.Ö. 301 yılında Ktistes ünvanı ile bilinen I. Mithradates tarafından Paphlagonia bölgesinde Kimiata'da atılmıştır. I. Mithradates Ktistes Anadolu'daki diadokhlar arasındaki mücadelelerden yararlanarak hızlı bir genişleme politikası izlemiştir. Amaseia'yı topraklarına katmış ve krallığın başkenti ilan etmiştir. VI. Mithradates'e kadar olan krallar, Anadolu'nun özellikle batısında egemen bir güç olan Roma ile uyumlu bir politika izlemişlerdir. VI. Mithradates kendinden öncekilerden farklı olarak Roma hegemonyasına karşı baş kaldıran bir tavır sergilemiş, krallığı yaklaşık 30 yıl sürecek olan çekişmeli bir savaşa sürüklemiştir. Pontos'un ilk kralları hakkında az bilgiye sahip olmamıza rağmen, M.Ö. 120-63 yılları arasında hüküm sürmüş son kral VI. Mithradates'in idaresi hakkında çok daha detaylı bilgi bulunmaktadır. Krallığın var olma mücadelesinde en önemli aktör olması ve krallığın idari ve askeri yapısına ilişkin yegane bilgilerin Roma'ya karşı gerçekleşmiş olan savaş sırasında kaydedilmiş olması itibariyle bu tez çalışmasının tarihsel çerçevesini oluşturur. Krallığın askeri ve idari yapılanmasına ışık tutmayı amaçlayan bu tez çalışması krallık coğrafyasında dağılım göstermiş olan kalelerin tanımlanmasını ve bu yolla fonksiyonlarının belirlenmesini hedeflemiştir. Bu bağlamda Hellenistik dönemde Pontos olarak bilinen Orta Karadeniz Bölgesini kapsayan Amasya, Tokat, Çorum, Ordu, Yozgat, Samsun ve Sinop illerinde 57 kale tespit edilmiştir. Bu kalelerin topografik ve çevresel özelliklerinden yola çıkılarak üstlenmiş olabilecekleri fonksiyon anlaşılmaya çalışılmıştır. Bunu yaparken krallık ekonomisinin temelini oluşturan tarımsal araziler ile kalelerin ilişkisi Coğrafi Bilgi Sistemlerinin sağladığı analiz altyapısı ile değerlendirilerek fonksiyona dönük olarak çıkarımlarda bulunulmuştur. Bu çalışma, Anadolu coğrafyasında askeri ve idari ilişkiler ağı içinde Hellenistik dönem savunma birimlerini bütüncül olarak ilk defa değerlendirmekte ve bu yönüyle bundan sonraki çalışmalara karşılaştırma verisi sağlamaktadır.

Kalelerin Mithradat Krallık coğrafyasında üstlenmiş oldukları fonksiyonları (idari ve askeri) aktarmadan önce kalelerin dağılım gösterdiği *territorium*un nasıl idare edilmiş olduğunu anlamak aynı zamanda kalelerin üstlenmiş olabileceği yönetim erkinin anlaşılmasında önemlidir.

Savunma ve korunma mevhumu insana doğuştan gelen bir güdüdür. İnsanın hayatını idame ettirebilmek için temel gereksinimlere ihtiyacı vardır, beslenme barınma ve neslini devam ettirebilme gibi. Bu temel gereksinimleri karşılayabilmek için de korunmaya ve savunmaya ihtiyaç duymuştur. Yaşadığı çevrenin koşullarını keşfetmesinin ardından bu güdü şekil değiştirerek insanın hayatında yer almaya devam etmiştir. Varolmanın ve var kalabilmenin en önemli koşulu tehlikelere karşı korunmak ve yeri geldiğinde kendini savunmaktır.

