# TYPES OF CULTURAL PALIMPSEST LANDSCAPES IN THE MEDITERRANEAN BASIN: DELIMITATION AND MAPPING

## Oxana A. Klimanova

Lomonosov Moscow State University, Department of Geography, Moscow, Russia <a href="http://www.geogr.msu.ru/">http://www.geogr.msu.ru/</a>
<a href="mailto:oxkl@yandex.ru">oxkl@yandex.ru</a>

## Eugeny Yu. Kolbowsky

Lomonosov Moscow State University, Department of Geography, Moscow, Russia <a href="http://www.geogr.msu.ru/kolbowsky@mail.ru">http://www.geogr.msu.ru/kolbowsky@mail.ru</a>

## **Abstract**

Cultural heritage sites in the Mediterranean basin reflect long—term cultural and land-use changes associated with different regional civilizations. We integrated data on historical heritage sites and civilization areas using GIS-mapping and modeling. Analysis of the World Heritage Database allows classifying 190 sites into eight cultural landscape categories — rock paintings, remnants of ancient settlements, architecture monuments, monasteries/castles, temples/necropolis, historical city centers, nature management systems, cultural landscapes, and defining eight civilization époques — prehistorical, ancient, antique, early medieval, late medieval, modern age, and recent. Each type of civilization change corresponds to a territory where cultural landscapes of various eras are superimposed to form a landscape palimpsest, including two- and three-layer systems formed under the impact of two or three civilizations. The resulting map and data are useful for comparative studies focusing on the relationship between the length of historical records and the "civilization" time-scale in which past cultural landscapes existed.

**Keywords:** Landscape palimpsest, civilization, world heritage, mapping.

### 1. INTRODUCTION

The European Landscape Convention defines "landscape" as a "synthesis of objectively existing reality and a way of its perception, experience and judgment" (The European Landscape Convention, 2002). This is an example of the productive legal definition of such a multidisciplinary concept as landscape and, at the same time, it fosters discussion on how the typology and mapping of landscapes that combine natural and cultural properties can be carried out on such a basis. This is rather urgent for Russia's geographical science because the "cultural landscape" concept has undergone an essential transformation over the past two decades (Kulturny landshaft..., 2004).

In Anglo-Saxon geographical tradition, the landscape as a phenomenon of culture has been actively studied since the beginning of the XX century (Sauer, 1925). The idea of landscape as a "text" with its own "dictionary," "grammar," and "syntax" was suggested by an English historical geographer W.G. Hoskins (1970) whose well-known work "The Making of the

English Landscape" laid the foundation for a series of landscape studies in Britain resulting in the national program of landscape inventory ("Historic Landscape Characterization") (Fairclough, 1999; Planning..., 1994). This aspect was developed in-depth by D. E. Cosgrove perceiving a landscape as a kind of document imprinting mute social realities of a historical era with the sign system (iconics) and symbolics [Cosgrove, 1984, p. 269].

The studies conducted in the following years in different countries of Europe proved that if a landscape is a "text," this text has been erased and rewritten many times. Thus the "palimpsest" concept used by D. Crawford (1953), the author of "field archeology," is quite applicable to it. By the "interpretation of landscape" (in the words of M. Aston) the British geographers managed to reconstruct the history of cultural space as a space inhabited by the nation in of different chronotopes (Appleton, 1975; Aston, 2002; Rippon, 2008). Such reconstruction allowed linking the material elements preserved within the landscape, which represent the nature of the anthropogenic impact, with the corresponding "cultural layer," and revealing the combinations characteristic of different historical epochs.

The mapping of cultural landscape palimpsests is closely related to the notions of the "cultural heritage object" and "civilization." Cultural heritage is a group of resources inherited from the past, which people identify, independently of ownership, as a reflection and expression of their continuously evolving values, beliefs, knowledge, and transitions. Information about the status and global value of cultural objects was taken from the UNESCO Natural and Cultural Heritage List. Since 1992 the areas formed as a result of significant interactions between people and the natural environment have been recognized as cultural landscapes, which have the status of mixed properties. Such objects account for only 5% of the total; however, the majority of the objects categorized as cultural heritage could also tell a lot about the human-nature interactions.

Objects of cultural heritage are the traces of various civilizations preserved within a landscape which, among other things, reflects the nature of their interactions with the environment. After civilization transition, the elements of material heritage of other cultures could appear within the object and either replace entirely the elements of the previous historical stage or coexist in parallel with them. In any case, the cultural landscape of a heritage object becomes multi-layered, which is important for further typology and classification. Thus, this paper treats "cultural landscape" as a purposefully formed natural and cultural territorial complex that has structural, morphological, and functional integrity and develops under particular physiographic, cultural, and historical conditions. Its components form certain characteristic combinations and are, in a certain way, interrelated and mutually conditioned (Kulturny landshaft ..., 2004, page 13).

