
Map representation of Archaeological sites in Turkey According to Chronology Using GIS

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Abstract:

The aim of this research is to highlight the relationship between archeology and GIS For the possibility of GIS to interpret, analyze and visualize past lifestyles and patterns of geographical distribution. This is supported by GIS programs through their diverse spatial analytical capabilities Allowing the archeologist to ask and answer questions about the old way of life, its geographical distribution, and its spatial relations. The research followed the regional approach and Chronology approach of the historical sequence to reveal the spatial relations of ancient civilizations. The research found that the Anatolian region was not free of civilization on Her land, from the Stone Age to the end of the Ottoman Empire. And that some of the current Turkish provinces lived on its territory most of the civilizations and this is due to the perfect geographical location and cultural heritage of the region. Through the potential of GIS programs, a spatial and Metadata database of successive civilizations have been built on the current state of Turkey. Emphasis was also placed on the characteristics of each and the extent of their spatial spread. This was represented by 22 maps in this research.

Introduction:

The Map is a universal language that highlights facts and reveals spatial relationships. Distribution maps to any phenomenon allow the specialist to analyze and interpret the phenomenon in quantity and quality. There is a clear integration between cartography and archeology. This integration has deepened and improved after the advent of modern mapping technology, represented by GIS programs Which opened prospects for new discoveries and facts. The Anatolia (Asian part of Turkey) is the cradle of civilizations since the fourteenth century BC to the end of the Ottoman Empire. The mapping of these times according to the chronology of their appearance allows the specialist to view them from different angles and discover some important spatial relations. There can be no more important topic in historical studies than chronology, for it is chronology which gives meaning to history by placing individuals, events and material remains within their true sequence. If this sequence does not match historical actuality, then, the historical narrative drawn from the available evidence may appear confused, incomplete or even contradictory (Furlong, 2007). Archaeology has

important relationships with many sciences in which it tries to interpret, analyze, and visualize the lifestyles of past civilizations, cartography, GIS, and remote sensing. This is one of the most important of these sciences. The effectiveness of GIS maps enhanced by their ability to create new data through their various spatial analysis tools, the effectiveness of GIS maps enhanced by their ability to create new data through their various spatial analytical tools, this allows the archaeologist to ask new questions and answer old questions. Archaeology stands alone among the sciences in its attempt to enlighten us about the entire chronological record of humankind, and to expand that to the study humans within and the evolution of world ecosystems. Because of this unique interest in the total human past, archaeologists must insure that their findings integrated into broader spheres of scientific knowledge (Eerkens, 2016). In the context of highlighting the importance of geographic information systems in archeology, we can quote the text that says: The early pioneers of archaeological Geographic Information Systems (GIS) advocated for a future where this technology was more than a data-management tool. To this end, they emphasized harnessing the analytic power of GIS to advance innovative understandings of past social landscapes (Meghan C.L. Howey, 2017). Through this research, we can further expand spatial analysis, explore spatial relationships, understand the past and build models. GIS seems tailor-made for archaeology because the discipline is inherently spatial; and in fact, archaeologists were some of the earliest adopters of the technology (Richards-Rissetto, 2017). **Key word: Anatolia, Spatial analysis, GIS, Cartography, Archaeology, spatial relationships, Chronology**

1- Data used: In this research, based on the table published on the official website of the Turkish Cultural Foundation entitled Timeline of Anatolia, (TCF, 2017)

2-Study area: The study area represented, In the modern state of Turkey, which consists of 81 provinces.

3-Methodology: In this research has been to follow the historical method to display the archaeological sites according to the chronological order from oldest to newest and as shown in the below:

3-1/ ≈400,000-14,000 BC THE PALEOLITHIC AGE (Old Stone Age)

Hunter-gatherers used tools. They sheltered in caves and in other rock formations as 'extended-family groups'. Fire was used to manipulate raw foods in cooking and heating, and served as protection from predatory wildlife (TCF, 2017).Paleolithic Period, also spelled Paleolithic Period, also called Old Stone Age, ancient cultural stage, or level, of human development, characterized using rudimentary chipped stone tools. The onset of the Paleolithic Period has

traditionally coincided with the first evidence of tool construction and use by Homo some 2.5 million years ago, near the beginning of the Pleistocene Epoch (about 2.6 million to 11,700 years ago). In 2015, however, researchers excavating a dry riverbed near Kenya's Lake Turkana discovered primitive stone tools embedded in rocks dating to 3.3 million years ago—the middle of the Pliocene Epoch (some 5.3 million to about 2.6 million years ago). Those tools predate the oldest confirmed specimens of Homo by 1 million years, which raises the possibility that toolmaking originated with Australopithecus or its contemporaries and that the timing of the onset of this cultural stage should be reevaluated. (Melchert, 2018). Among the most important archaeological areas in Turkey within this THE PALEOLITHIC AGE (Old Stone Age) are: Yarimbuzurg Cave (near Istanbul), Karain Cave (Antalya-Mediterranean region), Beldibi, Belbasi, Okuzini, Kumbucagi and Kadiini Caves (TCF, 2017). As shown on the map (1). They are located in the provinces (Istanbul, Antalya).

Map 1: THE PALEOLITHIC AGE (Old Stone Age) in turkey,



Source: From the work of the researcher based on (TCF, 2017).

3-2/ ≈14,000-10,000 BC THE MESOLITHIC AGE (Middle Stone Age)

Mesolithic Period, also called Middle Stone Age, ancient cultural stage that existed between the Paleolithic Period (Old Stone Age), with its chipped stone tools, and the Neolithic Period (New Stone Age), with its polished stone tools. Most often used to describe archaeological assemblages from the Eastern Hemisphere, the Mesolithic Period is broadly analogous to the Archaic culture of the

Western Hemisphere. Mesolithic material culture characterized by greater innovation and diversity than found in the Paleolithic. Among the new forms of chipped stone tools were microliths, very small stone tools intended for mounting together on a shaft to produce a serrated edge. Polished stone was another innovation that occurred in some Mesolithic assemblages. Although culturally and technologically continuous with Paleolithic peoples, Mesolithic cultures developed diverse local adaptations to special environments. The Mesolithic hunter achieved a greater efficiency than did the Paleolithic and was able to exploit a wider range of animal and vegetable food sources. Immigrant Neolithic farmers absorbed many indigenous Mesolithic hunters and fishers, and some Neolithic communities seem to have been composed entirely of Mesolithic peoples who adopted Neolithic equipment. (Melchert, 2018). Among the most important archaeological areas in Turkey within this THE MESOLITHIC AGE (Middle Stone Age) are: Mediterranean coast of Anatolia, Thrace, and western Black Sea region. Sarklimagara cave (Gaziantep), Baradiz cave (Burdur) and cemeteries of Sogut Tariasi, Biris near Bozova, Urfa, Catal Huyuk, Tekeköy, Belbası, Beldi (TCF, 2017) As shown on the map (2). They are located in the provinces (Gaziantep, Burdur, Şanlıurfa).