Yunan *'poleis'* kavramının oluşması ile birlikte hem kentsel hem de kırsal bazda, kentlerin, krallıkların politik ve ekonomik kazanımlarını güvence altına almasını sağlayan savunma hatları oluşturulmuştur Güçlü, dayanıklı ve ihtişamlı sur duvarları kentleri çepeçevre kuşatmaktaydı ve günümüzde bile bu kentlerden geriye en iyi durumda sur duvarları ulaşmaktadır. Kenti koruyan sur duvarı haricinde kentlerin/krallıkların sahip oldukları *territorium*ları savunma ağı ile donattıklarını görmek mümkündür. Böylece kırsal yaşamın ve tarımsal aktivitelerin gerçekleştiği arazilerin korunması sağlanırken *poleis* için de erken uyarı sistemi oluşturulmuş oluyordu Topografyada stratejik noktalarda, yolların geçtiği vadilerin kenarlarında geçitlere hakim konumlarda kurulmuş olan kaleler gözetleme ve koruma görevlerini yerine getirmekteydi Hellenistik dönemde kırsal alanlar kaleler ve gözetleme kuleleri ile kontrol altında tutulmakta ve korunmaktaydı (McNicoll, 1997: 208). Tarıma bağlı ekonomilerin garanti altına alınmasında bu kalelerin doğrudan önemli olduğunu söylemek mümkündür. Ober, Hellenistik dönem itibariyle kırsalda düzenli bir savunma ağı oluştulumaya başlandığını iddia eder ve bunu, dönemi tanımlayan strateji politikalarından biri olduğunu düşünür (1985: 75). Anadolu'daki Hellenistik dönem krallıklarının savunma stratejilerinin kırsal özelinde nasıl tasarlanmış olduklarına dair yapılmış herhengi bir çalışma henüz yoktur. Ancak kısmi bilgiler ışığında Seleukos'ların kırsalda dağınık halde bulunan kaleleri güvenlik ve kontrol amaçlı vadilelerin daralan noktalarına konumlandırdıklarını söylemek mümkündür.

'Territorium' ve 'kale' kelimeleri genelde birlikte kullanılmaktadır. Kale *territorium*u sınırlar ve koruma sağlar. *Territorium*ların yegane öğesi tarımsal alanlar ve kırsal yerleşimlerdir. Kalelerin en temel fonksiyonu askeri müdehalelere yada haydutluk aktivitelerine karşı etki alanındaki arazileri korumaktı. Bu konuya dönük olarak epigrafik kaynaklar destekleyici bilgi sunarlar, örneğin Attika'da bulunan Rhamnus kalesi ile ilgili bir yazıt, kalenin çevredeki tarımsal üretime ve çiftçilere göz kulak olduğunu ve kalenin komutanları tarafından güvenliklerinin sağlandığını aktarmaktadır. Son zamanlarda Kıta Yunanistan'da gerçekleştirilen çalışmalar kırsalda dağınık halde bulunan savunma birimlerinin, tarımda ve endüstride kullanılmış olan iş gücünün kontrolü ve güvenliği için inşa edilmiş olabileceğini önermektedir. Nitekim yukarıda da değinildiği gibi tarımsal alanlar hayatın idame ettirilmesinde hayati öneme sahip olmaları bakımından kentlerin/krallıkların korunması öncelik gerektiren zenginlikleriydi.

Hellenistik dönem krallıkların yöntetsel yapılanmasında taşra teşkilatlanması ve buradan alınan vergiler oldukça önemli bir yere sahipti. Köyler (komai) vergi ödeme zorlunluğu olan yerleşim tipiydi ve küçük ölçekli köyler verginin ödenmesi yönünde kendisinden büyük olan köy yerleşimlerine tabiydi. Vergiler köy topluluğunun yetkili kişisi olan *Khiliarkh* tarafından toplanarak kendi, emrindeki çalışanlar ve ordunun ödemeleri için harcanmaktaydı. Geri kalan miktar bölgenin yönetsel merkezine yönlendiriliyordu. *Khiliarkh*lar çoğu zaman yerel kalelerden birinin komutanı olarak karşımıza çıkmaktadır, bu yönüyle askeri temelli bir yönetim şemasının varlığı söz konusudur. Nitekim Hellenistik askeri yapılanmasında *khiliarkh* askeri rütbe olan *hegemon* ile eş değerdi ve Hellenistik dönemin krallıklarından Ptolemaios ve Seleukos ordularında 1000 kişiden oluşan piyade birliğine komutanlık ederdi. Seleukos yönetim sisteminde bahsi geçen sistem *hyparkh* adı verilen bölünmüş birimler olarak karşımıza çıkmaktadır. Bu birimsel yönetim biçimi Akhaemenidlerin satraplık sisteminin bir uzantısıdır. Bu sistemin temelinde tarımsal aktivitelerden elde edilen gelirlerin arttırılması vardır, böylece politik ve askeri anlamda krallığın kalkınması asıl hedeflenen amaçtır. Mithradat Krallığı'nın güney komşusu ve aynı zamanda ortak geçmişe ve köklere sahip Kappadokia'da yönetsel birim olarak *strategiai*nın var olduğunu ve hatta Kappadokia'nın 10 *strategiai*ya bölünmüş olduğunu bilmekteyiz. *Strategia,* yani mülki idare amirlik birimleri satraplık sisteminin alt birimi olarak bölgenin yönetimini sağlamaktaydı. Bu yönetim şekli Roma'nın Anadolu'da şehirleşmeyi arttırmak adına yaptığı yapılandırma çalışmalarına kadar bu şekilde devam etmiştir. *Strategiai* birimlerinin yöneticisi birimin adından da anlaşılacağı gibi *strategos*tu. Nitekim, Hellenistik monarşilerin yönetim sisteminin temelinde askeri bir düzen olduğunu düşünüldüğünde yetkili kişilerin asker olması olağandır. Yani Hellenistik kralıkların idari yapılanması askeri yapı üzerine kurumsallaştırılmıştır. Mithradat Krallığı'nın yönetim yapısının Kappadokia örneğine dayanarak benzer bir yapıda olduğunu varsayabiliriz. Buna ilaveten, Mithradates VI'nın Bosporos'u hakimiyeti altına almasının ardından *territorium*unu kaleler ile donatıp, kırsal yerleşimleri kalelere ve dolayısıyla kalelere atadığı komutanlara vermesi, bu sistemin krallığın bir yönetim biçimi olarak benimseyip uyguladığının bir göstergesidir.