Another important concept used for analysis of cultural landscape palimpsests is civilization. According to F. Braudel, civilizations are "the realities of long, inexhaustible duration endlessly adapting to their destiny" (1949). He understood civilization as a space, a niche, and a cultural and geographical zone possessing a unique originality and interacting with other zones (civilizations). It is particularly true for the regions with a long history of civilization development, including, undoubtedly, the Mediterranean. From the point of view of mapping, the areas of civilizations reflect the spatial distribution of the system of values characteristic of various historical eras and, therefore, the cultural landscapes characteristic of a certain historical era.

This paper discusses the identification of cultural and landscape palimpsests based on analysis of civilization distribution areas and objects of cultural heritage of the recognized world importance. If civilizations had a long history and developed unidirectionally, their areas are imposed over each other and form zones of palimpsests of traditional cultural landscapes of different historical eras.

### 2. CONCEPTUAL FRAMEWORK

The idea of landscape as an object created almost exclusively by physiographic (natural) processes was predominant in the Soviet geography (Kolbowsky, 2013). This approach had the advantage of considering landscapes as natural resources within the Soviet (and then – Post-Soviet) nature management paradigms. The concept of "cultural landscape" partly corresponded to the syntagm "anthropogenic landscape" in the national scientific and geographical terminology, and it was also, in many respects, synonymous to the concept of "historical landscape" (Kulturny landshaft..., 2004). The modern Russian geography is increasingly tending towards the equal importance of both natural elements and the elements of material and spiritual culture comprising a cultural landscape (Kalutskov, 2008; Kulturny landshaft..., 2004 не нашла в ссылках Cultural Landscape 2004).

The mapping of cultural landscapes becomes particularly complex if their subjective components, in particular, the esthetic qualities, are considered. A number of studies of the authors who developed the ideas of "environmental aesthetics" deal with the intricate relationships between a "national paysage" and a "cultural landscape" (Bell, 2004; Porteous, 2004; Matthews, 2002; Parsons, Daniel, 2002; Kaplan, Kaplan, 1989; Carlson, 2008; etc.).The technique of assessing the impact on landscape esthetic properties (the so-called Visual Impact Assessment) is a practical result of research on visual and esthetic properties of landscapes.

There are also good examples of the regional analysis of the history of cultural landscapes made by Russia's geographers, for example, in the Russian Northwest (Isachenko, 1998) and the Central Russia (Nizovtsev, Marchenko, 2004). A special direction of research is the investigation of cultural landscapes within the country estate complexes (Isachenko, 2003).

It appears that the main distinction between the above-mentioned international and national studies in the field of cultural landscape mapping is the very understanding of the "cultural landscape" system. Many (but not all!) European interpretations of the concepts of "cultural landscape" and "landscape" regard them as synonyms, especially when speaking about rural landscapes that keep material traces of anthropogenic transformation during various historical epochs. Forming landscape as a thin, suitable for existence layer between the society and nature, people introduce a number of cultural impacts that manifested themselves in the pattern of developed space, the characteristic mosaic of rural areas, the urban patterns, and the stylistic features of the private and public property. The feedback of such cultural landscapes influences the nature of perception, the ways of landscape differentiation and assessment, and the formation of landscape iconics, i.e., cultural codes, symbols, and images.

In the course of anthropogenic impact, humans introduced various influences of culture which resulted in transformation of landscape structure and configuration of landscape patterns, development of traditional land management, creation of the linear and polygonal elements in a rural landscape, etc. – all of which constitute material and non-material cultural heritage. Elements of landscape structure and land use of different historical periods make an essential contribution to ecological stability and historical identity of a cultural landscape (Cullotta and Barbera, 2011). Cultural landscape palimpsests are formed as a result of consecutive change of different civilizations within the same territory; therefore they can contain several layers (Khirfan, 2010).

Due to specific features of historical, social, and economic development, traditional cultural landscapes do not form a continuous cover within any region. As a rule, three types of their configuration are possible at the regional level: (1) historical and cultural monuments with the status of protected cultural landscapes are points within the territories transformed during the later industrial development; (2) ancient roads, trade ways, hydraulic engineering

constructions, channels, etc., inherited in modern farming systems are lines often combined with small areas of traditional forms of environmental management (can also be objects of protection; and (3) the areas of historically developed agricultural management, with elements characteristic of them – polyculture, terraces, water-mills, and farms remained in modern system thanks to specific environment and the long history of civilization development which has already checked them for sustainability.

Agricultural terraces, the most ancient of which date back to the Ancient Greek civilization, are also important elements that played a larger role in the development of mountain landscapes of the region (Dotterweich, 2013). At present, they are under different types of land use in the Mediterranean, i.e., extensive grazing of cattle, citrus plantations, olive groves, and vineyards (Stanchia et al., 2012). Slopes of different steepness, often up to 40 degrees, are terraced in the Mediterranean, (Brancucci, Paliaga, 2005). The density of terraces varies considerably depending on the length of the slope breakers and its ratio to the area under terracing (from 5 to 800 meters per hectare) (Varotto, Ferrarese, 2008). Nowadays, the terraced slopes account for 0.3 to 65% of the area in certain regions (Liguria) in the Mediterranean (www.alpter.org).