Map 2: THE MESOLITHIC AGE (Middle Stone Age) in turkey,

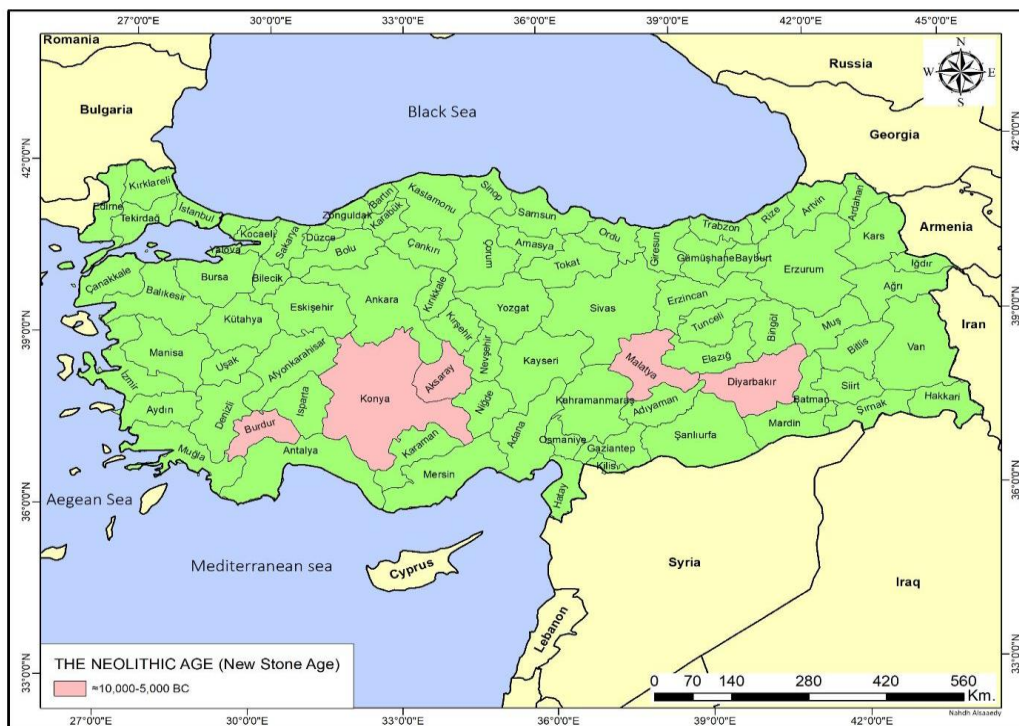


Source: From the work of the researcher based on (TCF, 2017)

3-3/ ≈10,000-5,000 BC THE NEOLITHIC AGE (New Stone Age)

Neolithic Period, also called New Stone Age, final stage of cultural evolution or technological development among prehistoric humans. It was characterized by stone tools shaped by polishing or grinding, dependence on domesticated plants or animals, settlement in permanent villages, and the appearance of such crafts as pottery and weaving. The Neolithic followed the Paleolithic Period, or age of chipped-stone tools, and preceded the Bronze Age, or early period of metal tools. (Melchert, 2018). Among the most important archaeological areas in Turkey within this THE NEOLITHIC AGE (New Stone Age) are: Cayönü (Diyabakir), Cafer Höyük (Malatya), Asikli Höyük (Aksaray), Kurucay (Burdur), Catalhöyük (Konya) and Hacilar (Burdur) (TCF, 2017) As shown on the map (3). They are located in the provinces (Burdur, Diyarbakır, Malatya, Aksaray, Konya).

Map 3: THE NEOLITHIC AGE (New Stone Age) in turkey,



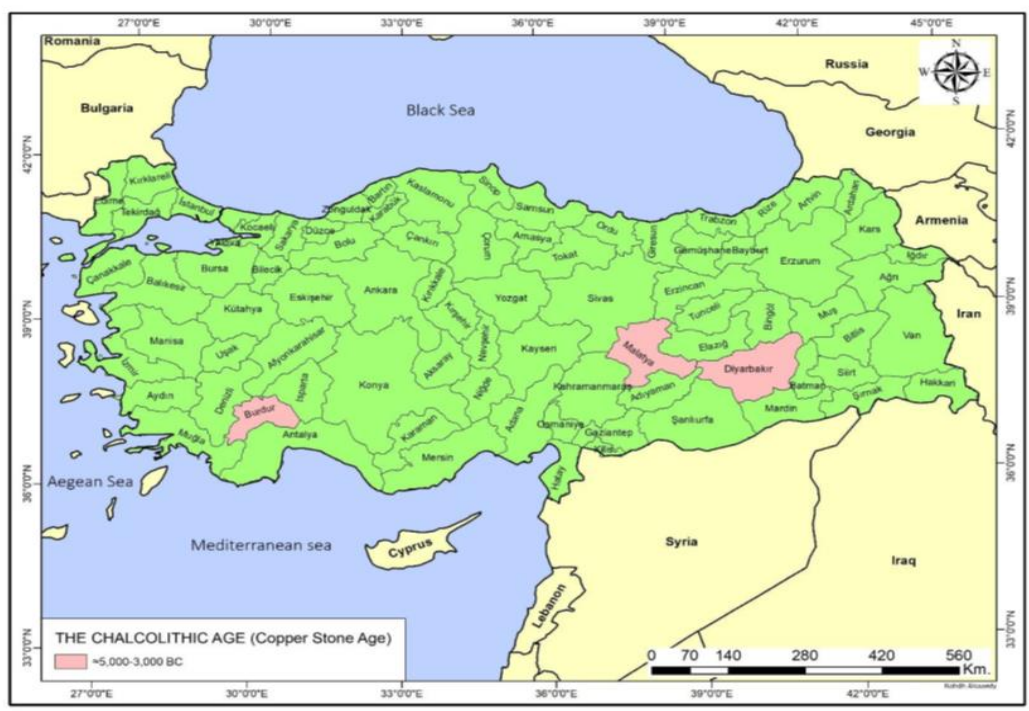
Source: From the work of the researcher based on (TCF, 2017)

3-4/ ≈5,000-3,000 BC THE CHALCOLITHIC AGE (Copper Stone Age)

The 1,000-year-long Copper Age is also known as the Chalcolithic Period. It lasted from about 4500 B.C. to 3500 B.C., overlapping with the early Bronze Age. Some cultures and individuals used Copper Age technology after the Copper Age was over. Copper was being fashioned into implements and gold was being fashioned into ornaments about 6,000 years ago, 3,000 years before the Greeks and Roman empires. Copper was the first metal to be worked by man on a large scale in part because it is found in "large pure ingots in a natural

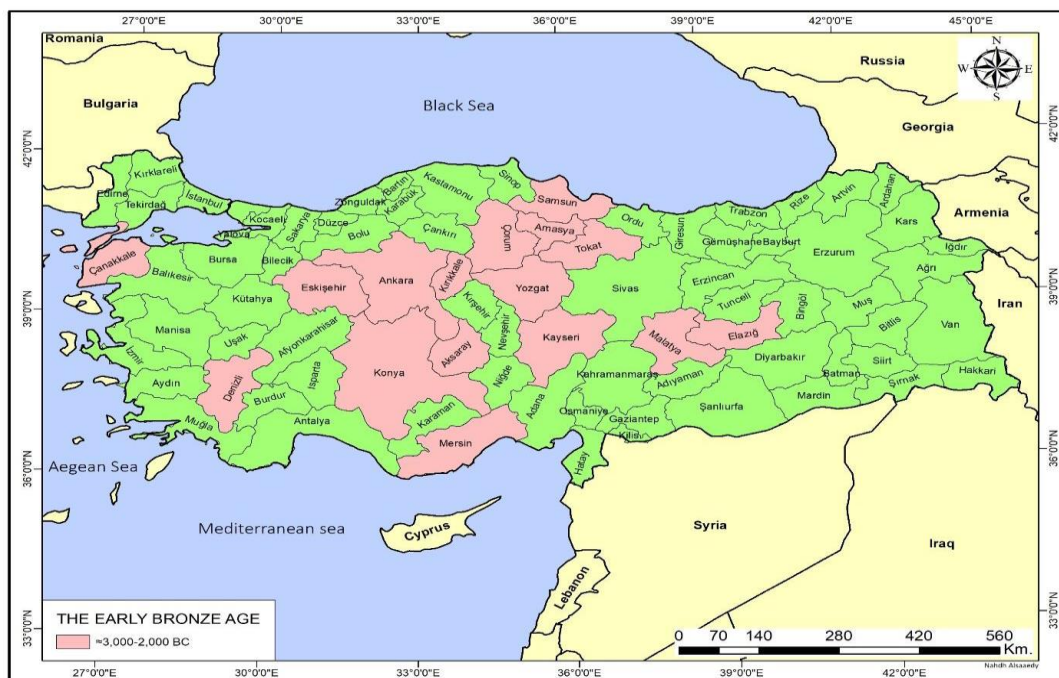
state" in many various locations around the world. Axes, points, and armor could be fashioned by simply hammering the metal; melting it was not necessary. Andrew Curry wrote in *Archaeology* magazine, "Once largely ignored by the scholarly community, the Copper Age has become a hot topic. "Far from being a historical footnote, Copper Age Europe was a technological and social proving ground. Archaeologists have found the earliest evidence of distinctions between rich and poor, rulers and the ruled. There is no evidence of social hierarchy prior to this period, in the Neolithic, or Stone Age. Until recently, scholars assumed the Copper Age was no more advanced. "Copper Age and Neolithic societies are always described as egalitarian, or as less complex," says German Archaeological Institute researcher Svend Hansen. The latest discoveries, however, suggest that humanity's first hesitant steps out of the Neolithic were probably taken because of the development of metalworking and the changes in society that came along with this technological breakthrough." (Hays, 2018) Among the most important archaeological areas in Turkey within this THE CHALCOLITHIC AGE (Copper Stone Age) are: Bakla Tepe (Izmir), Liman Tepe (Izmir), Hacilar (Burdur), Beycesultan (Denizli), Kurucay (Burdur), Ikiztepe (Samsun), Alisar (Yozgat), Domuztepe (Adana), Yumuktepe (Icel), Arslantepe (Malatya), Degirmentepe (Malatya), Tilkitepe (Van) and Girikihaciyan (Diyarbakir) (TCF, 2017) As shown on the map (4). They are located in the provinces (Burdur, Diyarbakir, Malatya).