Kaleler tarihsel süreçte Mithradat Krallığı'nın askeri harekatlarında süphesiz ki görev almışlardır. Özellkle Mithradates VI döneminde Roma egemenliğine karşı verilen uzun soluklu mücadele sırasında Eupator'un izlediği askeri stratejinin bir parçasıdır. Yayılmacı politikasının gereği fethettiği bölgelerde ilk iş olarak kaleler inşa ettirmiştir. Ayrıca yine bu stratejisi kapsamında krallığı bünyesindeki kalelerden savaş öncesinde destekleri konusunda söz almıştır. Kaleler savaşlar sırasında beklenildiğinin aksine antik kaynaklarda çok da yer almaz, ancak Strabon, Appianus ve Memnon'dan elde edilen bir miktar bilgi kalelerin askeri olduğu kadar idari görevler üstlenmiş olduğunu, kale komutanlarının yönetsel erklere sahip olduğunu ortaya koyduğu gibi aynı zamanda kalelerin orduların toplanma merkezleri, cephanelik, hazine binası olarak rol aldıklarını anlamamıza yardımcı olur.

Krallığın güney tarafında bulunan kalelerin, Strabon'un ifade ettiği sınırlara tekabül etmesi, kalelerin sınır belirlemede kullanımı ilgili bir düşünce olup olmadığını akla getirmiştir. Antik dönem toplumları ve devletlerinde sınır kavramı nehir, dağ sıraları, tepe gibi fizyografik öğeler üzerinden tanımlanmaktaydı ve nitekim krallık sınırlarını Strabon dağ silsilesi ve bölge isimleri bazında ifade ederek bu tanıma uymaktadır. Sınır mevhumu, krallıklar/devletler için sahip oldukları toprakların ve kaynakların idaresi, kontrolü ve güçlerinin idame ettirilmesi için hayati öneme sahiptir. Aynı zamanda bu sınırlar içinde yaşayan topluluklar için bir aidiyet duygusunun oluşmasında rol oynar. Giddens geleneksel devletlerde yönetilen nüfusun çoğunluğunun kendilerini yönetenler hakkında pek az farkındalıkları olduğunu ileri sürer. Olağan olarak, yalnızca egemen sınıfa mensup olanların genel politik topluluğa bir aidiyet duyguları bulunmaktaydı. Bu yönden değerlendirilecek oldugunda Pontos coğrafyasında yaşayan köy topluluklarının *Pontoslu* olmasının ötesinde ait olduğu topluluğun üyeliği, aile ve akrabalık bağlarının getirdiği kimlik, yaşamlarında daha ön planda olmalıydı. Yönetici sınıf ile dağınık gruplar halinde yaşayan halk arasındaki kontak noktaları tapınaklar ve kalelerdi demek yanlıs olmayacaktır. Kraliyet ailesinden olan ve doğrudan onlar tarafından yönetici olarak atanan tapınak rahipleri ve kale komutanları yönetimle halk arasındaki her türlü ilişkileri düzenleyen birimler olmalıydı. Krallığın sınır noktalarında konumlanmış kaleler aynı zamanda bir sınır garnizonu görevi üstlenmiştir ve çevresindeki toplulukların içinde yaşadığı bölgenin kontrolünü sağlıyordu. Kamisa kalesi, çevresindeki Kamisene bölgesinde yaşayan toplulukların idaresini sağlıyordu. Bu bölgede yaşan topluluklar ise büyük ihtimalle kendilerini Kamiseneli olark nitelendiriyorlardı. Bu varsayıma en iyi destek Zeus Stratios kült alanının temenosunda bulunan yazıttır, tapınağa tapınımda bulunan topulukların isimlerini içerir. Pimolisa kalesinin etrafındaki Pimolisene'de yaşayan topluluklar bu isimle tapınağın temenosunda bir yazıt ile yerlerini almışlardır.