The rates of landscape transformation are rather high in all European countries; however, the history of the formation of cultural landscapes in different parts of Europe differs quite strikingly due to both the potential of landscapes and the changes of chronotopes typical of respective civilizations. The identification of cultural and landscape palimpsests is of special interest in the regions with the longest and particularly complicated civilization history, e.g., the Mediterranean. The same-type characteristic civilization changes resulted in the presence of traces of several civilizations simultaneously within the modern cultural landscape.

Such an interpretation of cultural landscape leads to transformation of the concept landscape territorial structure, its typology, and scale. It also makes it necessary to represent cultural landscape as a spatial model suitable for mapping at different territorial levels.

From the point of view of spatial representation, cultural and landscape palimpsests are the systems integrating natural and historical subsystems. The overlay and combination of their particular components allow defining independent areas of the spatially distributed phenomena. The difficulties arising in the process of mapping are associated with both the complex nature of the cultural landscape and different temporary and spatial scales of the processes leading to its formation (Brenner, 2004). The cultural landscape as an object of mapping represents a set of the interconnected elements of three types: points, areas, and lines. The main characteristic of point elements is their position associated with features of the location. Polygon elements differ in size, configuration of borders, and form. Tracks (lines) bear property of the direction and have the extent (length) (PaHisCat, 2016). This algorithm of mapping is useful at the local level of GIS-modeling of the spatial structure of landscapes of high cultural and nature protection value.

## 3. METHODOLOGICAL FRAMEWORK

# 3.1 Study area

In this paper, we present the study of the historical cultural region of the Mediterranean. The concept "Mediterranean" is very complex for geographers and historians and suggests various definitions of its borders. From the point of view of physical geography, the region's borders are defined by such criteria as the marine catchment basin, the olive growing area (Sustainable Future..., 2005), the Mediterranean type of climate (Isachenko, Shlyapnikov, 1989), etc. Depending on the nature of the influence of the Mediterranean civilizations on adjacent areas, the historians distinguish between the "Big" and "Small" Mediterranean

(Abulafia, 2003). Within the Mediterranean, the influence of the environment on civilization development is more obvious than anywhere else (Braudel, 1949). The civilization factors played a role in both the differentiation of the region and its integration. According to the French geographical school, the Mediterranean or "The Mediterranean world" (Braudel, 1949) is a uniform region with similar natural, historical, and cultural features. Its borders correspond most exactly to the climatic zone where cultivation of olive tree and the upland grain cereals (Birot, Dresch, 1956), or the Mediterranean type of agriculture, is possible (Sustainable Future..., 2005).

### 3.2 Methods and data

Methodological approaches used for identification and mapping of cultural-landscapes palimpsests combine the techniques of historical-geographical and landscape regionalization. The technique of landscape palimpsests mapping developed for the Mediterranean included three stages: (1) the inventory of historical and archaeological data on the World Heritage Sites and systems of environmental management and identification of typical cultural landscapes of different civilizations; (2) GIS-mapping of the areas of civilizations distribution; and (3) identification of areas of cultural and landscape palimpsests and creating NATURAL AND CULTURAL portraits of the areas (Figure 1).

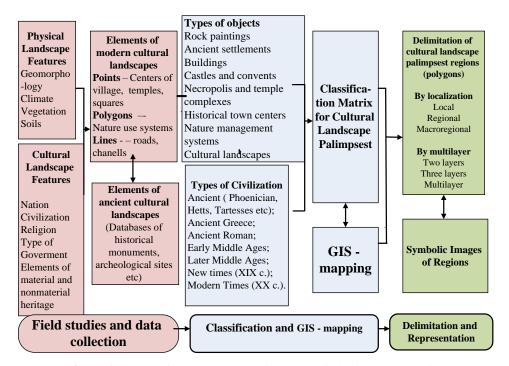


Figure 1. Stages of the landscape palimpsest delimitation and mapping

The main source of the inventory data was the global database of the UNESCO World Natural and Cultural Heritage (whc.unesco.org); for certain regions and periods the database of heritage sites wad supplemented by regional databases (BIC Andalucia etc); digital atlases available for certain regions (DARMC) were used for the inventory of cultural landscapes. In the GIS database, each object was characterized by its name, type, country, geographical coordinates, altitude, date of origin, ethnos/civilization, the existence of overlapping civilizations, type of landscape (if possible), object of protection, and the presence of management problems. Information about the state of cultural-landscape complexes and specific features of land development was obtained during field observations in 14

Mediterranean countries in 1991-2015. The results of the field observations allowed compiling the bank of georeferenced photo data and the attribute base for more than 80 World heritage sites.

All identified objects were reclassified depending on their geometry (points, lines, or polygons), functional purpose, and typicality in relation to the main type of development (Table 1).