Map 4: ~5,000-3,000 BC THE CHALCOLITHIC AGE (Copper Stone Age) in turkey,



Source: From the work of the researcher based on (TCF, 2017)

The discovery of people's mines and the use of them has been a breakthrough in the development of civilization. In Anatolia, which has rich ore deposits, it is seen that people recognized the mines from the Neolithic Age. When the Early Bronze Age came, mining activities became very widespread. In western Anatolia, centers such as Troia, Limantepe and Beycesultan have become masters of metal production. Anatolia has rich gold, silver, copper, lead, zinc and iron mines. These mines are concentrated in the south of the Black Sea, in the Taurus Mountains and in the Troas Region in Western Anatolia. The Taurus Mountains are especially important for mining activities in Early Bronze Age II and III. Strabo from the Antiquity writers; Hermos and the Pactolos River through Sardis and Astyra in Troas speak of the wealth of gold. These rich mineral deposits in Western Anatolia have always attracted people's attention (ARCHAEOLOGY, 2018) Among the most important archaeological areas in Turkey within this THE EARLY BRONZE AGE are: Arslantepe (Malatya), Alacahöyük (Corum), Acemhöyük (Aksaray), Troy (Canakkale), Karaoglan (Ankara), Alisar (Yozgat), Karahöyük (Konya), Kultepe (Kayseri), Demircihöyük (Eskisehir), Mahmatlar (Amasya), Horoztepe (Tokat), İkiztepe (Samsun), Gözlükule (Tarsus), Beycesultan (Denizli), Semsiyetepe (Elazığ) and Kulluoba (Eskisehir) (TCF, 2017) As shown on the map (5). They are located in the provinces (Denizli, Yozgat, Malatya, Samsun, Aksaray, Konya, Mersin, Ankara, Çanakkale, Elazığ, Kayseri, Eskişehir, Çorum, Tokat, Kırıkkale, Amasya).



Map 5: $\approx 3,000$ -2,000 BC THE EARLY BRONZE AGE in turkey,

Source: From the work of the researcher based on (TCF, 2017)

Map 3-6/ $\approx 2,000$ -1,900 BC HATTIAN PEOPLE

Around 1900 BCE: The first appearance of the Hittites in history. They invaded the region which came to be known as Hatti (Yavuz, 2018). High level of metal crafting, no writing, their culture is partially known from succeeding periods, Assyrian Trading Colonies, and the Hittites. Burial customs detected in Alaca (TCF, 2017). Among the most important archaeological areas in Turkey within this HATTIAN PEOPLE are: Mahmatlar, Horoztepe, Alacahoyuk and Hattusas. (TCF, 2017) As shown on the map (6). They are located in the provinces (Çorum, Tokat, Amasya).

6: $\approx 2,000$ -1,900 BC HATTIAN PEOPLE in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

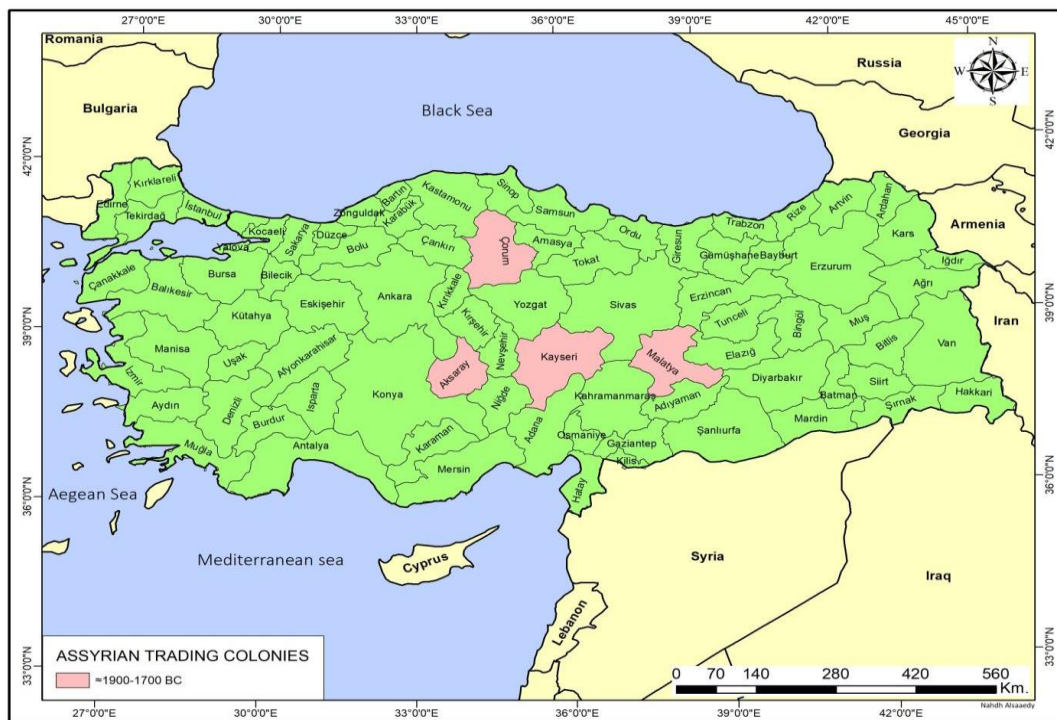


3-7/ ≈ 1900 -1700 BC ASSYRIAN TRADING COLONIES

We know from the Assyrian tablets that there were twenty-one karu, i.e., market places in Asia Minor. However, only three of them were discovered so far. The most important karum in Asia Minor, was in the city of Kanesh/Nesa, in Kültepe, near Kayseri. The others were Hattus (Kattus) and Alişar in Halys' basin. Other than karu, small exchange places, called wabaratum (singular wabartum) were formed, which were actually functioning mostly no more than observation posts for the caravans' safety (smie.co, 2018). Established a very sophisticated trading system with Anatolia. Traded tin, perfumes, ornaments and clothes in exchange for goods made of silver and gold.

Writing and written history began in Anatolia with the introduction of cuneiform writing. Use of Assyrian cuneiform writing and Mesopotamian cylinder seals. First use of envelopes made of clay in the world (TCF, 2017) Among the most important archaeological areas in Turkey within this ASSYRIAN TRADING COLONIES are: Kanesh Kharum (near Kultepe in Kayseri) and Kharum Hattush (Bogazköy) in Corum, Acemhoyuk (Aksaray), Aslantepe, Elazig, Malatya (TCF, 2017) As shown on the map (7). They are located in the provinces (Çorum, Aksaray, Malatya, Kayseri).