Kalelerin hemen hemen hepsinde bulunan ve hatta neredeyse tek anıtsal yapı olarak tanımlayabileceğimiz basamaklı tünel yapıları az da olsa bilim insanlarının ilgisine nail olmuştur. Orta Karadeniz Bölgesi özelinde G. de Jerphanion, kalelerin topografyadaki stratejik konumlarını göz önünde bulundurarak bu tünellerin kuşatma sırasında kaleyi boşaltmaya yarayan gizli bir geçit olduğu görüşünü ortaya atar, sonrasında bölgeyi ziyaret etmiş von der Osten ise tünellerin askerlerin güvenli bir şekilde su kaynağına ulaşmak amacıyla kalelerde bulunduğu ifade eder. Strabon bu fikri destekler nitelikteki açıklamalarında özellikle Amaseia'daki tünelden bahsederken *hydreia* tanımını kullanır ve bu tanım tünellerin su ilişkisini ortaya koyar. Bu tünellere epeyce kafa yormuş olan von Gall'ın detaylı çalışması her iki fikri de değerlendirir ve tünellerin suya ulaşmayı amaçladığını daha net bir biçimde vurgular. Nitekim haklıdır da. Amaseia kalesinin tünelinde 2010 yılında yapılan temizlik çalışmaları tünelin her ne kadar ırmağa ulaşmadığını ortaya koysa da tünelin bittiği noktada oldukça geniş bir rezervuarın var olduğunu ortaya koymuştur. Bölgedeki diğer bazı kalelerin tünelleri ise direk olarak kalenin kenarından akan nehre ulaştığı görülmektedir (Appendix 1). Tüneller, kayaya oyulmuş yapılar olmaları nedeniyle tarihlenmesi açısından sorunludur. Bu anlamda kalenin üzerinde bulunduğu kayalığın ev sahipliği yaptığı dönemsel açıdan karakteristik öğelere sahip bir diğer yapı olan kaya mezarlarının işçiliği bu anlamda karşılaştırma verisi sunar. Örneğin, Amaseia kalesindeki kral mezarlarının tonozlu üst yapısının kayaya oyulma tekniğindeki işçilik bu kalede bulunan tünelin tonozu ile aynıdır. Buradan yola çıkarak tünelin, mezarlar ile aynı dönemde (Hellenistik dönem) yapıldığını söylemek mümkün olabilmiştir.

Amaseia örneği haricinde tarihleme konusunda bu yapılara Anadolu ölçeğinde ışık tutacak pek de bilgi yok gibidir. Hatta bu yapıların çalışma alanı dışındaki başka coğrafyalarda ve farklı dönemlerde de görülmesi kafa karıştırıcı olarak bile algılanabilir. En erken örneğine Demir Çağı'nda Anadolu'nun doğusunda kaya sanatının ustası sayılan Urartular'da rastlanmaktadır. Urartu coğrafyasının aynı Mithradat Krallığı gibi yoğun bir şekilde kaleler ile kuşatıldığını söylemek mümkündür. Bu kalelerdeki kaya tünelleri stilistik açıdan Orta Karadeniz örnekleri ile benzerlik göstermese de kalede suya ulaşmak için yapılmış bir yapı olması itibariyle öncül sayılabilir. Dönemsel olarak Orta Karadeniz örneklerine en yakın örnek Ankara yakınlarındaki Karalar Galat yerleşiminden gelir.Kale tipi yerleşim modelini benimsemiş Galatlar için bu kaleler savunma mevhumuna ek olarak yöneticilerin ikamet ettikleri birimlerdi ve bu yönde bir yerleşim tipolojisini Anadolu'ya geldikten sonra bu topraklarından geleneğinden kendilerine adapte etmişlerdi. Anadolu coğrafyasından uzak bölgelerdeki örnekler tünellerin suya ulaşmak için yapılmış olduklarını desteklemektedir. Demir Çağı'nda İsrail'deki Gezer Kalesi'nin, kalenin surlarının dışına çıkmadan, yer altı su kaynağına ulaşan bir tünelin kalenin su ihtiyacını karşıladığını ortaya koyar. Atina Akropolis'inde Myken basamakları olarak bilinen kayaya oyulmuş tünel yine yeraltı su kaynağına ulaşmaktadır. Bir diğer örnek olan Korinth'te su kaynağına ulaşan birden çok tünel bulunmaktadır ve bunlar M.Ö. 5. yüzyıldan itibaren akarsulardan gelen suyun depolandığı rezervuarlar olarak kullanılmıştır. Mithradat Krallık coğrafyasında dağılım gösteren kalelerin su kaynakları yani nehir ve dereler ile olan ilişkisini ortaya koymak, tünnellerin su ihtiyacını karşılama işlevine ışık tutmuştur. Kalelerin akarsu ve yeraltı su kaynaklarına olan mesafeleri mekansal açıdan sorgulanmış ve her ikisi arasında yakın bir ilişki olduğu ortaya konmuştur. Kalelerin yer seçimi konusunda akarsuyun belirleyici rol üstlendiği anlaşılmaktadır.