Functional purpose	Туре	Typicality in relation to the main type of development
Rock paintings	Points	Medium
Ancient settlements	Points, rarely polygons	High
Buildings	Points	Low
Castles and convents	Points, rarely polygons	Medium
Necropolis and temple complexes	Points	Medium
Historical town centers	Polygons	High
Nature management systems	Polygons	High
Cultural landscapes*	Polygons	High

Table 1. Typicality of the World Heritage sites

Note: no linear geometry was identified)

The specified categories of objects represent various typical values of cultural and landscape complexes of the region and they all can be used as sources of verified and comparable data on their properties and time of development (Butzer, 1982; Berrocal, Garcia, 2007; and Gullino, Larcherb, 2013).

Similar work was also carried out on a reclassification of the objects' civilization eras. Analysis of historical and archaeological data allowed assigning the civilizations' areas in the Mediterranean to different stages of society development. At the same time, the identification of various types of civilizations during the historical period (AD) was rather difficult. After Le Goff (1992), we were able to identify the Christian civilization of the medieval West (within the Iberian and Apennine peninsulas), the Byzantine civilization (the Balkan Peninsula and Asia Minor), the Arab civilization, and the Ottoman civilization during the early and late Middle Ages. Classification of civilizations and their "collision" in the new and recent historical stages is, to a large extent, governed by cultural and religious factors (Huntington, 2003). On the other hand, this period already corresponds to the industrial stage of society development, when other factors, including technogenic, played central role in spatial differentiation. In this context, the areas of palimpsests were constructed just up until the fall of the Roman Empire.

The data on the reclassified objects were used for the creation of schematic cultural landscape profiles of the Mediterranean regions in Excel.

The resulting database became the basis for the thematic GIS "Civilizations and cultural and landscape complexes of the Mediterranean" compiled in ArcMap 10.0. In addition to the object data, it includes the following thematic layers:

- boundaries of the Mediterranean region based on different indicators (digitized boundaries of the water catchment area, bioclimatic region, and the olive growing area):
- landscapes of the Mediterranean (digitized map compiled using the maps by E.P. Romanova, E.V. Milanova, A.V. Mededev and A.G. Isachenko);

<sup>\*</sup>and the objects on the List of the UNESCO World heritage under such nomination.

• areas of 16 main civilizations of the Mediterranean (to Modern times and formation of the Western European civilization) digitized using the Atlas of World Archeology (2003) and the Atlas de Europa Medieval (2011)).

Processing of the regionalization data on the natural conditions, the course of civilization development, and the modern and relict cultural landscapes has yielded two types of the cultural landscape regions belonging to different hierarchical levels. Regions of the first type are uniform in terms of their natural features, and the regions of the second type have the same type of cultural and landscape palimpsests. Boundaries of the first-type regions correspond to the boundaries of the natural regions of the Mediterranean, while the second-type regions are limited by the areas of civilization distribution. Depending on the number of layers, two- and three-layered cultural and landscape palimpsests were identified: local, regional, or macroregional, in terms of their localization.

At the final stage of work, the multiple-criteria zoning of the region in terms of the expressiveness of the Mediterranean cultural landscape was done.

## 4. RESULTS AND DISCUSSION

Nine historical and geoecological regions of the first type were identified the Mediterranean; they differ in uniformity of natural landscape structure:

Iberian – with high inner karst plateaus in the central part and northern semi-humid and southern semi-arid mountainous landscapes;

South France – with northern semi-humid landscapes of folded flysch mountains and maritime plains;

Apennine – with predominant mountainous semi-humid landscapes and accumulative alluvial-proluvial plains widespread in the periphery;

Balkan – with folded flysch middle mountains in the north and limestone karst mountains in the south and with the equal share of northern semi-humid and semi-arid landscapes;

Asia Minor – with predominant semi-arid landscapes of folded flysch and limestone Karst Mountains;

Levantine – with the equal share of semi-arid landscapes of folded flysch mountains and subtropical desert-steppe hilly plains;

Maghreb – with southern semi-arid landscapes of flysch low and middle mountains and accumulative plains of intermountain and submountain basins, and subtropical desert-steppe maritime landscapes;

Lower Nile – with anthropogenic irrigated landscapes of accumulative and deltaic plains;

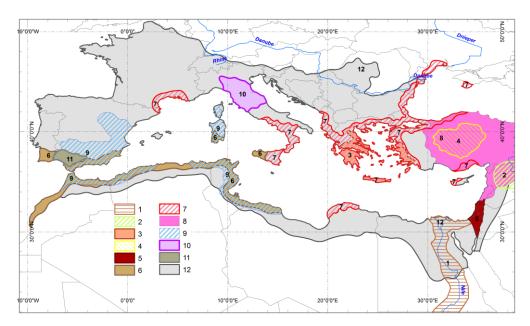
Island – with diverse landscape structure, predominance of fault-block mountains and accumulative plains on large islands and local presence of volcanic and limestone mountains.