Map 7: ≈1900-1700 BC ASSYRIAN TRADING COLONIES in turkey, **Source:** From the work of the researcher based on (TCF, 2017)



3-8/ 1600-700 BC HITITE PERIOD

Hittites (the first Indo-European culture in history) won the struggle to establish a great kingdom in central Anatolia, making Hattusas their capital. Hittites' first use of iron for weapons, iron production under kingdom monopoly. Built the three-man chariot. Became the main power in the Middle East. Concentration on wars simultaneous with very high level of culture. Assyrian cuneiform tablets in Hitite archives. Establishment of small kingdoms which were the inheritors of the Hittite Empire. Dilution of clear Hittite characteristics. Luwians dominant group in the Late Hittite culture. In the 1200s, Sea Peoples attacked Anatolia, destroyed Troy and moved south. The Hittite Empire broke into small city-states in southeastern Anatolia and north Syria. High-level relief art having Hittite, Luwian, Phoenician and Aramian influences done on orthostats in buildings (TCF, 2017). The

Hittite kingdom was centred on the lands surrounding Hattusa and Neša, known as "the land Hatti" (URUHa-at-ti). After Hattusa was made capital, the area encompassed by the bend of the Halys River (Hittite Marassantiya, Turkish: Kızılırmak) was considered the core of the Empire, and some Hittite laws make a distinction between "this side of the river" and "that side of the river" (portal, 2018) Among the most important archaeological areas in Turkey within this HITITE PERIOD are: Alisar, Hattusas (Bogazköy), Corum, Aslantepe, Malatya, Buyukkale, Yazilikaya, Meliddu and Kummuhi near Malatya, Gurgum (Maras), Kargamis (Gaziantep), Samal/Zincirli (Gaziantep), Sakcagozu, Karatepe (TCF, 2017). As shown on the map (8). They are located in the provinces (Çorum, Samsun, Gaziantep).

Map 8: 1600-700 BC HITITE PERIOD in turkey, **Source:** From the



work of the researcher based on (TCF, 2017)

3-9/ 860-580 BC URARTIAN KINGDOM

The capital of the Urartian kingdom, Tushpa², was located on the eastern shores of Lake Van. The first prominent king of the Urartians was Sarduri. However, the kingdom reached to its peak power during the reign of the kings Menua and Argisti. The Urartians together with the Late Hittites were controlling most of the important cities around the eastern Mediterranean region, preventing the Assyrians reaching to the sea, and dominating the sea trade with the Hellene merchants. The Assyrians on the other hand were controlling the highly prized trade routes between Anatolia and northern Syria. The hostility based on the economic and territorial interests between the Urartians and Assyrians led to the military conflicts. In these conflicts the Urartians

seemed to be mostly the victims, whereas the Assyrians were the aggressors. The Assyrian king Tiglath-Pileser III drew the Urartians from northern Syria in 743 BC and another Assyrian king, Sargon II took the territories around the Lake Urmia in 713 BC. These attacks by the Assyrians left the Urartians very weakened and reduced in size but they survived. However, the fatal attacks came not from the south though it came from the north, from other peoples, namely the Medes and Scythians. The Urartian kingdom disappeared circa 585 BC when the Medes created a strong kingdom in the same region. Some other texts suggest that the Urartian kingdom disappeared circa 612 B.C after the Scythian attack (smie.co, 2018) The people of Urartian Kingdom spoke a language that unlike Indo-European Hittite language which was common in previous period in Anatolia. Urartian were not known to be very skillful at iron and bronze workmanship (TCF, 2017) Among the most important archaeological areas in Turkey within this URARTIAN KINGDOM are: Eastern Anatolia, Van Basin, Gokcegol, Cildir Lake, Toprakkale, Cavustepe, Ayanis, Malatya, Altintepe, Erzincan (TCF, 2017) As shown on the map (9). They are located in the provinces (Kayseri, Aksaray, Ankara, Van, Osmaniye).



Map 9: 860-580 BC URARTIAN KINGDOM in turkey, Source: From the work of the researcher based on (TCF, 2017)

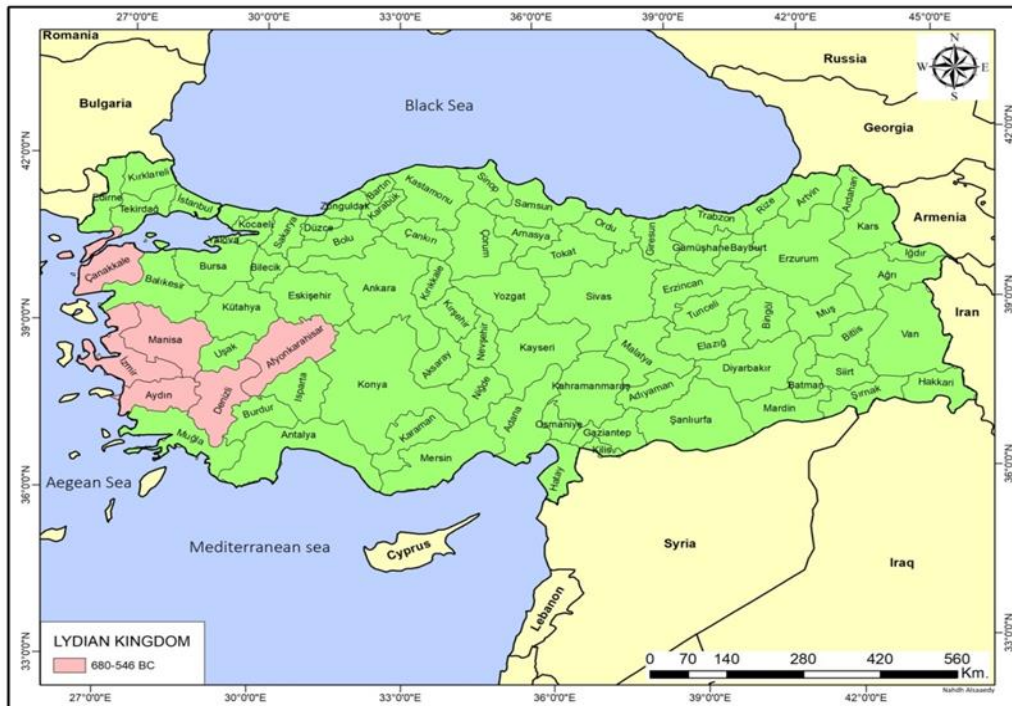
3-10/ 750-600 BC PHRYGIAN KINGDOM

Phrygian language, ancient Indo-European language of west-central Anatolia. Textual evidence for Phrygian falls into two distinct groups.

Old Phrygian texts date from the 8th to 3rd centuries BCE and are written in an alphabet related to but different from that of Greek. The



majority of those that can be understood are cultic in nature. Most were found at established Phrygian sites such as Gordion and Midas City, but a few are from more peripheral areas, as far east as the Hittite capital city, Hattusa (near the modern town of Boğazkale, formerly Boğazköy, Tur.), and as far south as the borders of Lycia. The extant texts of the second group date from the 1st and 2nd centuries CE. These Neo-Phrygian texts are virtually all curse formulas that were written in the Greek alphabet and appended to tomb inscriptions. (Melchert, 2018) Phrygians migrated from the Balkans in 1200 BC, but established their first political entity as a kingdom in 750 BC. They were incorporated into local cultures and became Anatolian according to their origin. They were influenced by the Late Hittite City-states and Hellenic groups. (TCF, 2017) Among the most important archaeological areas in Turkey within this PHRYGIAN KINGDOM are: Midas, Ayazini, Aslantas, Yazılıkaya, Gordion, Pazarlı, Alisar, Alacahöyük, Cappadocia, Eskişehir, Afyör, Yassihöyük (Gordion), Ballihisar (Pessinus), Ankara, Sinop, Pazarlı, Hattusas, Malatya, Manisa, the northern Kizilirmak and Sakarya rivers (Sangarius River), Aslankaya (TCF, 2017) As shown on the map (10). They are located in the provinces (Çorum, Ankara, Gaziantep, Osmaniye, Çanakkale, İstanbul, Eskişehir).