Krallığın yerleşimlerine dair yapmış olduğum çalışmanın kaleler ile olan ilişkisinin ortaya konması aşamasında oluşan kurgunun temelini bölgede gerçekleştirilmiş olan arkeolojik yüzey araştırmalarından elde edilen veri oluşturmaktadır. Bu verinin elverdiği ölçüde kurgulanan ilişki gerçeğe yakınlık gösterir. Ancak yapılmış olan yüzey araştırmalarının azlığı, bu araştırmaların odak noktasında spesifik bir dönemin belirlenmek yada yüzey malzemesinin tanımlanmasında araştırma ekibi içinde Hellenistik dönem uzmanının bulunmaması gibi nedenlerden ötürü Hellenistik dönem yerleşimlerinin belirlenmesinde eksik kalınmıştır. Yapılmış olan tüm yüzey araştırması raporlarının taranmasının ardından bir araya getirilen Hellenistik dönem yerleşim verisi, eksik olmasına rağmen yine de öngörü sağlaması açısından önemlidir.

Yerleşimlerin yer seçimiyle ilgili olarak sağladığı sonuç Helenistik dönem politikaları ile doğru orantılıdır. Mithradat Krallık coğrafyasındaki kırsal topluluklar, kendilerinden önce iskan edilmiş yerleşim alanlarını yerleşmek için tercih etmişlerdir. Bu yerleşimler çoğunlukla tepe üstü ve yamaç tipi morfolojilerde ve su kaynaklarına yakın noktalarda konumlanmış olmalarından ötürü höyüklerde karşımıza çıkmaktadır. Hellenistik dönemde ilk defa kurulan yerleşimler ise güvenlik gerekçesiyle vadi yamaçlarını ve tepe üstlerine yerleşmişlerdir. Yukarıda dediğim gibi bu seçimdeki en ektin faktör dönemin siyasi ve askeri açıdan stabil olmaktan uzak durumu ve Krallığın 30 yıla yakın bir süredir Roma'ya karşı vermiş olduğu savaştır. Ancak şunu da söylemek gerekir ki o da yerleşimlerin konum olarak krallığın verimli ovalarına ev sahipliği yapan vadilerde ve ovalarda yer almasıdır. Bu yönüyle krallık ekonomisinin temelini oluşturan tarımsal faaliyetlerin baş aktörlerinin yerleşim dağılımına ışık tutulmuştur. Ancak kalelerin yerleşimlerle olan ilişkisine dair kesin bir sonuca ulaşmak, yüzey araştırmalarının yukarıda değinilen niteliğinden olayı mümkün olamamıştır. Yine de kalelerin konum olarak bulundukları vadilerle olan güçlü ilişkilerinden dolayı aynı zamanda yerleşimlerin de gözetilmesini sağladığını söylemek mümkündür. Antik kaynaklar ve bölge üzerine çalışan bilim insanlarının sağladıkları bilgiler doğrultusunda kale-yerleşim-vadi üçlüsünün ortaya koyduğu çıktı şu şekilde açıklanabilir; krallığın iç kesimlerini iskan eden kırsal topluluklar bereketi tarım arazilerinin işlenmesini sağlar, elde edilen ürünler kalelerin kontrol altında tuttuğu doğu-batı yönelimli vadiler boyunca kıyıya uzanan yollar aracılığıyla limanlara ulaşır ve buradan ihraç edilir, bu ürünler tapınak devletlerinin organize ettiği festivallerde pazar ekonomisi üzerinden hem krallığa hem de festivallere gelen komşu krallıkların ziyaretçilerine satılarak krallık ekonomisine yön vermekteydi. Krallığın ekonomik ve idari yapılanmasında tapınak devletlerinin önemi büyüktür. Sahip oldukları büyük miktarlardaki tarım arazileri ve ekonomiyi çekip çeviren iş gücü olarak değerlendirilebilecek tapınağa direk olarak bağlı köy toplulukları tarım ekonomisi için lokomotif görevi görmüştür. Yani dini işlevlerinin ötesinde tapınak devletleri ekonomik bir güç olarak algılanmaldır.