The diversity of natural features of historical regions was particularly important for civilization development of the Mediterranean.

The history of civilization development of the Mediterranean embraces about eight thousand years (the time of emergence of the ancient Sumer civilization (Hunt et al., 2007)) of which the most ancient stages of human society are the longest ones. The analysis of historical and archaeological data allowed for rather reliable localization of the areas of civilization distribution in the Mediterranean at different stages of development of human society.

Comparison of civilizations distribution and landscape features of the Mediterranean manifests two major patterns that had developed in the region by the time of the golden age of the Ancient Roman Empire (Figure 2).

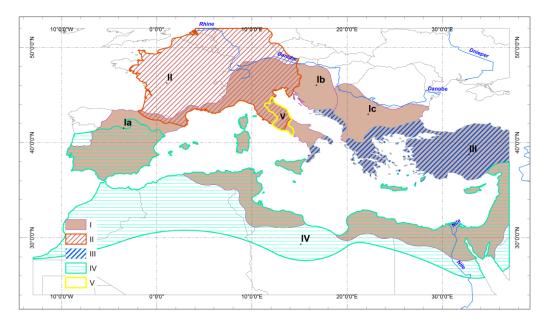
The earliest civilizations originated in the southeast of the region in river valleys of subtropical desert and steppe landscapes (McClure, 2013). Gradually, semi-arid landscapes became involved in development; the last were the western areas with northern semi-humid landscapes. Thus, changes of local civilizations followed changes of the gradient of moistening — from drier to more humid. This direction was connected with changing nature of environmental management of civilizations — from the irrigated agriculture to forestry and mining development. Also, there is evidence of evolving preference of landscape levels: after landscapes of river valleys of Mesopotamia and the Nile River delta initial development, the islands in the Aegean Sea, coastal plains of the Asia Minor and the Balkan peninsulas, and then denudation plateaus and folded structures of the Apennine and Iberian Peninsula became involved in development.



**Figure 2.** Ancient civilizations: 1 – Ancient Egypt (II thousand years BC), 2 – Sumer (III thousand years BC), 3 – Creto-Mycenean (XIV c. BC), 4 – Hittian (1250 BC), 5 – Judaic (VI-VIII c. BC), 6 – Phoenician (end of VI c BC), 7 – Ancient Greece (end of VI c BC), 8 – Assyrian (VII c. BC), 9 – Carthaginian (III c. BC), 10 – Etruscan (end of VII c BC), 11 – Tartessian (end of VII c BC), 12 – Ancient Roman (395 AD)

Various types of civilizations were classified after the fall of Roman Empire. In the periods of the early and late Middle Ages and after Le Goff (1992), we were able to distinguish the Christian civilization of the medieval West (within the Pyrenean and Apennine peninsulas), the Byzantine civilization (the Balkan Peninsula and Asia Minor), the Arab civilization, and the Ottoman civilization (Figure 3).

The spatial distribution of civilizations within the regions allows classifying them into local, regional, and interregional (macroregional). The civilizations that remained in their own zonal types of landscapes during development and kept the traditional system of environmental management based on the potential of their landscapes were classified as local. Regional civilizations, unlike local, occupied more than one zonal type of landscapes and had a diversified system of environmental management. Interregional civilizations were distributed within several zonal types of landscapes, and also had the developed system of environmental management (sometimes written in the documents (Dotterweich, 2013)), which allowed considering various geographical features of their area of distribution.



**Figure 3.** Civilizations of the Middle Ages: I – civilizations of the epoch of Barbarians diffusion: Ia - Visigoths, Ib - Ostrogoths, Ic – Vandals; II–Carlovingians; III – Bizantians; IV – Muslims; V – States of the Church

As a rule, local civilizations were first to develop. These are Sumer, Ancient Egypt partly Cretan-Mycenaean and Hittite, and Judaic, which were distributed over rather small areas. Practically all of them, except for Judaic civilization, did not survive until our days; however, their existence, in the majority of cases, accounted for hundreds, and even thousands of years.

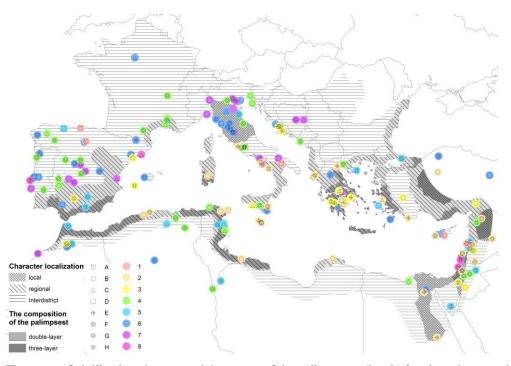
Regional civilizations are Phoenician, Ancient Greek, and, later on, the Arab and Ottoman civilizations. They occupied larger territories; the material evidence of their existence is preserved both within the area of the civilization itself and the areas that were under their influence. Thus, many Ancient Greek landscapes in Asia Minor survived to our days – several cities centers of the Hellenic culture, such as Ephesus, Miletus, and Didim, are located in the present-day Turkey.