Map 10: 750-600 BC PHRYGIAN KINGDOM in turkey,

Source: From the work of the researcher based on (TCF, 2017)

3-11/680-546 BC LYDIAN KINGDOM

The Lydians' ancestors were contemporaries to the Hittites with sometimes friendly and sometimes hostile relationship. The Lydians continued to thrive in the central west Asia Minor during the Iron Age after the demise of the Hittites. When the Urartian kingdom was destroyed the Lydians extended their borders in the east to the Halys River¹. They reached their highest point in prosperity and became the major power in Asia Minor during the Mermnadae dynasty after the Phrygian kingdom was destroyed by the Cimmerians. With the fall of the Phrygian kingdom the Cimmerians turned their attention to the Lydians in 660 BC. (smie.co, 2018) The Lydians are said to have been the first people to coin money. Sardis, the capital of Lydia. (TCF, 2017) Among the most important archaeological areas in Turkey within this BC LYDIAN KINGDOM are: Izmir (Smyrna), Miletus, Aydin, Manisa (Magnesia ad Sipylum), Usak, Afyon, Denizli, Gygaean Lake, Bintepe, Isparta, Sardis, Assos, Caria, Halicarnassus, Aphrodisias (TCF, 2017) As shown on the map (11). They are located in the provinces (Çanakkale, Denizli, İzmir, Afyonkarahisar, Manisa, Aydın).

Map 11: 680-546 BC LYDIAN KINGDOM in turkey, Source: From the work of the researcher based on (TCF, 2017)



3-12/ 546-334 BC PERSIAN PERIOD

Persian Empire, also known as the Achaemenid Empire, was one of the most important civilizations of the history who ruled between 6th and 4th centuries BC. It was the successor state of the Median Empire and founded by Cyrus the Great around 550 BC. The official language of the empire was Aramaic, and their capital cities were Persepolis, Susa, Pasargadae, and Ecbatana. The empire was divided into several satrapies, forming a successful model for centralized administration who worked to the profit of all its people (Sansal, 2018). Conquest of the whole area of present-day Turkey by the Persians. Continuous wars with the Greeks hampered the welfare of Persians. Defeated at the Battle of Gaugamela. (TCF, 2017) Among the most important archaeological areas in Turkey within this PERSIAN PERIOD are: Ephesus, Milet, Trabzon (Trebizond), Adiyaman (Mt Nemrud), River (Granicus), Caria, Halicarnassus (TCF, 2017) As shown on the map (12). They are located in the provinces (Çanakkale, İzmir, Aydın, Muğla, Adiyaman).

Map 12: 546-334 BC PERSIAN PERIOD in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

3-13/ 395 BCE-1176 AD LYCIAN PERIOD

The Lycians had a fierce desire for freedom and independence and this found its expression in their sense of unity and federation. The institutions of the democratic Lycian Federation (the first democratic union known) were studied and envied by most classical writers. The writers of the constitution of the United States studied the Lycian federal system of government with proportional representation as a possible model for their own government. The Lycians spoke a

language of their own, with its own unique alphabet, an Indo-European language closely related to Luwian and Hittite (TCF, 2017) Among the most important archaeological areas in Turkey within this LYCIAN PERIOD are: Antalya, Demre, Phaselis, Fethiye (TCF, 2017) As shown on the map (13). They are located in the provinces (Muğla, Antalya).

Map 13: 395 BCE-1176 AD LYCIAN PERIOD in turkey, **Source:**



From the work of the researcher based on (TCF, 2017)

3-14/ 334-133 BC HELLENISTIC PERIOD

Macedonian king Alexander the Great conquered Greece, the crossed into Asia at Gallipoli to take the whole of Persia. Ruled regions from western Greece to the border of present-day Pakistan. Strong town development. Towns have own laws, autonomy, defense and live on agriculture. Some city-state (TCF, 2017) among the most important archaeological areas in Turkey within this HELLENISTIC PERIOD are: Mediterranean Alexandria, Antioch, Pergamum, Ephesus, Priene, Miletus, Teos, Magnesia, Bithynia, Cappadocia, Pontus (TCF, 2017) As shown on the map (14). They are located in the provinces (Çanakkale, İzmir, Aydın, Niğde).

Map 14: 334-133 BC HELLENISTIC PERIOD in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

3-15/133 BC-395 AD ROMAN PERIOD

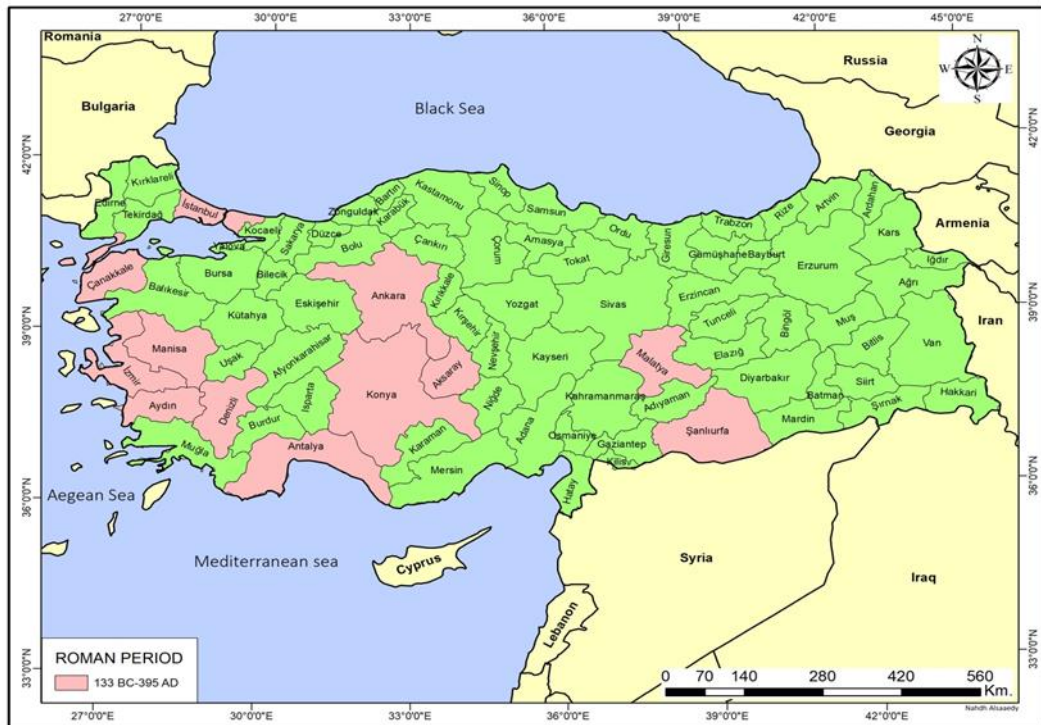


The Kingdoms of Pergamum and Bithynia were bequeathed to Rome, and Pontus and Cappadocia were conquered. Cilicia also fell under Roman domination. A Roman administrative reorganization took place in Anatolia which brought the Roman culture to Anatolia. At this point according to Naim Turfan Anatolia “hellenized” Rome while Rome colonized her, for she possessed a creative and well-developed culture, the roots of which stretched back thousands of years. (turkish odyssey, 2018) Out of Pergamum, the Romans formed the province of Asia. Roman Empire absorbed Anatolia. Brought Pax Romana, the period of peace. Spread of Christianity in the region by Jesus' apostle Paul. Constantinopolis, the new capital of the Roman Empire in 330 AD. Christianity, the official religion. The Council of Nicaea (İzmit), which established a key doctrine, took place in 325 AD. (TCF, 2017) Among the most important archaeological areas in Turkey within this ROMAN PERIOD are: Cities including Ephesus, Magnesia, Assos, Bergama, Tralleis, Miletos and Didyma dominated the region. Thrace, Istanbul, Ankara, Antalya, Afrodisias, Efes, Bergama, İzmir, Manisa Side, Denizli-Pamukkale (Hierapolis), Konya-Beysehir, Aksaray (Garsaura), Viransehir (Nora), Malatya (TCF, 2017) As shown on the map (15). They are located in the provinces (Çanakkale, Malatya, İzmir, Aksaray, Aydın, Ankara, Denizli, İstanbul, Manisa, Antalya, Konya, Şanlıurfa).

Map 15: 133 BC-395 AD ROMAN PERIOD in turkey,

Source: From the work of the researcher based on (TCF, 2017)

3-16/ 395-1453 AD BYZANTINE PERIOD



Byzantine Empire, the eastern half of the Roman Empire, which survived for a thousand years after the western half had crumbled into various feudal kingdoms and which finally fell to Ottoman Turkish onslaughts in 1453 (Teall, 2017). Byzantium, built by Emperor Constantine, became a major arts and cultural center. Under Justinian, innovative architecture was used to build largest cathedral in the world, Hagia Sophia, 532-7. Inspires Christian and Muslim architects for centuries. In 1071, Turkish Seljuks conquered Byzantium. Constantinople occupied during the Crusades. Byzantium collapsed totally when Ottoman Fatih Sultan Mehmet (Mehmet the Conqueror) conquered Constantinople in 1453 (TCF, 2017) Among the most important archaeological areas in Turkey within this BYZANTINE PERIOD are: Istanbul, Cappadocia, Bolu, Izmit (Nicomedia), Trabzon (Trebizond), Iznik (Nicaea), Ephesus, Demre, Kilikya, Mardin, Nusaybin, Alexandria Troas, Guzelyurt, Akhirsar, Tire (Thyrra), Malatya (TCF, 2017) As shown on the map (16). They are located in the provinces (Çanakkale, Malatya, İzmir, Aksaray, Kayseri, İstanbul, Manisa, Antalya, Kocaeli, Adana, Trabzon).

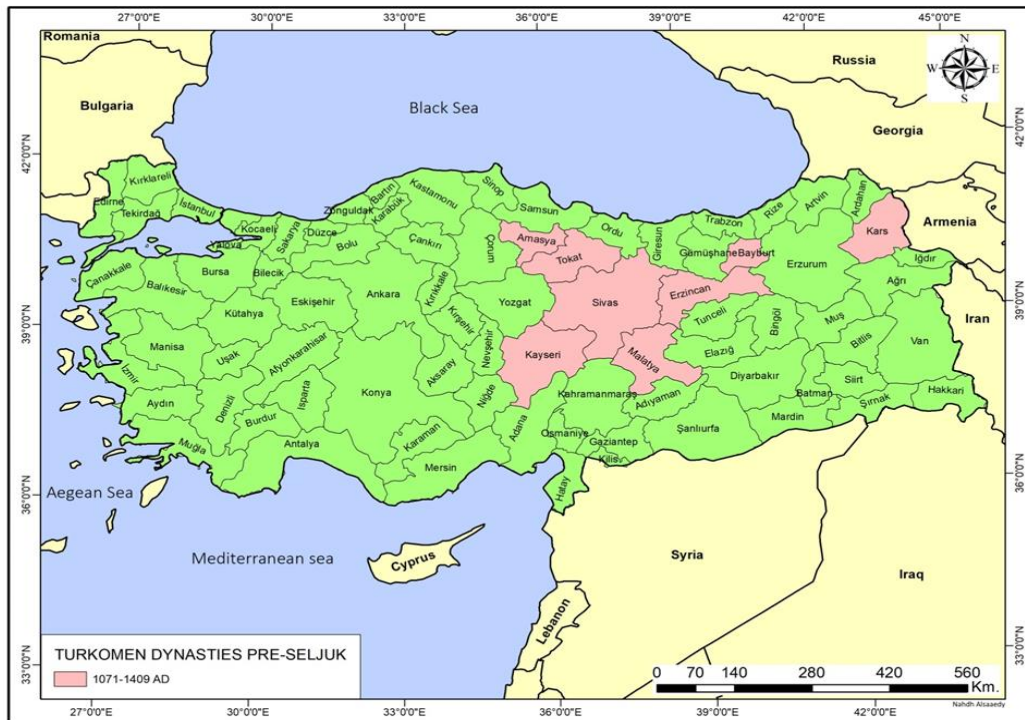
Map 16: 395-1453 AD BYZANTINE PERIOD in turkey, **Source:** From the work of the researcher based on (TCF, 2017)



3-17/ 1071-1409 AD TURKOMEN DYNASTIES PRE-SELJUK

At the same time that the Great Seljuks (Iran, Iraq, Syria) were gaining power, other tribes of Turkomen tribes of the Danishmendids (1071-1178) in central and northeastern Anatolia (Tokat, Amasya, Kastamonu, Sivas, Kayseri and Malatya), the Saltuqids (1071-1202) in Erzurum, Kars, Bayburt, the Mengujukids (1071-1228) on the Upper Euphrates (Erzincan and Divriği), were carving out small principalities. Of all the dynasties founded by the members of the Seljuk tribes, the one that had the greatest success and the longest reign, and which managed to constitute a solid and organized state, was the Anatolian Seljuks of Asia Minor, otherwise known as the Seljuks of Rum (of the "Roman" empire, the country of "Rum", as the West was called by the eastern Iranian Turks). (TCF, 2017) Among the most important archaeological areas in Turkey within this TURKOMEN DYNASTIES PRE-SELJUK are: Tokat, Amasya, Kastamonu, Sivas, Kayseri, Malatya, Erzurum, Kars, Bayburt, Erzincan and Divriği (TCF, 2017) As shown on the map (17). They are located in the provinces (Kayseri, Tokat, Malatya, Amasya, Kars, Bayburt, Sivas, Erzincan).

Map 17: 1071-1409 AD TURKOMEN DYNASTIES PRE-SELJUK in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

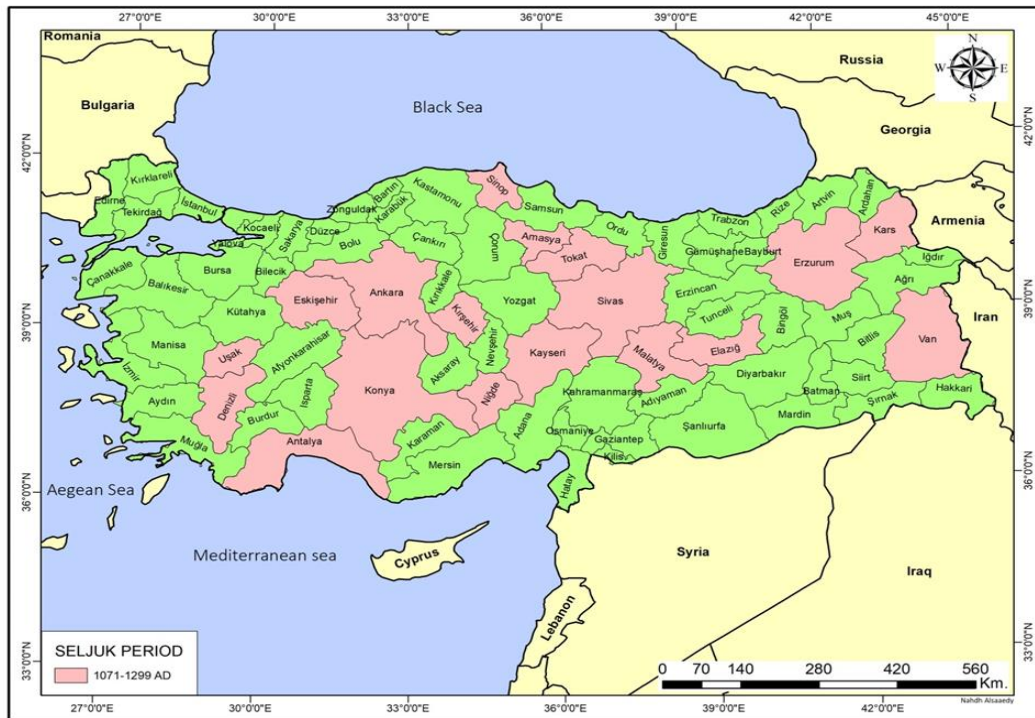


3-18/1071-1299 AD SELJUK PERIOD

Seljuk Turks entered Anatolia and established a state in 1358. They enlightened Anatolia via their tolerant government. Governed a population that was mostly Greek-speaking Anatolian Christian, with a significant Jewish minority. Konya (Iconium) was the capital. Turkish language and Islamic religion. The Crusades, Latin armies entered Anatolia for the first time. Sophisticated architecture. The Gothic style brick buildings that we see in some European cities today were influenced by Seljuks. Muslim mystic, theologian and poet Jelaledin Rumi (1207-1273) is the sultanate's most famous and enduring figure. Mongolian invasion (1243-1308) (TCF, 2017) among the most important archaeological areas in Turkey within this AD SELJUK PERIOD are: Konya, Eskisehir, Nigde-Ulukisla, Kırşehir, Tokat, Ankara, Elazığ, Van, Erzurum, Erzincan, Malatya, Mus, Bitlis, Kars, Ankara, Usak, Denizli, Antalya-Alanya, Sinop, Amasya, Sivas, Kayseri. (TCF, 2017) As shown on the map (18). They are located in the provinces (Kayseri, Ankara, Malatya, Denizli, Antalya, Tokat, Amasya, Konya, Niğde, Kars, Eskişehir, Sivas, Van, Elazığ, Erzurum, Kırşehir, Uşak, Sinop).

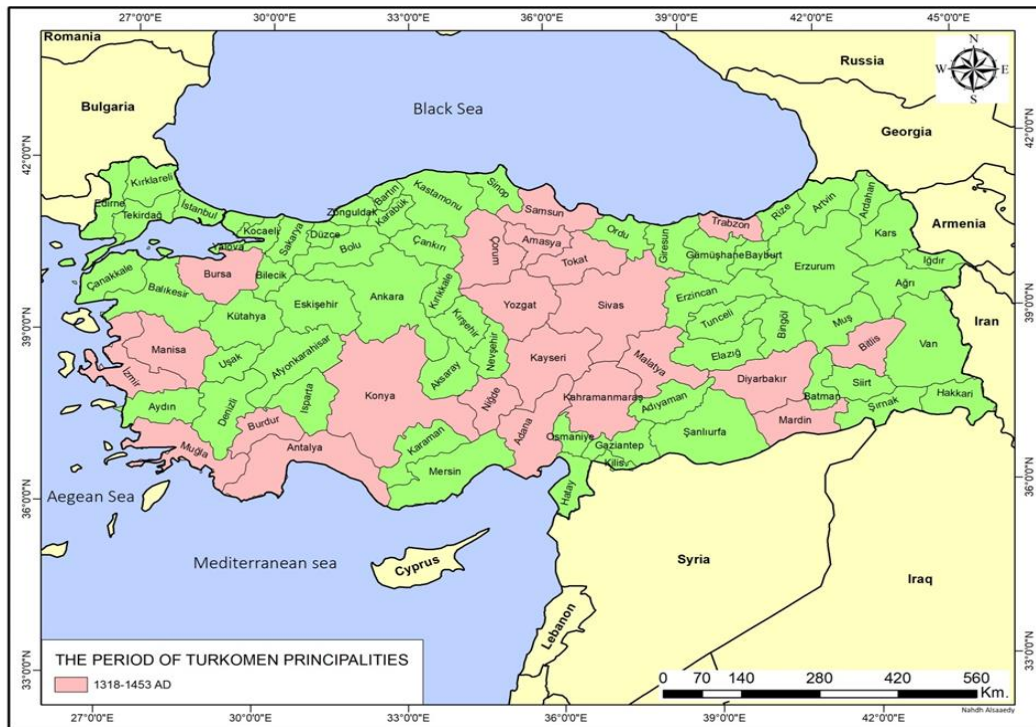
Map 18: 1071-1299 AD SELJUK PERIOD in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

3-19/ 1318-1453 AD THE PERIOD OF TURKOMEN PRINCIPALITIES



Ahlatshahs (Ahlat) and Artuquids (Eastern Anatolia, Diyarbakir, Harput, Hasankeyf, Mardin and Silvan) reigned in Anatolia in the same period as the Anatolian Seljuks. Along with the weakening of Mongolian rule, the Turkomen groups founded many beylics (principalities) of varying sizes in Anatolia. The Karaman, Germiyan, Esref, Hamid, Mentese, Candar, Pervane, Sahib Ata, Karesi, Saruhan, Aydin, Inanc, Alaiye, Dulkadir, Eretna, Kadıburhanettin, Ramazan, Tacettin and Osmanogullari were among the Turkoman beylics. All of Anatolia came under Turkish rule. The Ottoman state was founded. Among these principalities, the Ottoman Principality restored the political unity in Anatolia. Osman I declares independence of the principality in 1299 (TCF, 2017) among the most important archaeological areas in Turkey within this THE PERIOD OF TURKOMEN PRINCIPALITIES are: Antalya-Burdur, Konya, Kayseri-Bünyan, Sivas, Karaman, Milas, Bilecik, Malatya, İzmir-Urla, Manisa, Bursa, Niğde-Bor, Trabzon, Ordu, Samsun, Giresun, Adana, Tokat, Amasya, Çorum, Yozgat, Gümüşhane, Bitlis, Mardin, Diyarbakir (TCF, 2017) As shown on the map (19). They are located in the provinces (Kayseri, İzmir, Malatya, Çorum, Antalya, Manisa, Tokat, Amasya, Konya, Samsun, Burdur, Niğde, Muğla, Sivas, Yozgat, Diyarbakir, Adana, Trabzon, Bursa, Kahramanmaraş, Mardin, Bitlis).

Map 19: 1318-1453 AD THE PERIOD OF TURKOMEN PRINCIPALITIES in turkey, **Source:** From the work of the researcher based on (TCF, 2017)



3-20/ 1365-1469 AD 1350-1502 AD THE KARAKOYUNLU AND AKKOYUNLU STATES

The Karakoyunlu State, established in Mosul, between Irbil and Nakhchivan, in the environs of Van Lake and Erzurum. It was defeated by Akkoyunlu Uzan Hasan and the country came under the hegemony of the Akkoyunlu State (1351-1469). The Akkoyunlu State was founded in the environs of Diyarbakir, Malatya. Defeated by Sultan Mehmet the Conqueror at the Battle of Otlukbeli in 1473 (1340-1514). In 1473, with the defeat of the Akkoyunlu state, eastern Anatolia was incorporated into the Ottoman Empire (TCF, 2017) among the most important archaeological areas in Turkey within this THE KARAKOYUNLU AND AKKOYUNLU STATES are: Van, Erzurum, Diyarbakir, Ahlat, Malatya, Bayburt, Tercan, Harput, Erzincan, Urfa (TCF, 2017) As shown on the map (20). They are located in the provinces (Van, Diyarbakir, Malatya, Elazığ, Erzurum, Şanlıurfa, Bayburt, Bitlis).

Map 20: 1365-1469 AD 1350-1502 AD THE KARAKOYUNLU AND AKKOYUNLU STATES in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

3-21/ 1299-1923 AD OTTOMAN PERIOD

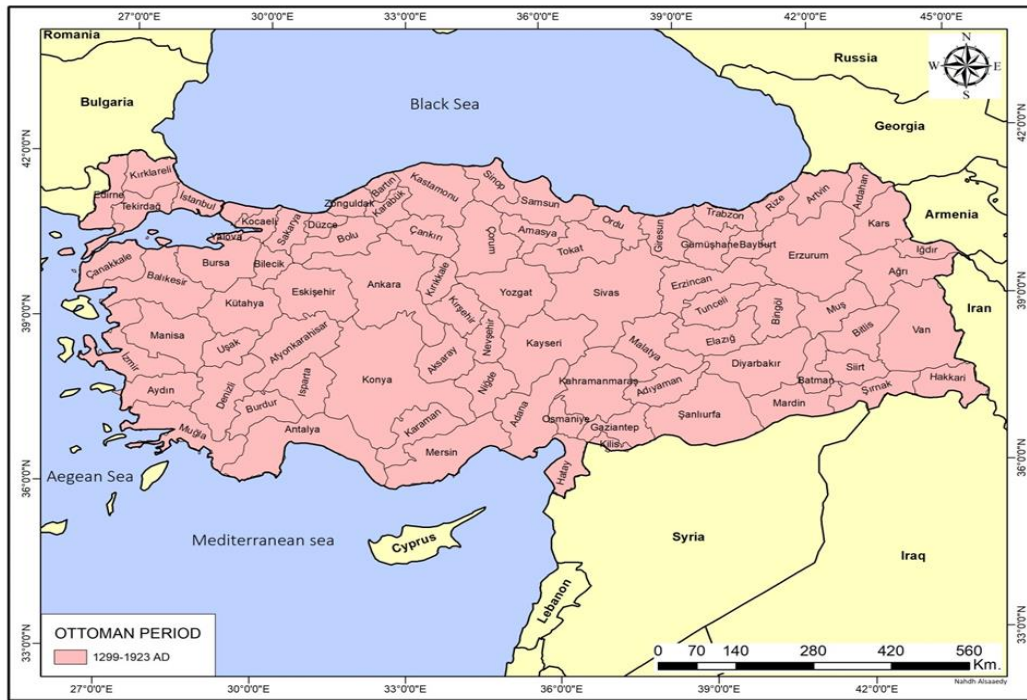


Bursa, Edirne and Istanbul, capitals. At its widest, Ottoman Empire covered a vast area from the Caspian Sea and Iran in the east, to Vienna in the west and from Russian steppes in the north, to Arabian Peninsula, Egypt, Sudan and Algeria in the south. Golden Age under Suleyman the Magnificent in 16th century: control over the Mediterranean and the Red Sea, innovative architect Mimar Sinan (Selimiye Mosque, Edirne; Suleymaniye Mosque, Istanbul). Multi-ethnic in nature, religious and ethnic communities enjoy tolerance and some independence from central power. Rise of nationalism in the 19th century contributes to territorial losses and internal conflict. Internal administrative reforms (TCF, 2017) among the most important archaeological areas in Turkey within this OTTOMAN PERIOD are: All over Anatolia, Turkey, Thrace (TCF, 2017) As shown on the map (21). They are located in the provinces (All over Turkey).

Map 21: 1299-1923 AD OTTOMAN PERIOD in turkey, **Source:** From the work of the researcher based on (TCF, 2017)

3-22/ Geographical distribution of all archeological sites according to periods

By observing the map (22) we notice that there is a difference in the geographical distribution of the archaeological sites at the level of the provinces there are provinces included the land of most civilizations, and there are other provinces have been devoid of any civilization on their land, this opens the door for discussion about the natural and human causes that explain this case.



Conclusion:

The civilizations have been on the land of Anatolia for thousands of years. They have not abandoned this land since the Stone Age to the end of the Ottoman Empire from a civilization that has its own characteristics. It was found when the archaeological sites discovered on the current administrative border of the State of Turkey, that some of the provinces characterized by the repetition of most civilizations on its territory and this is due mainly to the geographical location and the cultural heritage and cultural heritage. GIS programs have enabled the mapping of successive times on the region and the construction of a spatial database that allows the researcher the possibility of spatial analysis, which leads to the detection of relations between man and land and between civilization and other. Geographic information systems (GIS) programs also allow overlay analysis to be carried out using a variety of layers such as terrain, gradient, water resources, climate elements, roads and other layers with former civilizations.

References

- ARCHAEOLOGY, J. O. (2018, Jan 4). <http://www.jaha.org.ro/index.php/JAHA>. Retrieved from JOURNAL OF ANCIENT HISTORY AND ARCHAEOLOGY: <http://www.jaha.org.ro/index.php/JAHA>
- Eerkens, J. (2016). *Interdisciplinary Contributions to Archaeology*. Cham (ZG) Switzerland: Springer.
- Furlong, P. J. (2007). *Aspects of Ancient Near Eastern Chronology*. Melbourne : © Pierce J Furlong, 2007.
- Hays, J. (2018, Jan 4). <http://factsanddetails.com>. Retrieved from <http://factsanddetails.com/world/cat56/sub362/item1495.html#>: <http://factsanddetails.com>
- <https://www.britannica.com/editor/The-Editors-of-Encyclopdia-Britannica/4419>. (2017, Oct 20). Early Stone Age, Old Stone Age, Palaeolithic Period. Retrieved from www.britannica.com: <https://www.britannica.com/event/Paleolithic-Period>
- Meghan C.L. Howey, M. B. (2017). Assessing the state of archaeological GIS research: Unbinding analyses. *Journal of Archaeological Science*, 1-9.

- Melchert, T. P. (2018, Jan 5). britannica.com. Retrieved from Phrygian language: <https://www.britannica.com/topic/Phrygian-language>
- portal, T. (2018, Jan 5). Geography of the Hittite Empire. Retrieved from History of Turkey: https://ipfs.io/ipfs/QmXoyvizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Geography_of_the_Hittite_Empire.html
- Richards-Rissetto, H. (2017). What can GIS þ 3D mean for landscape archaeology? *Journal of Archaeological Science*, 1-12.
- Sansal, B. (2018, jan 5). www.allaboutturkey.com. Retrieved from all about turkey: <http://www.allaboutturkey.com/about.htm>
- smie.co. (2018, jan 4). <http://www.smie.co>. Retrieved from The Assyrian Colonies: http://www.smie.co/html/cultural_history/assyrian_colonies/assyrian_colonies.shtml
- TCF. (2017, December 31). TCF. Retrieved from TCF.TURKISH CULTURAL FOUNDATION: <http://www.turkishculture.org/>
- Teall, D. M. (2017, Dec 21). www.britannica.com. Retrieved from Byzantine Empire: <https://www.britannica.com/place/Byzantine-Empire>
- turkish odyssey. (2018, Jan 5). <http://www.turkishodyssey.com>. Retrieved from turkish odyssey: <http://www.turkishodyssey.com/turkey/history/anotolia-until-the-turks>
- Yavuz, E. (2018, Jan 4). ANATOLIAN CIVILIZATIONS. Retrieved from <http://www.transanatolie.com>: <http://www.transanatolie.com/english/turkey/Turkey%20PDF/Anatolian%20Civilizations.pdf>

المستخلص:

هدف هذا البحث هو تسليط الضوء على العلاقة بين علم الآثار ونظم المعلومات الجغرافية وذلك لإمكانية قيام نظم المعلومات الجغرافية بتفسير وتحليل وتصور أنماط الحياة السابقة وأنماط التوزيع الجغرافي ، يتم دعم هذا بواسطة برامج نظم المعلومات الجغرافية من خلال قدراتها التحليلية المكانية المتنوعة ، والإجابة على أسئلة حول نمط الحياة القديم ، وتوزيعه الجغرافي ، وعلاقاته المكانية. اتبع البحث المنهج الإقليمي ومنهج التسلسل التاريخي للكشف عن العلاقات المكانية للحضارات القديمة ، ووجد البحث أن منطقة الأناضول لم تكن خالية من الحضارة على أرضها ، من العصر الحجري إلى نهاية الإمبراطورية العثمانية ، وأن بعض المحافظات التركية الحالية تعيش على أراضيها معظم الحضارات وهذا يرجع إلى الموقع الجغرافي المثالي والتراث الثقافي للمنطقة ، ومن خلال إمكانات برامج نظم المعلومات الجغرافية تم بناء قاعدة بيانات مكانية وقاعدة بيانات وصفية للحضارات المتتالية على دولة تركيا الحالية، وتم التركيز أيضًا على خصائص كل منها ومدى انتشارها المكاني وتمثل ذلك برسم ٢٢ خريطة في هذا البحث.