Tezin ana konusunu oluşturan kalelerin topografik konumlarının sağladığı bilgi, fonskiyonlarına dönük olarak önermelerde bulunulmasına olanak sağlamıştır. Mithradat Krallık Coğrafyasında dağılım gösteren onlarca kalenin, antik kaynaklardan bilinen krallık yönetim ve askeri politikaları için arz ettiği önem, topografik pozisyonlarından yola çıkarak ele alınmıştır. Kalelerin yer seçimleri ve çevresiyle olan karşılıklı ilişkileri, temelde fonskiyonlarına yönelik bir farklılaşma olabileceği fikrini akla getirmiştir. Benzer bir yaklaşım E. Kolb tarafından da geliştirilmiş ve kaleler topografik posizyonlarına göre manuel olarak yani herhangi bir analiz alt yapısı kullanılmaksızın, yüksek ölçekli coğrafi haritalar üzerinde noktalanarak fonskiyonlarına dönük olarak fikirler sunulmuştur. Kolb'un bu girişimi, benim çalışmamda daha da geliştirilmiştir. Bu bağlamda, kaleleri temel alan ilişkiler ağını efektif bir şekilde irdeleyebilmemizi sağlayan GIS, sağladığı analiz alt yapısı yardımıyla kaleleri farklı açılardan değerlendirmeye olanak sağlamıştır. Bu yönüyle bölgedeki kalelerin değerlendirilmesi bölge arkeolojisi için defa yapılmış ve yükseklik, bakı, eğim ve kaya tipi üzerinden yer seçimi, su kaynakları ile olan ilişkisi, tarımsal alanlara olan etkisi değerlendirilmiştir. Bu temel coğrafi konumlamaların ardından kalelerin çevresi ve birbirleri ile olan ilişkileri ortaya konmuştur. Bu ilişki daha çok görünürlük analizi üzerinden test edilmiş ve fonskiyon önermesine temel sağlamıştır. Bu yöndeki önerme doğrudan kalelerin görüş alanı ve bu görüş alanı içinde kalan potansiyel tarımsal alanların miktarı ile ilgilidir. Kalelerin konumsal durumları, tarımsal alanların görünürlüğü ile doğru orantılıdır ve dar geçitler içinde kalan bir kale ile vadi kenarına konumlanmış bir kalenin gördüğü potansiyel tarımsal alanının oranı aynı olmayacağından fonskiyonları da farklılaşmaktadır. Tarım alanlarının kontrolü kalelere savunma amaçlarının yanında yönetsel bir kimlik de kazandırmaktadır. Pimolisa, Gazioura Kamisa gibi antik kaynaklar tarafından yönetim merkezleri olarak ifade edilen kalelerin analizleri yönetsel fonksiyonlarını perçinlemektedir, ancak durum antik kaynaklar tarafından bahsedilen tüm kaleler için bu kadar net değildir. Krallığın merkezi Amaseia kaynaklarda yönetim merkezi olarak ifade edilmesine rağmen analizler savunma amaçlı bir kale olduğunu önermektedir. Kaleler genel itibariyle dar geçitlerin kenarlarına, geniş vadilerin etrafına konumlanmıştır. Geniş vadilerle ilişkisi olan kaleler, bu vadilerin ev sahipliği yaptığı bereketli ovalar olan Phanaroia, Khiliokomon, Dazimonitis'in neredeyse tamamını kontrol altında tutmaktadır. Krallık ekonomisinin dayanağı olan tarım gelirlerinin bu ovalardan elde edilen ürünler üzerinden elde edilmesi, bu alanları gözeten kalelere yönetim statüsü kazandımaktaydı.