The civilization of Ancient Rome, which occupied the maximal area in the region in the II-IV centuries AD, became the major interregional civilization. By 117 AD, there were already numerous large cities within the Roman Empire. According to some estimates, the population of Rome reached about one million inhabitants. Alexandria and Antakya had more than 100 thousand people each, and the Athens, Pergamum, Izmir, Ephesus, Ostiya, and Carthage had at least 50 thousand people (Atlas of World Archaeology, 2003). Later, the ancient Roman civilization was forced out by other civilizations; however, traces of this civilization remain in many regions of the Mediterranean

Each part of the Mediterranean approached the time of the Roman Empire with its own pre-civilization and civilization history. The history of landscape transformation for the whole region during this period is difficult to reconstruct. The reason is not only the various levels of availability of historical data for the very large territory. The subsequent civilizations quite often "remade" or even destroyed the pattern of previous development. Thus, on the Aegean coast of Asia Minor (in particular, in the area adjacent to Pergamum), the cultural landscapes of the antique era were largely buried after the invasion of Ottoman Turks.

Other areas, on the contrary, experienced the consecutive change of civilizations; each of them left the material traces in the landscape. The evidence of nature transformation in the most southern area of Spain Andalusia, by Phoenicians, Romans, Arabs, and actually Catholic Spaniards are preserved to our days (Historia de Anadalucia, 1981, Costejon, 1985).

Each historical and geoecological region of the Mediterranean is characterized by a specific type of civilization changes, which determines the type and structure of cultural and landscape palimpsests. Based on the historical data, we have identified that, by the time of the fall of Roman Empire, there were already eight types of two-layer and seven types of three-layer cultural and landscape palimpsests within the region (Figure 4).



**Figure 4.** The types of civilization changes and the nature of the palimpsests (level of scale and composition), from XX c. BC to V c. AD). The World Heritage sites: A – rock paintings, B- ancient settlements, C - buildings, D - castles and convents, E - necropolis and temple complexes, F - historical town centers, G - nature management system, H - cultural landscapes; age of World Heritage sites: 1 - Stone Age, 2 - I-II thousand years BC., 3 - VI-IV c. BC., 4 - III c. BC. - VIII c. AD., 5 - VIII-XI c., 6 - XII - XIV c., 7 - XIV - XVII c., 8 - XVIII - XIX c.

These areas underwent a transition of local civilizations into regional and, finally, the interregional Ancient Roman, covering the whole Mediterranean.

Comparison of the areas of civilizations distribution and location of the World Heritage sites demonstrates that the main foci of the cultural and landscape framework coincide with the last stage of the ancient Roman civilization. Analysis of the World Heritage sites network showed that one-third of them passed through more than one historical era, i.e., they represent palimpsests. At the same time, 60% of such objects are more than thousand years old. Large-scale water transfers from humid mountain areas to the coast and intermountain valleys are characteristic of the Roman time; almost universally in the Mediterranean, it is possible to find aqueducts, the heritage of that era. Along with aqueducts, manifestations of civilizations in the landscape are associated with theaters and amphitheaters that are usually located within the treeless steppe areas of piedmont plains (Pucci et al., 2011). In fact, the Roman civilization "multiplicated" its cultural landscapes across the Mediterranean, thereby integrating its territory into a uniform cultural and landscape area.

By the type, nearly one-third (32%) of all objects are historic centers of the cities — most of them are in North Africa, Levant, and on the Iberian Peninsula. Systems of environmental management and cultural landscapes (both objects of this category, and park ensembles with some of their objects) account for more than one-fifth (23%) of all considered objects. Another 26% of the objects are other types of areas, i.e., remnants of ancient settlements,

rock paintings, and monastic and castle complexes. The listed types of objects are mostly relicts of a cultural landscape, but some of them are still used for the same functional purpose.

Comparative analysis of certain regions of the Mediterranean (types of the World heritage sites and time of their emergence) allowed creating their historical and geoecological portrait. On the Iberian Peninsula where the material evidence of all civilization eras exists, the share of the late Middle Ages objects (the era of the formation of the Spanish nation and the Reconquest) is the largest. The role of historic centers of the cities, systems of nature management, and cultural landscapes that emerged in antique time and peaked during the Ancient Roman era in the structure of cultural and landscape complexes of the global importance of this region is high. On the Apennine Peninsula, the types of objects are similar, but the share of cultural and landscape complexes relating to modern times is higher.

From the point of view of cultural landscapes heritage within the civilization palimpsests, it is important to compare civilizations in terms of the principal systems of nature management. For example, the subsequent civilization could adopt the experience of the previous (this is the case of the Romans who, in many respects, adopted and improved the experience of the classical Greece) (Vos, Meekes, 1999). An example of the opposite situation is the change of the Roman system of cultural landscapes at the time of vandals' invasion leading to its physical degradation and destruction (Le Goff, 1992). In some regions of the Mediterranean, for example, in its African part, the system of Roman cultural landscapes still didn't manage to recover completely.

### 5. CONCLUSIONS

Cultural landscapes "accommodate" a particular ethnos and they are also the space for civilization development of a number of ethnoses. From civilization perspective, the notion of "cultural landscape" as a historic space reflecting the forms of existence of different spatial-temporal relations (or chronotopes, according to G. Knabbe) gains another meaning as well. The analysis of geographical and historical and cultural factors of formation of cultural landscapes in the Mediterranean demonstrated the existence of rather extensive transitional strip with a number of characteristic "Mediterranean" elements in the nature, culture, and economy, and a number of elements associated with the neighboring regions. Overlaying basin, climate, and vegetation zones allowed us to include in the macroregion both the catchment basin of the Mediterranean Sea and the territories with typical landscapes of the western sector of the subtropical belt. They could be found in the Central Spain and Portugal, and also the central part of Asia Minor. The northern boundary of the Mediterranean region is unclear in such definition. It is possible to include in it both the sub-Mediterranean landscapes of the Central Balkans, and the mountain landscapes of Northern Italy.

The similar "spread" of the Mediterranean is also accurately marked by civilization borders. Along with the transitional strip, the core of the Mediterranean cultural landscape could be traced by characteristic material evidence of antique civilization, inherited agricultural activity (cultivation of traditional Mediterranean olives, grapes, or wheat), and the pronounced winter maximum of rainfall.

# **REFERENCES**

Abulafia, D. 2003. What is The Mediterranean. *In: The Mediterranean History*. Thames and Hudson Ltd, London, 11–27.

Appleton, J. 1975. The Experience of Landscape. London: John Wiley.

- Aston, M. 2002. *Interpreting the Landscape. Landscape Archaeology and Local History*. London and New York Taylor & Francis e-Library.
- Bahn, P.G. (Ed.) 2003. Atlas of World Archaeology. BT Batsford, London.
- Bell, S. 2004. *Elements of Visual Design in the Landscape*. London and New York: Spon Press.
- Berrocal, M., and García, J.V. 2007. Rock art as an archaeological and social indicator: the neolithisation of the Iberian Peninsula. *Journal of Anthropological Archaeology*, 26, 676–697.
- Birot, P., and Dresch, J. 1956. *La Méditerranée et le Moyen- Orient*. Coll. Orbis, P.U.F., Paris.
- Bloom, A.L. 2002. Teaching about relict, no-analog landscapes. *Geomorphology*, 47, 303-311.
- Brancucci, G. and Paliaga, G. 2006. The hazard assessment in a terraced landscape: the Liguria (Italy) case study. In: *The Interreg III Alpter project. Geohazards Technical, Economical and Social Risk Evaluation.* Veroffentlichungen des Instituts für Geotechnik der Techischer Universität Bergakademie Freiberg, 227-234.
- Braudel, F. 1949. La Méditerranée et le Monde Méditerranéen. 3 vols.
- Brenner, N. 2004. New State Spaces: Urban Governance and the Rescaling of Statehood. Oxford University Press, Oxford.
- Butzer, K.W. 1982. Archaeology as Human Ecology: Method and Theory for a Contextual Approach. Cambridge University Press, Cambridge.
- Carlson, A. 2008. *Nature and Landscape: An Introduction to Environmental Aesthetics*. New York: Columbia University Press.
- Cosgrove, D. 1984. Social Formation and Symbolic Landscape. London: Croom Helm.
- Costejon, R. 1985. Medina Azahara. La Coruna.
- Crawford, O.G.S. 1953. Archaeology in the Field. Phoenix House; First Edition edition.
- Cullotta, S. and Barbera, G. 2011. Mapping traditional cultural landscapes in the Mediterranean area using a combined multidisciplinary approach: Method and application to Mount Etna (Sicily; Italy). *Landscape and Urban Planning*, 100, 98–108.
- Ditchburn, D., MacLean, S. and MacKay, A. (Eds.) 2011. *Atlas de Europa Medieval*. Ediciones Catedra.
- Dotterweich, M. 2013. The history of human-induced soil erosion: Geomorphic legacies, early descriptions and research, and the development of soil conservation—A global synopsis. *Geomorphology*, 201, 1–34.
- Fairclough, G., Lambrick, G. and McNab, A. 1999. Yesterday's World, Tomorrow's Landscape: The English Heritage Historic Landscape Project 1992-94. London: English Heritage.
- Gullino, P. and Larcherb, F. 2013. Integrity in UNESCO World Heritage Sites. A comparative study for rural landscapes. *Journal of Cultural Heritage*, 14, 389–395.
- Historia de Andalucía. 1981. Madrid CUPSA-Planeta.

- Hoskins, W.G. 1970. The Making of the English Landscape. Harmondsworth: Penguin.
- Hunt, Ch.O., Gilbertson, D.D. and El-Rishi, H.A. 2007. An 8000-year history of landscape, climate, and copper exploitation in the Middle East: the Wadi Faynan and the Wadi Dana National Reserve in southern Jordan. *Journal of Archaeological Science*, 34, 1306–1338.
- Isachenko, A.G. and Shlyapnikov, A.A. 1989. *Landshafty. Priroda Mira*. (Landscapes. Nature of the World). M., Mysl. (In Russian)
- Isachenko, G.A. 1998. *Okno v Evropu: Istoriya i Landshafty* (Window to Europe: history and landscapes). S.-Peterburg. Izd-vo SPbGU. (In Russian)
- Isachenko, T.E. Dvoryanskiye usadby i landshaft: tri veka vzaimodeistviya (Country estates and landscapes; three centuries of interaction). *Vestn. S.-Peterb. Un-ta.* Ser.7, 4 (31), 88–101. (In Russian)
- Kalutskov, V.N. 2008. *Landshaft v Kulturnoy Geografii* (Landscape in Cultural Geography). M., Novy Khronograf. (In Russian)
- Kaplan, R. and Kaplan, S. 1989. *The Experience of Nature. A Psychological Perspective*. Cambridge, Cambridge UniversityPress.
- Khirfan, L. 2010. Traces on the palimpsest: Heritage and the urban forms of Athens and Alexandria. *Cities*, 27, 315–325.
- Kolbowsky, E.Yu. and Klimanova, O.A. 2013. Khronotop kak factor formirovaniya i razvitiya kulturnykh landshaftov (na primere Sredisemnomorya) [Chronotope as a factor of cultural landscape formation and evolution (case study of the Mediterranean region)]. *Yaroslavskiy pedagogicheskiy vestnik*, 2. (In Russian).
- Kulturny landshaft kak ob'yekt naslediya (Cultural landscape as a heritage object). 2004. Eds. Yu. Vedenin, M. Kuleshova. M., Institut Naslediya; SPb, Dmitry Bulanin. (In Russian)
- Le Goff, J. 1992. Le XIIIe siècle : l'Apogée de la Chrétienté. Bordas.
- Matthews, P. 2002. Scientific Knowledge and the Aesthetic Appreciation of Nature. *Journal of Aesthetics and Art Criticism*, 60, 37–48.
- McClure, S. 2013. Domesticated animals and biodiversity: Early agriculture at the gates of Europe and long-term ecological consequences. *Anthropocene*, 4, 57-68.
- Mitin, I. 2010. Palimpsest. *SAGE Encyclopedia of Geography*, ed. B. Warf. Thousand Oaks, CA: SAGE.
- Nizovtsev, V.A. and Marchenko, N.A. 2004. Antropogenny landshaftogenez metody i rezultaty issledovaniy (Anthropogenic landscape genesis methods and results of investigations). In: *Geografiya, obshchestvo, okruzhayushchaya sreda*. T. II. Funktsionirovaniye i sovremennoye sostoyaniye landshaftov. Eds. K. Diakonov, E. Romanova. M., Izdatelsky dom Gorodets, 196-213. (In Russian)
- PaHisCat. 2016. Historic Landscapes of Catalonia. Methodology. Available at http://www.catpaisatge.net/pahiscat/eng/metodologia.php., accessed on 26<sup>th</sup> September 2016.
- Parsons, R. and Daniel T.C. 2002. Good Looking: In Defense of Scenic Landscape Aesthetics. *Landscape and Urban Planning*, 60: 43–56.

- Planning and the Historic Environment: Planning Policy Guidance Note 15. 1994. Department of the Environment and Department of National Heritage, London.
- Porteous, J.D. 1990. *Landscapes of the Mind: Worlds of Sense and Metaphor*. Toronto: University of Toronto Press. 1990
- Pucci, S., Pantosti, D., De Martini P.M., Smedile, A., Munzi, M., Cirelli, E., Pentiricci, M. and Musso, L. 2011. Environment-human relationships in historical times: The balance between urban development and natural forces at Leptis Magna (Libya). *Quaternary International*, 242, 171–184.
- Rippon, S. 2008. Beyond the Medieval Village. The Diversification of Landscape Character in Southern Britain. Oxford: Oxford University Press.
- Sauer, K. 1925. Morphology of Landscape. University of California. Publications in Geography, II (2), 19-53.
- Stanchia, S., Freppaza, M., Agnellib, A., Reinschc, T. and Zanini, E. 2012. Properties, best management practices and conservation of terraced soils in Southern Europe (from Mediterranean areas to the Alps): A review. *Quaternary International*, 265, 90–100.
- Sustainable Future for the Mediterranean. The Blue Plan's Environment and Development Outlook. 2005. Earthscan, London.
- The European Landscape Convention. 2002. Naturopa Issue № 98 Council of Europe/Strasbourg.
- Varotto, M. and Ferrarese, F. 2008: Mapping and geographical classification of terraced landscapes: problems and proposals. *In: Terraced Landscapes of the Alps*. Venice.