Kalelerin birbirleriyle olan ilişkilerine dair en önemli nokta iletişimin olup olmadığıdır. Gerçekleştirilmiş olan görünürlük analizini modifiye ederek kalelerin birbirlerine sinyal gönderme suretiyle iletişim içinde olma ihtimalleri değerlendirilimiştir. Bunun temelinde Appianus'un 3. Mithradat Savaşları sırasında Roma ordusunun gelişinin Boğazkesen'den Kabeira kalesine sinyal yoluyla bildirimi vardır. Buradan hareketle bu iki kale arasında yapılan analiz olumlu sonuç vermemesine rağmen, özellikle Skylax vadisi boyunca dağılım gösteren kalelerin hemen hepsinin, Yukarı Kızılırmak Vadisi kalelerin bir kısmının bu yolla iletişim kurabileceği anlaşılmıştır. Yine aynı şekilde Dazimonitis ovasının güney ve güney batı girişlerindeki kalelerin görsel etkileşimi haberleşmelerini sağlamış olmalıydı. Tarım alanlarının ve köy topluluklarının korunmasında kaleler arası iletişim faktörü söz konusu alanların korunmasında önemli olmalıydı. Bu noktada kalelerin dağılım gösterdiği krallık coğrafyasınnı genelinde bir savunma sistemi oluşturmuş olmalarını söylemek belki de biraz iddialı olacaktır. Ancak en azından ovaların ve bu ovalardaki köy toplulukların korunmasını odağına almış savunma sistemleri olduğunu söylemek mümkün gibi görünmektedir. Nitekim olası kale konumları hesaba katıldığında bölgesel bir savunmanın olma ihtimali var gibi görünmektedir. Bu konu, Pontos'da çalışmaların çoğalması ile netlik kazanacaktır.

Hellenistik Dönemin yol ağı hakkında bilgi sahibi değiliz. Ancak genel kanı Roma yol ağının kendisinin öncesi olan Hellenistik dönemin alt yapısını kullanmış olduğu yöndedir. Genel itibariyle topografi ile uyumlu hatlar çizen yollar aynı zamanda kalelerin hakim olduğu vadi geçişlerini kullanmıştır. Kalelerarası etkileşime yani askerin izleyebileceği yollara ışık tutmak amacıyla farazi ulaşım-haberleşme rotaları analizler yardımıyla önerilmiştir. Orduların savaşlar sırasında ikmal için yada toplanma alanı olarak kullandığı kalelere ulaşmak için seçmiş olabileceği güzergahlar bu analizler vasıtasıyla ön görülüp tarihsel veri ile bir arada değerlendirilmiştir. Buna göre, elde edilen sonuçlar özelikle Arhoy-Gazioura arası ve Amaseia üzerinden Paphlagonia'ya olan yürüyüş sırasında kullanılmış olabilecek rotalar olası gibi görünmektedir. Elde edilen bir çok rotanın Roma dönemi yol ağı ile örtüşmesi Hellenistik Dönemde de bu hatların var olduğunu rahatlıkla söylememize imkan sağlar.

Bu tez çalışması, arkasında üzerine kafa yorulması gereken bazı noktalar bırakmıştır. Bölgede henüz arkeolojik olarak tespit edilmemiş ancak olasılıkla bir kaleye ev sahipliği yapan lokasyonların tespitine dönük olarak ‘öngörü modellesi=predictive modeling’ yardımıyla keşfedilmesini sağlamak bunların başında gelir. Bu çalışma kalelerin belirli parametrelere sahip olduğunu ortaya koymuştur (su kaynağın yakınlık, kayalık üzerinde konumlanma, belirli eğim değerine sahip olma, ova veya dar vadi kenarlarında yer alma gibi). Bu parametrelerin yardımıyla bölgedeki diğer kalelern tespiti yapılabilir ve böylece eğer varsa bölgese bazda bir savunma sisteminin varlığı kanıtlanabilir. Kullanılan yol verisinin iyileştirilmesine dönük olarak yapılacak olan çalışmalar, kaleler ile ulaşım ağları hakkındaki bilgilerin iyileşmesini sağlayacaktır. Erciyas’tan devraldığım, krallık coğrafyasının yerleşim dağılımına yönelik olarak yaptığım çalışma, bu çalışma sonrasında yapılacak olan arkeolojik çalışmalara bağlı olarak güncellenip, kale ve yerleşim ilişkisinin kesin bir şekilde ortaya konmasını sağlayacak ve ayrıca yerleşim düzenine ışık tutacaktır.

APPENDIX 7

CURRICULUM VITAE

Emine Sökmen
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Personal details

Date & Place of birth: Istanbul/Turkey, 12th June 1979
Nationality: Turkish

Academic background

Sept. 2009/2016 PhD. degree in Settlement Archaeology Program at METU, Ankara. Thesis Title: Surveying Pontic Landscape Through Fortresses of Mithradatids
Sept.2002/2005- MSc degree in Settlement Archaeology Program at METU, Ankara, Thesis Title: Temple States of Pontus: Comana Pontica and Zela.
1996/2000- BS degree in Ancient History Department, Ankara University, Turkey, with a thesis on Research on reused architectural remains of Alexandreia Troas through Ottoman Archives.

Research interests

Black Sea Archaeology, Mithradatic Kingdom, Defense Systems, GIS Applications to Archaeology, Landscape Archaeology, Settlement Patterns.

Awards

April 2010-October 2012 **TÜBİTAK Fellowship** project assistant under Komana Archaeological Research Project.
January 2008-June 2008 **Socrates exchange** grant to attend one semester at University College London, UK.

Work experience

- December 2012-Now: Hitit University, Department of Archaeology Research Asisstant.
- April 2010-October 2012: working as project assistant in Komana Archaeological Research Project.
- April-August 2005: working as project staff in BIAA for rearranging of research laboratory (bone and plant reference collections) and preparing database for related materials.

- June-July 2004: working as staff for stock checking at British Institute of Archaeology at Ankara
- September-November 2003: working as project staff for editing a PhD Thesis' reference part for publishing.
- October 2003-April 2004: working as project staff under BABSI to prepare a web-based bibliography about Black Sea littoral. This database include all articles from the annual Araştırma Sonuçları Toplantısı, Kazı Sonuçları Toplantısı and Arkeometri Sonuçları Toplantısı held by Turkish Ministry of Culture and Tourism.

Archaeological fieldwork experience:

- 2016: Sinop Archaeological Research Project, Team member. Director: Owen P. Doonan (California State University/Northridge).
- 2009- 2014: Komana Archaeological Research Project, Field director. Director: D. Burcu Erciyas (Middle East Technical University).
- 2004-2008: Survey Project at Comana Pontica (Tokat/Turkey), Team Member. Director: D. Burcu Erciyas (Middle East Technical University).
- 2002-2006: Excavation at the Classical site of Burgaz/Datça (Muğla/Turkey), Team Member. Director: N. Tuna (Middle East Technical University).
- 2003: Excavation at the Bronze Age site Ikiztepe, as team member of archaeobotanical studies. Director: Önder Bilgi (Istanbul University).
- 2000 Excavation at Alexandreia Troas, researcher. Director: Elmar Schwertheim (Münster University)

Publications

Sökmen E. (2013),"Two Defence Units in Pontic Kingdom: Çördük and Geyras Stongholds-Preliminary Results" Exploring the Hospitable Sea: British Archaeological Reports (BAR),Proceedings of the International Workshop on the Black Sea in Antiquity held in Thessaloniki, 21-23 September 2012, edited by M. Manoledakis, s.167-176. ISBN 9781407311142.

Erciyas B., Sökmen E. (2010), "An Overview of Byzantine Period Settlements around Comana Pontica in north-central Turkey." Byzantine and Modern Greek Studies Vol. 34 No.2 pp.119-141.

Sökmen, E. (2009), "Characteristics of the Temple States of Pontos" BSS 9 (Black Sea Studies) pp. 273-283. Aarhus University Press.

Sökmen, E. (2006), "Pontos Bölgesindeki Tapınak Devletleri: Komana Pontika and Zela" Black Sea Studies Symposium Proceedings YAS 1 (Settlement Archaeology Series 1), pp. 119-138. Ege Yayınları İstanbul

Symposium organizer-Editor

Middle East Technical University at Ankara, 12-13th May 2011: Regional Studies in Archaeology: providing a discussion ground for young scholars who carry out archaeological studies at regional scale and share various perpectives and results yielded by regional studies in Anatolia.

Arkeoloji'de Bölgesel Çalışmalar Sempozyum Bildirileri / Regional Studies in Archaeology Symposium Proceedings, Erciyas, Burcu - Emine Sökmen (eds.) Ege Yayınları, İstanbul. 2014. ISBN No: 9786054701339.

International Conferences

Fourth International Congress on Black Sea Antiquities at Istanbul University/Turkey, 2009: Preliminary Study on interpretation of the fortresses in Tokat Province.

Mithridates VI and the Pontic Kingdom at University of Aarhus/Denmark, 2007: Characteristics of the Temple States of Pontos.

Black Sea Past, Present and Future at Istanbul Technical University/Turkey, 2004: Comana Pontica as Trade Center (Poster presentation).

Black Sea Researches Symposium at Middle East Technical University/Turkey, 2004: Temple States of Pontos: Comana Pontica and Zela.

BABSI- British Academy of Black Sea Initiative, University of Manchester/UK, 2003: Presented a database including the names and keywords of archaeological symposium articles published by Turkish Ministry of Culture and Tourism, General Directorate for Cultural Assest and Museums.

APPENDIX 8

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü x

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : SÖKMEN
Adı : EMİNE
Bölümü : YERLEŞİM ARKEOLOJİSİ

TEZİN ADI (İngilizce) : Surveying the Pontic Landscape Through the Fortresses of the Mithradatids

TEZİN TÜRÜ : Yüksek Lisans ☐ Doktora x

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. x

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: