Sanijela Štulić

PROTECTION OF HISTORICAL LANDSCAPE IN SERBIA

THE CASE OF THE ROMAN TRENCHES

MA Thesis in Cultural Heritage Studies: Academic Research, Policy, Management.

Central European University

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by

Sanijela Štulić

(Serbia)

Thesis submitted to the Department of Medieval Studies,

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Accepted in conformance with the standards of the CEU.

Chair, Examination Committee

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Budapest May 2016 I, the undersigned, **Sanijela Štulić**, candidate for the MA degree in Cultural Heritage Studies: Academic Research, Policy, Management, declare herewith that the present thesis is exclusively my own work, based on my research and only such external information as properly credited in notes and bibliography. I declare that no unidentified and illegitimate use was made of the work of others, and no part of the thesis infringes on any person's or institution's copyright. I also declare that no part of the thesis has been submitted in this form to any other institution of higher education for an academic degree.

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Abstract

The "Roman trenches" present an integral part of the system of earthworks, located in the vast area of the Pannonian Basin. There is a large and international scholarship dedicated to resolving the issue of the origins, development and purpose of these earthworks, however, there are no studies allocating their legal protection. The deterioration of the earthworks, due to modern threats underlines the necessity for protection in the terms of the law. The applied methodology encompassed landscape archaeology approach and comparison of sources and existing literature on this topic. Additionally, the research included a fieldwork with a purpose of evaluating the current state of the previously selected area of the major Roman trench and the perception of it by the local population. The protection is to be conducted in a way that it comprises the standards of the new conventions and international regulations in the cultural heritage field. For this purpose, the category of the cultural landscape is offered as a solution, covering cultural, natural, social, and economic aspects. By engaging various factors in this process, the all-inclusive protection can be achieved. More importantly, it may be implemented in other places and in a wider region as well.

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Introduction

The landscape approach in the field of archaeology has been widely used because of its potential to indicate the relationships and dynamics between humans and their environment across time and space. The context of landscape as physical, cultural or social construction allows a broad range of possible types of analysis (patterns and systems detection, exploitation and alteration of space, memory and symbolism, etc.)¹. By default, this method includes an actual spatial component -- the environment. More importantly, it provides pubic visibility for archaeological practice by highlighting the way local communities perceive the landscape they interact with. The local understanding of landscape is crucial in the process of interpretation.² Therefore, a defined landscape can be used as a tool for attracting communities to take an active part in maintaining their recognized heritage and enhancing its preservation.

Because of its wide scope, landscape archeology offers a suitable framework for conducting research that concerns issues of heritage preservation. The inclusivity of this approach, in terms of evaluating cultural and natural assets along with the engagement of people who inhabit the particular area, justifies its implementation. Because of its ability to connect various actors and processes, landscape approaches became widely accepted and acknowledged even through the highest international documents, such as European Landscape Convention.

¹ Stephen Rippon, *Historical Landscape Analysis: Deciphering the Countryside*, Practical Handbooks in Archaeology 16 (York: Council for British Archaeology, 2004), 19-20.

² Kurt F. Anschuetz, Richard H. Wilshusen, and Cherie L. Scheick, "An Archaeology of Landscapes: Perspectives and Directions", *Journal of Archaeological Research* 9, no. 2 (2001): 159,163. For a general overview of landscape archaeology development, see Chapter I by Marina Gkiasta, "The History of Landscape Archaeology: Major Traditions and Approaches in the Historiography of Landscape Research on Crete" PhD Dissertation, University of Leiden, 2008 http://openaccess.leidenuniv.nl/bitstream/1887/12855/5/, Accessed April 2016. For landscape archeology see Michael Aston, *Interpreting the Landscape: Landscape Archaeology and Local History* (London: Routledge, 1985).

The latest trends in the field of heritage emphasize the role of local communities in the process of protection. It has been noted that sustainability largely depends on local perceptions of heritage and its values. This fact is related to utilization of heritage as a resource. Even though heritage contains a number of unprofitable features (scientific, artistic, historical, and educational), it has the capacity to provide local income for both the community and maintenance of the landscape features. However, these views, usually juxtaposed, must be carefully balanced. When discussing the protection of landscape, another significant aspect is economic development. Present social circumstances generally foster fast-track development, thus, the heritage is sometimes seen as an obstacle to progress. Therefore, the principles of protection need to be legally binding. The creation of an official document (proposal) for protection is essential and that is the intention of this paper.

For this purpose, I address the issue of protection through a case study of large earthworks in northern Serbia known as Roman trenches. Based on one definition, an earthwork is "an embankment or other construction made of earth; especially: one used as a field fortification".³ These mysterious creations of past cultures resist the ravages of time and stand as testimonies to human endeavor in the past. For centuries, they have retained their physical space and served as a defining structure in the flat landscape of the Pannonian Plain. Recently, however, due to intensive land use they have become endangered and are slowly being "eaten away". For these reasons, they deserve attention and care.

Since the landscape is understood as a product of human interaction with nature, landscape archaeological features or monuments offer the best opportunity for protecting both natural and cultural values in an inclusive way.

³ http://www.merriam-webster.com/dictionary/earthwork

The earthworks of this region are usually connected to Roman building activity and present a distinguish feature of the Roman defense system.⁴ Rising interest in safekeeping these structure can be seen in the recent attempts to include them as part of the Pannonian Limes, a UNESCO World Heritage Site -- "Frontiers of the Roman Empire." The study here refers to a sequence of earthworks located in northern Serbia, particularly one segment of so-called 'major' Roman trench.

Despite continued scholarly interest, the question of the legal safeguarding of earthworks in Serbia has remained on a level of unofficial recommendations and suggestions. In light of new approaches in the field of heritage protection and management, the issue of their legal protection arises. The need to preserve them is even more evident considering modern-day threats. The size and complexity of different earthwork sections present a difficult problem in terms of their legal protection. Therefore, issues of chronology, authenticity, and historical value need to be narrowed down to one particular segment or rather a sample which is predefined and researched in detail. The task here is to examine the current state of one section of the 'major' Roman trench and put forward arguments for its legal protection. This includes the analysis of relevant data, the identification of possible causes of its destruction and an evaluation of earthwork as archaeological heritage. Furthermore, the issue of protection is posed in the wider context of the created (cultural) landscape, which is a product of a natural environment shaped by human needs in a specific historical framework.

The following research encompasses academic evaluation based on standards in cultural heritage protection and investigates the opportunities for integral protection of both natural and cultural values, and reflects the opportunities for a working legal framework.

⁴ Maja Đorđević, *Arheolška nalazišta rimskog perioda u Vojvodini* [Archeological Sites from the Roman Period in Vojvodina] (Belgrade: Institute for the Protection of Cultural Monuments in Serbia, 2007),83-84.

According to new tendencies in cultural heritage management, a risk assessment for the area is provided as well. I hope that this model of a proposal for protection will be implemented or serve as a prototype for other similar examples.

Chapter I. The Roman Trenches in Serbia and their Interpretation as Archaeological Heritage

In archaeological literature, the term "Roman trenches" is commonly used by professionals and laymen to describe the large earthworks system found on the Pannonian Plain, particularly the earthworks located in the Vojvodina Province. Even though there are a variety of forms within these structures, they all reflect the same architectural solution. They usually consist of a bank (rampart, *agger* or *vallum*) and a ditch or ditches (*fossae*). The basic principle of construction meant that by digging a canal or a ditch the builders simultaneously created a mound or a bank lying behind it. Although the term itself carries a period reference, the exact time of construction is still highly debated. Similar structures have been identified all over the region, in the territories of several neighboring countries: Hungary, Romania, and Croatia. Moreover, this type of landmark feature also appears in other regions, where they are generally interpreted in the context of a Roman legacy. Along with other features from this period, they are mostly presented as remains of a former Roman defense line – the *limes*, -- still visible in the landscape.⁵

Another unique feature of earthworks concerns their geomorphology and the special characteristics of the natural environment in this region. Today, due to intensive regulation of water flow in rivers, canals, and streams on the one hand and agricultural activities (irrigation and drainage) on the other, the area surrounding the trenches looks very different from the time they were built. In such a flat landscape, the trench ramparts were dry, elevated ground. Additionally, such a huge structure was and still is visible from a distance. They may thus

⁵ The *limes* was an artificial border between the Roman Empire and the world outside the empire. It stretches across three continents. It was created by the Romans as a division line but also as protection from the so-called barbarians. The *limes* may contain a number of different features, such as walls, ramparts, ditches, military fortification, etc. See David J. Breeze, Sonja Jilek, and Andreas Thiel, *Frontiers of the Roman Empire, Central Europe Project "Danube Limes – UNESCO World Heritage"* (Warsaw: Warsaw University, 2009); Recent literature: L. Vagalinski, N. Sharankov, ed., *Limes XXII. Proceedings of the 22nd International Congress of Roman Frontier Studies* (Sofia: National Archaeological Institute, 2015).

have served for spatial orientation. These earthworks, apart from their role in historical events (assuming that it was originally a defensive military feature), could have had multiple or diverse uses over time.

Methodology

Understanding the different aspects of major Roman trench requires a complex interdisciplinary approach. In order to collect, analyze and reproduce relevant material for creation of a proposal for protection, I have used a variety of methods derived from a number of related academic fields and disciplines.

Research on the major Roman trench, comprised several stages. The first phase included the review and evaluation of relevant sources collected from archeological, historical, legal and environmental studies. The next phase involved fieldwork and source tracking, which had to be carried out prior to further study. The examination continued with contextualization of these features in a historical perspective, where the notions of their existence in written sources and other documents (reports and results of archeological work) was compared. In addition, elements of memory and meaning attached to these earthworks by local communities through oral history are also taken into account.

Bearing in mind that the goal of this project is to create a proposal for the integral protection of the earthworks, the next step was to deal with the concept of landscapes (cultural and natural) as a form where different types of heritage are con-joined, contributing to an inclusive and holistic approach to preservation issues. This approach also included the analysis of the existing legal framework in Serbia and explored potentials on the international level by reflecting the main standards embedded in related conventions.

Finally, the aspect of risk assessment and heritage management is elaborated. This part of the research stresses the role of stakeholders and tackles the issue of excluded and unrepresented groups/individuals in connection with these earthworks and their preservation.

Preconditions

Starting with the structure of the major Roman trench, the most obvious facet of this huge earthwork is its spatiality. For gathering data on its physical attributes, topographic context, surrounding areas and state of preservation, I used some of the most common methods in practice of archeological field survey. By these means, it was possible to better understand the trench's structure and its relation to the environment. The density of populated sites as well as their spatial arrangement (through time) can illustrate the various roles and importance that were attached to the trench structure over the many years of its existence. Since the major Roman trench was designed in a particular environment, on a plain with a high ground water level, its construction should be seen in the context of natural conditions along with the historical events which may inspired its creation. Basic data were complemented with the application of aerial photography, when the part of the trench's structure was recorded by drone.

Finally, every record was imported into a coherent digital system (primarily based on an AutoCad platform, with the additional possibility for AutoCadMap and QGIS),⁶ which enabled the easy manipulation of data. In addition, the database was referenced in a way that corresponds to the national grid.

⁶ GIS, satellite imagery and other methods have been utilized in archaeology for decades, particularly in reconnaissance and pattern detection. Equally, computer platforms used in architecture or urban planning along with maps and substrates helped in identifying and mapping features on a wider scale. See Andrea Scianna and Benedetto Villa, "GIS Applications in Archaeology", *Archeologia e Calcolatori* 22 (2011): 337-363 or http://www.europeana.eu/rights/rr-r/ and Stephen Rippon, Ibidem, 25-26.

Method of analysis

 A) The core aspect of the major Roman trench is its historical authenticity. For this issue, I compare available accounts in historical sources.

The relevant records for this part of the research include the wider geographical region. Here, I dealt with the origins of these structures and oldest surviving (written) accounts of them. Most importantly, I also collected records of these objects on old maps and drawings. The type of written sources examined in my research includes accounts from antiquity, which may or may not be relevant, however, they must be included and discussed. With the help of other sources, the main aim is to track the appearance and features of the trench from its earliest existence onwards. The results of this research are put into their chronological context, justifying the historical value and the necessity of protecting this earthwork.

The overview of the archeological research conducted on the trenches and related literature will provide a prelude to the analytic chapter. To support claims of the earthworks' historical accuracy and long existence, I refer to the conclusions in this part of the methodology. The goal is to delineate the period when these earthworks were most probably built along with the issue of its possible creators and the purpose of the initial construction.

B) The second aspect of the research encompasses protection of the trenches and earthworks within the national/international legal framework and landscape studies.

Here, the issue of protection is raised and the possible legal frameworks are elaborated in detail. To illustrate various solutions, I refer to examples from elsewhere in Europe and explore what kind of programs were applied in particular cases to other spatially extensive entities such as World Heritage Sites (Roman Limes). The most significant part of this research deals with the category of cultural landscape and how it operates.

C) The final part of the methodology is related to risk assessment and the roles of authorities, local communities, and other state, public, and civic organizations.

The risk assessment is based on results collected in the field, pointing out major threats. The protection proposal should not only list the hazards but also provide suggestions for mitigating these effects. Since the legal process is traditionally connected to official state bodies, emphasis is put on other possible interested parties and their involvement, often neglected but crucial in the process of protection and sustainability. This aspect is two-fold. On the one hand, risk can be traced to the memory issue, providing/reestablishing the connection of local people with their heritage. On the other hand it creates a chance for the local community to participate and ultimately benefit from the protection, particularly concerning tourism. This reflects the content and structure of the proposal, especially in terms of shared responsibility. However, the utilization of heritage should be restrained and conditioned by protective measures. The inclusion of a wide network of users such as local community, non-governmental organizations (NGOs) and other organizations, is necessary since development and sustainability need to be balanced.

By grasping the main aspects of the Roman trenches, such as their spatial organization, history, and current state, I hoped to create a comprehensive model for protection. The authenticity of the Roman trenches and their chronological scope present a crucial point in the protection process. In addition, I consider that the legal framework for protecting such structures should be broadened and encompass other values as well. Moreover, it should engage other actors and by different means secure the protection of the Roman trenches. Regardless of the scale of this research, I expect that it will contribute to

protection of cultural heritage by establishing a model which can be implemented for similar features in Serbia, in the region or elsewhere.

I.1 The Roman Trenches in Serbia – Topography and Connections to Other Earthwork Systems

The earthworks found in the vast area of the Pannonian Plain belong to a complex system of somewhat irregular and multiple lines erected on the fringes of this area (Fig.1). In each country they are known by a local name. For instance, earthworks in Hungary are called the Devil's Dyke or Csörsz Ditch. Regardless of their local character, it is assumed that most of them present integral parts of a much larger scheme. Equally, most of experts agree that earthworks are ancient. An argument in favor of these claims is the fact that they share elements such as the construction materials used and the form of the structure and their purpose.

The earthworks of the region are grouped into two different categories according to their geographical locations: the inner and outer system. The core of this division lies in the fact that there is an outer line of earthworks surrounding the Hungarian Great Plain (Alföld), while other earthworks are located in the center of this area or next to the major rivers. Based on their spatiality, the inner earthworks may not have had the same function and may have been built at different times. According to some researchers, the trenches located in northern Serbia are part of the Lower Danube *limes* system,⁷ which encompasses similar features erected near the Danube in southern Romania and the eastern part of Croatia.

There are several branches of earthworks in northern Serbia, located in various parts of Vojvodina Province. The focus here is on two trenches located in south Bačka County.

⁷ Sándor Soproni, "Limes sarmatiae", A Móra Ferenc Múzeum Évkönyvei 2 (1969): 117.

Both are known as "Roman"; one is called "major" and the other "minor" (Fig.2). The difference between them exists in the terms of their size, spatial extent, dimensions, degree of preservation, possible function, and ultimately their origin. The minor Roman trench is longer but more poorly preserved, while the major is shorter and generally in a better state. Nevertheless, the common feature for both trenches is their connection to major rivers.

The minor Roman trench is located several miles north of the Danube River, running parallel with the river's flow in this section (Fig.3). It consists of a main stretch running from east to west along with at least four short side paths. The approximate length of the main stretch is 120 km. The starting point of the trench can be traced near Apatin, and followed to the village of Prigrevica, where it turns in a curve continuing in a southeasterly direction. It passes the village of Doroslovo, towards the village of Srpski Miletić and the Mostonga River, where this section ends. This is probably the best-preserved section of this trench. Further to the east, evidence of a trench can be seen near Odzaci and the village of Ratkovo. From this village the trench continues in an easterly direction with a bit of deviation. From this point onwards as far as the village of Gospodjinci, where it turns to the north and makes a loop around the settlement. The minor Roman trench consists of a rampart with a ditch along its southern side. At only one short section the bank is accompanied by two ditches dug out on both sides of the rampart.

The major Roman trench is located in the same region as the minor Roman trench but it follows the flow of the Tisa River. The starting point of this trench is located near Novi Sad at the old Danube riverbank (Fig.4). From there it heads in a northeasterly direction and continues in the same direction for its entire length, passing the village of Gospodjinci before terminating at the village of Čurug. Overall it is 25 km in length. In contrast to the minor trench, it is more visible in the landscape and the state of its preservation is far superior. One of its main characteristics is its consistent course and layout as evidenced by the fact that there are only two points where the trench turns at an obtuse angle. The ditch exists only on the western side of the rampart and in some sections major trench is filled with water. Another key feature of the major trench is the presence of 'gates' or openings that still remain in the rampart (Fig.5). It is important to note that there are two points where the minor and major trenches intersect, even though their correlation is still unclear. The idea that these trenches were constructed as military objects is widely accepted in the scholarship: however, there are also opinions that they might have served different purposes.

I.2 Archaeological interpretation of the Roman Trenches in Serbia

The issue of the earthwork system has always had a distinct place in the regional archaeology. The significance of this research can be seen through the statement of the prominent Hungarian archeologist Pál Patay, who considered the work he did on these features one of his main achievements and contributions to archeology. Because of their specific nature, earthworks attracted attention even in the Middle Ages and later in the Renaissance. The remains of the Roman frontier system were in the focus of academic archeology from the early beginning of the modern discipline. A number of comprehensive works done on earthworks and published in last few decades display a permanent scholarly interest in this matter. Therefore, it is relevant that all the basic reference works dealing with the Roman period of the region should offer a short overview of this topic, stressing the relation of the Roman trenches and earthworks in the region.⁸

⁸ For research on Roman frontier system in this region see András Mócsy, *Pannonia and Upper Moesia: A History of the Middle Danube Provinces of the Roman Empire* (London: Routledge, 1974); Alfonz Lengyel and George T. Radan, ed., *The Archaeology of Roman Pannonia* (Lexington: Kentucky University Press, 1980);

There are few antique sources mentioning the earthworks or features, however, these accounts are vague in terms of location, but in general they refer to the wider region of Pannonian Plain. The *Notitia Dignitatum* contains an account of construction called *fossatum Sarmatae*.⁹ Ammenianus Marcellinus in his *Rerum Gestarum*¹⁰ mentions how, during the conflict between the Romans and Sarmatian tribes in 359, Emperor Constantius placed a rampart near Acimincum¹¹ and erected a high mound. In a chronicle from Sankt Gallen, written in the ninth century, a Benedictine monk tells a story of Frankish military campaign against the Avars. Briefly, he mentions how a number of rings/ramparts surround the lands once ruled by the Huns.¹² These rings are very debated, so it is unclear to what extent they refer to the ramparts. A 13th century copy of foundation charter from 1067, mentions a "great ditch" in the context of Százd abbey, near Tiszakeszi, Hungary. A document from the sixteenth century which refers to events of the eight century, explains that the ditch was erected as protection from the enemy in the time preceding Attila.¹³

In the early twentieth century, prominent Hungarian scholars began research on parts of the country that are nowadays located in Serbia.¹⁴ Later, particularly during the 1960s,

Zsolt Visy, László Bartosiewicz et. al, *Hungarian Archaeology at the Turn of the Millennium* (Budapest: Ministry of National Cultural Heritage, 2003), 203-261.

⁹ Olga Brukner, "Rimski nalazi u jugoslovenskom delu barbarikuma- Bačka i Banat" [Roman finds in the Yugoslav part of *Barbaricum*' Bačka and Banat] *Arheološki vestnik* 41 (1990): 201 and Endre Toth, "Contra Acinco et Bononia", *Arheološki vestnik* 33 (1983):73.

 ¹⁰ Ammenianus Marcellinus, Vol 1., Libri XIX, 10,2-4-11, 1, A.D. 359. See translation by John C. Rolfe (London: William Heinmann,1935),523.
¹¹ This was a station or permanent cavalry barracks located in Pannonia. It has been interpreted as Alt-

¹¹ This was a station or permanent cavalry barracks located in Pannonia. It has been interpreted as Alt-Salankemen, present day Slankamen in Srem county, Serbia. See William Smith, *Dictionary of Greek and Roman Geography* (London: Walton and Maberly,1854),20.

¹² A. J. Grant, ed. and trans., *Early Lives of Charlemagne by Eginhard and the Monk of St. Gall* (London: Chatto & Windus, 1922), 106.

This issue is also discussed in László Szekeres, "Problem takozvanih Rimskih šanceva u Bačkoj" [The problem of the so-called Roman trenches], *Materijali* 22 (1986): 145; Borislav Jankulov, "Utvrdjenja Rimljana i varvara iz doba seobe naroda u Bačkoj i Banatu" [Fortifications of Romans and barbarians in Bačka and Banat], *Rad Vojvodjanskih Muzeja* 1 (1952): 28.

¹³ Eszter Istvánovits and Valéria Kulcsár, "Actual State of Research of the Csörsz- or Devil's Dyke", *Identități culturale locale și regionale în context european. Studii de arheologie și antropologie istorică* (2010): 311.

¹⁴ Róbert Fröhlich, "A bácskai ú.n. római sánczok" [The so-called Roman trenches in Bačka], *Archeológiai Értesítő* 7 (1887): 19-30, 132-138, 207-213, 304-310; Gyula Dudás, "A bogojevai római sánczról" [On the Roman trench at Bogojevo], *Archeológiai Értesítő* 19 (1899): 409; Gyula Cziráky, "A bogojevai "római sánczok"" [The Roman trenches at Bogojevo], *Archeológiai Értesítő* 20 (1900): 76; Gyula Dudás, "A bácskai

organized and simultaneous excavations were conducted in the area of present-day Hungary and Serbia. As a result, several articles were published containing the results of investigation carried out in different scopes and on different locations.¹⁵ A few decades later, one of the most comprehensive and influential publications concerning the topic was issued in Hungary.¹⁶ The joint work of Soproni, Patay, and Garam had a huge impact on the thoughts and conclusions of archaeologists working in Serbia. Although the first attempts at answering the major questions surrounding the earthworks based on archeological evidence had limited outcomes, scholars were still able to form a number of different opinions and theories concerning the more precise chronological span, attribution, and function of these features. Attention on the dykes, trenches, and ditches was renewed in the early 1990s after several excavations organized mainly in Hungary.¹⁷ The latest contribution to the research concerning the earthworks was presented in the larger framework of conferences dealing with Roman and ancient border lines that were held over the last few years.¹⁸

ú.n. római sánczok a régi oklevelekben" [The so-called Roman trenches in Bačka in old charters], *Archeológiai Értesítő* 27 (1907): 191. A summary of the research history of this subject with the latest publication can also be found in my article on the earthworks: Sanijela Štulić, "Research of Roman trenches in Serbia in relation to the Csörsz Ditch in Hungary", *Hungarian Archaeology*, Autumn (2015) <u>http://files.archaeolingua.hu/2015O/eng Stulic 15O.pdf</u>¹⁵ Vilmos Balázs, "Die Erdwälle der Ungarischen Tiefeben", *Acta Archaeologica Academiae Scientiarium* 15

¹⁵ Vilmos Balázs, "Die Erdwälle der Ungarischen Tiefeben", Acta Archaeologica Academiae Scientiarium 15 (1963): 309-336; Sándor Nagy, "Izveštaj o rezultatima istraživanja uzdužnih šančeva na području Vojvodine" [Report on reseach results on longitunal trenches in the Vojvodina], Rad Vojvodjanskih Muzeja 15-17 (1968): 103-108; Sándor Soproni, "Limes sarmatiae", Archeológiai Értesítő 69, no. 1 (1969): 43-53.

¹⁶ Éva Garam, Pál Patay, and Sándor Soproni, *Sarmatischen Wallsystem im Karpatenbecken*, Régészeti Füzetek II, no. 23 (Budapest: Magyar Nemzeti Múzeum, 1983).

¹⁷ Eszter Istvánovits and Valéria Kulcsár, "The History and Perspectives of the Research of the Csörsz Ditch ('*Limes Sarmatiae*')", *Limes XVIII*. Proceedings of the XVIIIth International Congress of Roman Frontier Studies held in Amman, Jordan (September 2000), ed. Philip Freeman, et al. (2002): 625-628.

¹⁸ Eszter Istvánovits and Valéria Kulcsár, "Gondolatok az Alföldi sáncok kutatásának jelenlegi helyzetéről" [Thoughts on the present state of research on the Pannonian trenches], *Avarok pusztái: Régészeti Tanulmányok Lőrinczy Gábor 60. születésnapjára* [Deserts of the Avars: Festschrift for the 60th birthday of Gábor Lőrincz], ed. Alexandra Anders, Csilla Balogh and Attila Türk (Budapest: Martin Opitz Kiadó, 2014), 73–84; Alexandru Matei and Robert Gindele, "Sistemul defensiv nord-vestul Daciei descoperit cercatările archaeologice de la Supurul de Sus (jud. Satu Mare) și pe baza documentației din izvoalere scrise" [The Roman defensive system in northwestern Dacia. Field research at Supuru de Sus (Satu Mare County) and literature sources], *DACIA AVGVSTI PROVINCIA. CREAREA, Actele simpozinului desfăşurat în 13-14 octombrie 2006 la Muzeul Național de Istorie a României* [Documents from symposium held on 13-14 October 2006 in the National Museum of Romanian History], ed. by Eugen Silviu Theodor and Ovidiu Tentea (București: Muzeul Național de Istorie a României, 2006): 1-25.

From the earliest to the most recent works regarding the topic several common characteristics are repeatedly recognized throughout. Primarily, each of the authors deals with the spatial distribution of the earthworks. Furthermore, the authors provide accounts of the physical characteristics by describing them together with their existing parts and also possible reconstructions of structures that do not remain.

Spatial analysis

One outcome of the spatial analysis conducted on the extensions of the earthworks was that it became acceptable for most scholars to refer to them as two separate groups, one group as outer (longitudinal) and the other as inner earthworks. The longitudinal earthworks are usually considered those at the very edge of the Pannonian Plain whilst the second group incorporates all lateral directions and other parts of the earthworks within this area. As was already mentioned, the sections of the earthworks situated in Serbia, according to some researchers, are associated with structures that stretch further south along the Danube River.¹⁹ Ultimately, questions relating to the organization and mutual relationship of different parts of these earthworks are still very open to debate.

Chronological issues

In close relation to the spatial issue, the problem of chronology concerning not only particular sections, but also the entire area that contains the earthworks, is also up for discussion. Archeologists agree that these features were built over a broad time span and, regarding their scale, they were probably constructed over several different phases. However, the common opinion is that they were constructed in the Roman Period, although various chronologies were offered based on different concepts that combined dating with other

¹⁹ Pavle Velenrajter, "Dosadašnji rezultati ispitivanja limesa u Bačkoj" [Results of research conducted on limes in Bačka], *Limes u Jugoslaviji I*, ed. by Miodrag Grbić (Beograd: Societas archaeologica Iugoslaviea, 1961), 51–58.

features of the Roman frontier system (Fig.6). Two other issues concerning the earthworks are their ethnic attribution and the purpose of their construction. Archeologists who support the theory of creation in the time of Late Antiquity tend to attribute the construction of the earthworks to Sarmatian tribes who were allies of the Romans. These claims are rooted in facts that relate to historical events, archeological findings, and building techniques. In terms of their purpose, again, most archeologists believe that earthworks were military constructions with an emphasized defensive role.

Archaeological research in Serbia

In order to begin any historical overview of the research carried out in the last fifty years in Serbia, it is necessary to mention the results of the excavation conducted on the minor Roman trench in 1966 by Sándor Nagy.²⁰ This work was accomplished through international cooperation between Serbia and Hungary. The excavation took place near the village of Doroslovo, at the site named Pusztaszentegyháza. The specific feature of this line of earthworks is that it has trenches on both sides of the rampart. The author made several cross sections cutting the trench and the rampart as well as two separate high hills that are located nearby and were assumed to have been watchtowers. Based on these results, he concluded that the minor trench probably served as a defensive line for protecting the inner part of southern Bačka County. Furthermore, he revealed that there are archeological remains that prove that there was a bridge over the trench as well as a passage running through the rampart at this location.

In 1986 the Association of Yugoslav Archaeologists organized a conference with the topic "Defensive Systems in Prehistory and Late Antiquity in the Territory of Yugoslavia",

²⁰ Sándor Nagy, "Über die Untersuchung der Längswälle in Jugoslawien", A Móra Ferenc Múzeum Évkönyve 2 (1969): 135-137; Sándor, Nagy, "Izveštaj o rezultatima istraživanja uzdužnih šančeva na području Vojvodine" [Report on research results of longitudinal trenches in Vojvodina] Rad Vojvodjanskih Muzeja 15–17 (1968), 103–108.

after which the presentations were published. Among them was an article by László Szekeres concerning the trenches in Bačka.²¹ He gave a description of the geographical diffusion of the trenches in South Bačka and called them longitudinal, the opposite of previous accounts. In questioning their attribution and chronology, he recalled some of Soproni's claims. He believed, similarly to some other Hungarian authors, that the term "Roman trenches" had first been used by Luigi Marsigli, an Austrian general from the eighteenth century (Fig.7). Nevertheless, for Szekeres, the main issues are related to the attribution and function of these structures. He also wrote about the associated structures such as the gates in the major Roman trench as well as some side branches of the minor trench. He provides a calculation of how much of work force was needed for building these objects and time necessary for their construction. He concludes that the minor Roman trench must have been erected by Sarmatian tribes and dates it to the second third of the fourth century AD, repeating a similar interpretation by Soproni, Garam and Patay. He concluded that the character of the minor Roman trench had to be defensive as the trench lies on two major waterways (Danube and Tisa Rivers). He did not give any specific dates for the major trench, but dated the construction in a wider timeframe, from the first century AD to the fourth century. He ended his work with an appeal for more organized and systematic support to help solve one of the oldest questions in Pannonian archaeology.

The next article concerning the Roman trenches was published in 2000. The author, Nebojsa Stanojev, an archeologist from Museum of Vojvodina, published the results of his research and introduced a relatively new interpretation of the major Roman trench.²² He began his research by surveying and recording sites found around these earthworks and concluded that most of these settlements, attributed to the Sarmatians, originated from the

²¹ László Szekeres, Ibidem, 144-152.

²² Nebojša Stanojev [Станојев, Небојша], "Римски шанчеви- водопривредни систем Панонске низије" [Roman trenches-- the economy of water supply], *Рад Војвођанских Музеја* 41-42 (2000): 29-42.

fourth century AD. Furthermore, he agreed with other scholars that the earthworks had been erected during this period. However, he placed the trenches in the wider context of the Pannonian Plain, defining them as waterways or canals. He claimed that the local populations had built them in order to obtain a better communication route to provide easier access to trade and transport of supplies. He added that the earthworks had not been built at the same time but over a long period of time. Although this idea was not new²³ in order to support his theory, Stanojev used topographical records that indicated the origins of trenches as canals. He stated that Marsigli, who was the first person to call them trenches, was a soldier and engineer, accordingly thought that they would have served some military purpose and this was later adopted in the literature and among scholars. In order to support these statements, he provided not only examples from the Danube region (the Djerdap gorge), but also ones from the canal system in Srem County, linking antique Sirmium and Bassianae. Stanojev also declared, though in a vague manner that suggests his opinion was far from concrete, that the minor Roman trench was built later than the major one. He saw the minor trench as a possible communication route, saying that the existence of ditches on both sides of the rampart proves that this path presented a dry road that was created in a marshy area. When describing the major trench, he stated that it begins in the floodplain of the Danube River and it goes along for approximately 25 km in a north and northeasterly direction. He suggested that the points where the trench changes its direction slightly were a result of the need to avoid depressions. The argument that this object served as a canal is constructed around a claim that the bottom of the ditch is more or less even, which is important for water transport. Furthermore, Stanojev supported his claim with the fact that many of the archaeological sites that were discovered near the trench had both settlements and graveyards from the period of Late Antiquity. He described the features of the rampart implying that one side was less steep so

²³ Melhior Erduhhelji, *Istorija Novog Sada* [History of Novi Sad] (Novi Sad: Municipality of the Free Royal Town of Novi Sad, 1894),16.

boats could be pulled out on to dry on top of the rampart. He also mentioned the result of the excavation where he had discovered remains of the houses, dated to the third and fourth century AD under the rampart. According to him, this is a terminus post quem for building "canals". He proposed the final dating for the major trench as the first third of fourth century and he suggested the Romans as the possible designers. As an argument against the idea of trenches being fortifications, he stated that no engineer would have excluded major settlements from the protected area.

As a response to this theory, archaeologist Radovan Bunardžić briefly referred to the issue of the main purpose of the major Roman trench in an article dealing with the location of ancient Acimincum, published in 2005.²⁴ He claimed that this feature is a military construction and he treated its layout with mathematical equations. He cited older sources that mentioned the area east of the major Roman trench as an old Roman triangle, suggesting that most of the Sarmatian tribes lived on this territory. He did not explain why there are two places where the trench bends at specific angles, but implies that its hydraulic peak is placed at almost the exact middle of the feature. For the gates, he claimed that they were left open along medieval roads and this in turn explains that the local population must have been using it even in later periods (or that these roads existed in antiquity as well). In addition, he criticized Stanojev for his dating calculations. According to him, the fourth century was a period of constant conflict between the Romans and the Sarmatians. He also tackled the issue of the transportation of goods, asking for whom these cargos had been intended. In the end, he posed a question of maintenance. During the construction of an oil pipeline in 1977, the major trench was cut through. Bunardžić used this opportunity and conducted a small-scale excavation documenting the point of intersection (Fig.8). He discovered that the bottom of the ditch was filled with uniform deposits of soil with no traces of sludge. The graphic

²⁴ Radovan Bunardžić [Бунарцић, Радован], "Ка убикацији Acimincuma" [Locating Acimincum], *Годишњак Музеја Града Новог Сада* 1 (2005): 37-57. The other term used for same location is Acumincum.

records he obtained show great similarity to the drawing made by Marsigli. According to Bunardžić, this fact proves that Marsigli was right in claiming that these objects had been fortifications for the defense of Roman territories, whilst the gates had served as checkpoints controlling the movement of the local population.

To the best of our knowledge, the relation between Romans and these earthworks seems assured; however, all the other issues are still very much debated. At the same time, these earthworks stand as unique features. As such, they present a vital source for interpreting the frontier zones of the Roman Empire. Thus, they have outstanding value for the archeological heritage of Serbia and the whole region.

Chapter II. Legal Framework and Protection

Introduction

The notion of how the environment and natural settings are essential for cultural heritage protection can be seen through a series of international documents such as conventions, recommendations, and guidelines. From the starting point of international concern for heritage monuments, the concept of protection treated the surrounding areas equally.²⁵ By indicating the importance of preservation in the original or suitable natural environment, the early conventions highlighted a holistic attitude in the field of cultural heritage. This idea was especially stated in the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by UNESCO in 1972.²⁶ Here, the intention was to encompass the values of both cultural and natural heritage under one patronage. However, the existing lists of world heritage sites included the properties according to their type: cultural, natural or mixed. Regardless of the large number of properties which currently enjoy the status of World Heritage Site, mixed properties are still under-represented compared to others. The attempt to merge these two entities/categories of heritage appears to be more complex than single properties alone. In order to overcome this problem, heritage experts and professionals in the field developed different strategies. One of the attempts aiming to solve this problem was the implementation of new categories, such as cultural

²⁵ The Athens Charter for the Restoration of Historical Monuments, adopted in 1931, defined the basic principles of monument conservation. Among other things, it pointed out the relevance of the areas where monuments are physically sited. This concept later developed into what are now called buffer zones. http://www.icomos.org/en/charters-and-texts/179-articles-en-francais/ressources/charters-and-standards/167-

the-athens-charter-for-the-restoration-of-historic-monuments. On the historical development of buffer zone see Anne Mie Draye, "Legal Protection of Monuments in their Settings: A Means of Maintaining the Spirit of the Place," *16th ICOMOS General Assembly and International Symposium: "Finding the Spirit of Place – between the Tangible and the Intangible*," 29 sept – 4 oct 2008, Quebec, Canada. [Conference or Workshop Item] or www.icomos.org/quebec2008/cd/toindex/77_pdf/77-hDER-23.pdf.

²⁶ Adopted at the General Conference in the seventeenth session, Paris, 16 November 1972 whc.**unesco**.org/document/101839:

landscapes. Cultural landscapes are defined as properties which represent the "combined works of nature and of man", as it is designated in Article 1 of the World Heritage Convention. They demonstrate the evolution of humans and their settlements over time and under the influence or by opportunities and restrains of given natural environment.²⁷ The notion of cultural landscape and its features will be elaborate in detail later on.

Setting aside international conventions, the actual protection lies within the legal framework provided by the state parties.

Properties placed on the World Heritage List have a curious feature; according to the criteria they have to fulfill in order to be nominated, they already hold a certain, usually the highest, level of protection in their own countries. Even though the World Heritage List offers global visibility for the site and attracts investment and visitors, it does not deal directly with the protection and preservation issues, which is the responsibility of the country where they are located. This situation reveals the paradox that particular categories of heritage are promoted on an international stage, yet the state (national) legal systems do not recognize them.

The reasons behind the incongruity between international and national frameworks are various. In developing countries this is one effect of the political situation, short-term governments, slow administration, etc. Most importantly, it is related to a lack of long-term strategies. Apart from the state mechanisms, the scholars and professionals in the region usually recognize the need to align their work with the current tendencies on the international scene. ²⁸ International conventions, treaties and regulations can offer general framework and concepts for protection but the national legislation and actual practice may offer different structures for protection or management of such sites or landscapes.

²⁷ The new category was acknowledged during the 16th session of World Heritage Committee in Santa Fe, United States of America, 7-14 December 1992. <u>http://whc.unesco.org/en/culturallandscape/</u>

²⁸ See Anika Skovran and Nataša Ostojic-Ilic, ed. *Cultural Landscape--A Modern Approach towards the Protection of Cultural and Natural Heritage on Balkans* (Belgrade: European Center for Peace and Development, 2008).

II.1 The national level

All actions in the field of cultural heritage in Serbia (in terms of the definition, protection system, conditions of usage, and institutions in charge) are regulated through the national Law on Cultural Goods. This law was adopted in 1994 and has its roots in older forms of similar acts and international regulations.²⁹ This act defines the three main value categories, each of them carrying a different degree of state protection. This classification identifies cultural goods, cultural goods of great importance, and goods of highest importance to the state. The same law defines the types of moveable and unmovable goods. The unmovable goods are monuments, archeological sites, historical places, and cultural/historical complexes. In order for something to be declared as a cultural good, it is necessary that the institutions in charge conduct detailed research and determine the values of the particular property. The carriers of the protection process are public institutions of heritage, museums, and institutes for protection. They can be founded on a national, regional and local level. For each type of good, different central institution is responsible. After the research is done, the institution submits its proposal to the highest national bodies. In the case of Serbia, the final verdict on a proclamation of cultural good has to be officially announced by the Parliament. Only after the Act of Proclamation has been published in the Official Gazette, the decision is considered to be valid.

The protocol for declaring an (immovable) cultural good contains the detailed description of a particular good with its historical, academic, and educational values, its locations, size, and ownership, buffer zones, and, most importantly, conditions of usage and protection measures.³⁰ This document is followed by detailed documentation, drawings, and

²⁹ The definition of cultural properties (types of goods) is based on the Convention for the Protection of Cultural Property in the event of Armed Conflict, adopted in Hague, 1954, Law on Cultural Goods, Official Gazette of Republic of Serbia, No. 71/94. <u>http://www.paragraf.rs/propisi/zakon_okulturnim_dobrima.html</u>.

³⁰ Article 47 of the Law on Cultural Goods, Official Gazette of Republic of Serbia, No. 71/94

photographs. It can also contain a register of the movable objects included, which by default are considered to be valuable as well.

The Law on Cultural Goods recognizes another category of listed properties, which de facto enjoys protection under the law even though they do not hold official status of protected good. In practice, the listed properties are far more numerous than the other ones because determining the buffer zones is extremely difficult, especially when it comes to archaeological sites. In this case, the boundaries of a site could only be drawn if excavation is conducted. Even then, there is a high probability that these are not final and definite limits. That is why special attention is devoted to buffer zones and conditions of usage. However, recommendations and measures of protection in buffer zones are conditioned by the development plans for an area. The threats to retaining an adequate level of protection rest in juxtaposition with the laws on planning and construction.

However, this is not the single and only framework where protection can be obtained. Ratified conventions and other international agreements expand the possibilities for protection under various categories and according to less rigid standards.

II.2 International level

Serbia, as a legal successor of former Yugoslavia, has a long tradition of joining international conventions and bilateral agreements, particularly in the field of cultural cooperation. In line with that, most of the European and UNESCO's conventions related to the protection of cultural heritage are signed. ³¹ For the purpose of this research, the key documents are the revised Convention on the Protection of Archaeological Heritage and the European Landscape Convention. Both of these current treaties, which Serbia adopted and ratified, were brought by European Council.

³¹ For a detailed list of signed documents, conventions, and state-to-state agreements see <u>http://www.kultura.gov.rs/lat/medjunarodna-saradnja/medjunarodna-dokumenta</u> (accessed April, 2016).

The revised Convention on the Protection of Archaeological Heritage was proclaimed in 1992 in Valletta, Malta.³² Serbia signed this document in 2007, ratified in 2009, and it came into force in 2010. The convention marked a turning point in the protection process for several reasons, but mainly because it recognized the necessity of integral protection. Hence, it contributed to the emancipation of archeologists and their active engagement in the planning process from the regional to the local level. From that time onwards, archeological practice was actively involved in the process of designing new spatial plans. Moreover, the implementation of protection measures into development policies, which guaranteed the inviolability and enhanced the archeological heritage, acquired a legal context. The basic text of the Convention, especially the few introductory notes, emphasize a holistic approach, where archaeological heritage must not be detached from its environment. Thus, Article 1 of the Convention defines the archeological heritage and fosters preservation and study in order to "retrace the history of mankind and its relation with the natural environment". Article 2 deals with the identification of heritage and the measures for its protection. According to this, each state party should be responsible and form an appropriate, and as it finds suitable, legal system enabling the designation of archaeological heritage. In Paragraph 1 of the same article, besides the archaeological sites, the Convention introduces the term "archaeological areas". Nevertheless, it is left to the state parties to interpret this phrase. In addition to the new terminology, the Convention also reflects the issue of public awareness, especially in Article 9. Here, the state parties are obliged to undertake actions what would emphasize the archaeological heritage and its values among the wider population (through educational programs) and, more importantly, draw attention to the possible threats to this heritage.

³² http://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/143

The second important treaty signed by Serbia is the European Landscape Convention from 2000.³³ It was signed by Serbia in 2007, and in 2011 it was officially ratified and in the same year it came into force. The document was adopted in Florence by the Council of Europe. The purpose of this convention is to address the issues of preservation and answers to new challenges across Europe. The fact that our surroundings are changing rapidly due to intensive agriculture and land use, development, and exploitation of resources had been acknowledged even before, but the scope of this convention included issues of management and planning as well. The convention gives a very broad definition of landscape as an area that is a product of natural and/or human interaction. As a legal tool, the convention aimed for conservation and maintenance of existing features in the landscape and (re)creation of new ones. Moreover, it focused on managing landscapes, by balancing changes caused by different social, environmental, and economic processes. Each signatory state took over the responsibility to work on visibility of landscapes among the public by providing legal instruments, creating policies, and raising awareness through educational programs. The convention fostered the identification and assessment of landscapes within the territories of each state party as well as transnational or trans- border cooperation.

The implementation of this Convention in Serbia is organized through a committee appointed by the Ministry of Agriculture and Environment. This working group closely cooperate with the representatives of Ministry of Culture and regional development agencies. In 2014, the Committee drafted the Action Plan for the implementation of the ELC and regulation on categorization of landscapes. The draft of the Action Plan formulated goals and initial actions for the implementation of the Convention for the period 2015-2020. Following thematic areas were included: recognition of the landscape in the legal framework, identification and assessment of landscape character in the territory of Serbia, comprehensive

³³ http://www.coe.int/en/web/landscape/the-european-landscape-convention (accessed May, 2016)

policy areas and integration in planning basics, management measures (control) policy landscape, participation and awareness-raising, education and research and international cooperation.

Keeping in mind that landscapes provide a physical setting for humans but at the same time contain natural features, the following lines briefly discuss the nature protection norms and practice. The intention is to reflect on the protection of specific natural features, landmarks in particular, which are a product of human activities in the past.

II.3 Natural protected areas

According to the standards of the International Union for the Conservation of Nature (IUCN), cultural values can be embedded, and consequently kept, through categories III, V and VI.³⁴ Category III refers to the protection of natural monuments or features which may be artificial in origin. The next category deals with the protection of landscapes where "the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value". Finally, category VI deals with protected areas that "conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems".

Along this lines, there is a wide- spread practice of protecting manmade features such as prehistoric mounds and earthworks under the laws regulating nature protection. In Hungary alone there more than 1900 mounds, protected as natural areas.³⁵ Likewise, in Serbia, especially in the northern part, there are examples where mounds and relics of earthen fortifications are protected as international protected areas (IPA) or as natural monuments.³⁶

³⁴ http://www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_pacategories/

³⁵According to the Hungarian Law on Nature Protection (adopted in 1996), all mounds are protected *ex lege*.See Csaba Tóth, Katalin Joó and Attila Barczi, "Lyukas Mound: One of the Many Prehistoric Tumuli in the Great Plain," *Landscapes and Landforms of Hungary*, ed. D Loczy, World Geomorpological Landscapes, (Cham: Springer International Publishing, 2015), 255. doi10.1007/978-3-319-08997-3

³⁶ Currently these cases are being revised according to the new Law on Nature Protection. For a detailed description see <u>http://www.pzzp.rs/sr/zastita-prirode/studije-zastite/podrucja-u-postupku-zastite</u>

Another widespread solution for combining natural and cultural heritage is achieved within larger areas that are protected based on natural merits. Here, the cultural heritage is kept and managed within the premises of the nature-protected area.³⁷

II.4 Cultural landscapes

The adoption of cultural landscapes as the new category was a result of a long discussion among experts from different state parties and UNESCO's advisory bodies: ICOMOS and IUNC. In this sense, a cultural landscape is defined as "combined works of nature and of man." ³⁸ According to the operational guidelines from 2008, there are three main categories of cultural landscapes. ³⁹ The first category is described as manmade landscapes whose creation was intentional. The second category refers to organically evolved landscapes, which may present a relict or still exist and serve the needs of contemporary society. The third and final category includes associative cultural landscapes and deals with landscapes that carry notions of religion, art or culture which are more emphasized than their physical expression.

³⁷ The most common examples are national parks, where cultural heritage (usually monastery complexes) are supervised by nature conservation authorities or in cooperation with other cultural heritage institutions of the region (museums, institutes for protection, etc.-- depending on the rank that cultural heritage holds). Under this condition, protection measures include specific treatment of arable land, controlled animal husbandry, traditional building techniques, etc. These are usually large areas, such as national parks or landscapes containing several different zones of action and accordingly levels of protection.

³⁸ The designation of cultural landscape fits generally with Article 1 of the Convention on World Heritage, where cultural heritage is considered, among the rest, to be: "sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view." For the original report on this session see http://whc.unesco.org/archive/1992/whc-92-conf002-10adde.pdf

³⁹ Operational guidelines for the implementation of the World Heritage Convention, WHC, 08/01, January 2008. Section 6 gives a detailed definition of cultural landscape and its subcategories. See http://whc.unesco.org/archive/opguide08-en.pdf#annex3
II.5 The Roman trenches in the concepts of heritage protection and nature preservation

The Roman trenches, according to this division, fall into the second category of evolved landscapes, partially the one dealing with relict landscapes.⁴⁰ These earthworks, even though they are not performing their original function, still present a distinguishing feature of the countryside. Furthermore, they show certain adjustments, since their original form remained but the purpose was altered. Lastly, the earthworks display another peculiarity as artificially created structures which developed into a specific natural habitat through time.

Even though cultural landscapes present a novelty in the field of cultural heritage, experts and scholars in Serbia recently initiated the process of implementing the new category.⁴¹ However, historical landscapes assessment is not yet regulated in this region. Some European countries began to work on this issue decades ago and have developed strategies and policies which refer to the identification and protection of landscapes. Regardless of how differently the concept of historical landscape was utilized in European countries, the characterization primarily serves as a tool for reaching out to the actors in the planning process and environmentalists. The contribution of archeology in this research is seen through establishing the time- depth dimension on one side and pointing out the varieties of present-day landscapes.⁴² The application of these characteristics is multiple and can vary

⁴⁰ See Nora Mitchell and Susan Buggey, "Protected Landscapes and Cultural Landscapes: Taking Advantage of Diverse Approaches", *The George Wright Society* (2000): 38 or <u>www.georgewright.org/171mitchell.pdf</u>. Based on this interpretation, continued use and management makes all landscapes evolve. Their value lies in the material evidence of their evolution in the context of the environment.

⁴¹ One of the most prominent examples presents the study on the medieval Fortress of Bač and it natural surroundings, which was put on UNESCO's tentative list in 2010 as a mixed property. In this case, the property prior to the inscription already held the status of both cultural and natural heritage. Hence, the integrative protection came on a higher, international level. See <u>http://whc.unesco.org//tentativelists/5540/</u> ⁴² Graham Fairclough and Stephan Rippon, "Conclusion: Archaeological management if Europe's cultural

⁴² Graham Fairclough and Stephan Rippon, "Conclusion: Archaeological management if Europe's cultural landscape", *Europe's Cultural Landscape: Archaeologists and the Management of Change*, ed. Graham Fairclough and Stephan Rippon, EAC Occasional Paper 2, (2002): 201. This edition is a result of a symposium on the topic of cultural landscapes and sustainable development and presents comprehensive work by experts mainly from the Western and Northern Europe. The publication contains a number of articles describing the peculiarities of the landscape approach in the archaeology in each county. Depending on the social and historical background and the establishment of archeology through state-driven and organized practice of management in

from implementing strategic and agricultural plans up to environmental management schemes. Nevertheless, the ultimate goal is to present these landscapes and enhance their "liveliness" by allowing certain changes on one hand and, on the other, conserving the past only if it serves current and future generations.

Another aspect of landscape protection, especially in the European working framework, depends on agricultural politics. Recently, the EU developed a strategy where small-scale production and traditional farming is to be supported, simultaneously preserving endangered landscapes. ⁴³ Therefore, a local community, living in a certain landscape is the caretaker and its participation in the process of conservation of nature and culture is considered to be vital. The advantage of a protected landscape approach is that it recognizes that the culture and nature of landscapes are inseparably connected, and that the communities living in the landscape or nearby are a key factor in their sustainability. Keeping in mind that landscape can be owned or managed by the public, private or communal sector, it is of great importance to include all of them in the process of protection and planning. The application of this methodology in various part of the world has contributed to a better understanding that to protect nature, the existing cultural diversity must be respected and taken into account.⁴⁴

Viable protection in the case of Roman trenches can be achieved through other contexts as well. Since they are, at least according to the majority of scholars, interpreted and labelled as Roman heritage, the possibility of joint presentation exists on an international level through an already established concept. Namely, the WHS- Frontiers of the Roman Empire presents a transnational site dedicated to preservation and protection of sites and features the origins of which are related to the construction of a former Roman defense line,

archaeology, it gives interesting insights into how the European Landscape Convention has been implemented across Europe.

⁴³ See the EU common agricultural policy, <u>http://ec.europa.eu/agriculture/envir/landscape/index_en.htm</u>

⁴⁴ Jessica Brown, Nora Mitchell, and Michael Beresford, "Protected Landscapes: A Conservation Approach that Links Nature, Culture and Community", *The Protected Landscape Approach: Linking Nature, Culture and Community*, ed. Jessica Brown, Nora Mitchell, and Michael Beresford (Gland: IUCN, 2005):4-5.

from first to the fourth century AD.⁴⁵ This framework, where additional sites can be added to existing ones on the UNESCO's list, can contribute to raising the awareness of these earthworks, especially given that they represent distinguishing features of the region. In that line, in April 2015, Serbian heritage authorities placed their sequence of WHS (under the "Danube Limes in Serbia") on the tentative UNESCO list.⁴⁶ This section of *limes* in Serbia is approximately 450 km long and contains 60 archaeological sites along the Danube River. The preparation of detailed documentation and management plans are to come in near future.

From the description above, it is evident that the landscape or area protection exists in domains of culture and nature alike. Among variety of working frameworks, it appears that landscape (in terms of ELC) is the most suitable for protection of 'major' Roman trench. The definition and categorization of landscapes, as well as the emphasized role of stakeholders/caretakers reflects a holistic approach. However, the 'major' Roman trench, because it historical context and relation to other earthworks, could easily fit the concept of Danube Limes Project.

⁴⁵ http://whc.unesco.org/en/list/430

⁴⁶ <u>http://www.heritage.gov.rs/latinica/radovi i aktivnosti rimski limes u srbiji na preliminarnoj listi svetske</u> _bastine.php and http://whc.unesco.org/en/tentativelists/6060/

Chapter III. The Results of the Fieldwork Project

In this chapter, I will demonstrate the reasons for selecting a particular part of the major Roman trench and the type of field research that was conducted in the predefined (sample) area. The aim of the field research was to evaluate the state of the structure using sampling methodology. Based on the selected sections the structure's main physical features were defined, along with its state of preservation. The proposed area has been examined in detail from an archeological perspective through the application of different scientific methods, first and foremost fieldwork.

These included:

- Surveying and data collecting (taking measurements and making observations, one of the key techniques used in archeology to determine the current state of a topographic feature, structure, and/or site). This process includes mapping finds, ground photographs, sketches, descriptive notes, and remarks by the field researcher.
- 2. Recording/ documenting (detailed examination of the structure with help of an total station theodolite), and
- 3. Establishment of a unique database for the inspected sample area.

III.1 Sampled area and field research

In order to conduct fieldwork, it was necessary to organize a team and allocate necessary material resources. Since the project was initiated by the Institute for the Protection of Cultural Monuments in Novi Sad, the sample area selected is located on the territory of this institution (Fig.9).⁴⁷ Besides their permission and financial support, this area was easily accessible.⁴⁸ The part of major Roman trench situated in the municipal area of Novi Sad extends about 7.4 km, less than one-third of the overall length of the whole structure. The research was carried out in April and December 2015 and April 2016. Approximately fifteen days of fieldwork were sufficient to collect the necessary data. The crew included one archeologist, two technicians and other experts in related fields as required, professionals such as geometers, engineers, and photographers.

The length of the sequence examined is 7.4 km. The starting point was identified on the old high bank of the Danube near the present-day settlement Nemanovci (Fig.10), while the endpoint is located where the municipalities of Novi Sad, Zabalj, and Temerin intersect (Fig.11). The structure extends straight, going from southeast to the northeast. Along its trajectory, it turns twice at obtuse angles. The width of the structure, according to cadastral maps, measures approximately 24 m (Fig.12). The width of the rampart's base is 15 m and the maximum width of the ditch is 9 m. The state of earthwork's preservation varies depending on a number of causes, to be discussed below.

There were two stages in the initial research phase, desk research and the actual fieldwork. The (background) desk research was focused on gathering information from cadastral, topographical, and archival maps. All the methods used were nondestructive. This particular approach was chosen for its utility, cost efficiency, and accessibility.

With the purpose of collecting information on the field, team members and external collaborators used technology that has only been applied recently in archeology. For gathering data on the physical characteristics, we used a TST- total station theodolite (Fig.13).

CEU eTD Collection

⁴⁷ The supervision over the 'major' Roman trench is based on county and municipal boundaries, so the remaining part of this structure, according to this division, lies in the area for which Provincial Institute for Protection of Cultural Monuments is responsible of.

⁴⁸ This part of trench is sited close to the local roads and a number of field paths.

This is an optical instrument usually handled by construction engineers and land surveyors. Its main purpose is to measure large areas, buildings, terrain elevations, etc. For the last decade, this and similar instruments have commonly been used by archeologists as well.⁴⁹ The survey covered an area approximately 200 m wide close to the trench. This reconnaissance aimed at identifying archeological sites in the surrounding area, their chronological span, spatial limits, and possible association with the trench. Besides the topographic and cadastral maps, GPS (Global Positioning System) devices were used to create preliminary spatial records. GPS devices have been accepted in archeology for decades now. They simplify the procedure of mapping information and enable the precise transfer of data to ground plans or official maps. As a final step, we used a drone for recording the feature from the air (Fig. 14).⁵⁰ Over 300 photographs were taken from the ground, in addition to 100 hundred photos shot by drone from a height of 90 m. Later, these data were compared to existing historical images. By comparing these two data sets, it was relatively easy to determine the degree and progress of destruction as well as to observe features visible on the images but not recognizable on the ground. The historical imagery is used as a constant basis for comparison as well as a source.

The first step in the research included preliminary surveying and establishing the positions where more detailed investigation took place. In this process, the sampled part of the major Roman trench was divided into several different zones approximately 1 km in length. At these locations detailed records of remains were made and/or the state of the structure was photographed and recorded by TST. Overall, 12 sections were recorded that displayed the most typical features and different degrees of destruction or preservation. The

⁴⁹ Andrea Biasion, Alberto Cina, Manuele Pesenti, Fulvio Rinaudo, "An integrated GPS and Total Station Instrument for Cultural Heritage Surveying: The Leica Smart station Example", *CIPA 2005 XX International Symposium* (2005)

⁵⁰ Kenneth Brophy and David Cowley, eds. *From the Air: Understanding Aerial Photography* (London: The History Press, 2005).

process of recording was sometimes difficult because the survey took place in the spring when the area was covered by high dense vegetation. In the next phase, a survey of the nearby area was conducted on foot. The goal of this field walking was to delimit areas as potential archeological sites by recording archeological materials on the surface. The results of the foot survey were imported into several different types of computer software. Depending on the type of data, results were documented and analyzed in Photoshop, AutoCad, GooglePro and/or QGIS.⁵¹

III.2 Results of the topographical survey

As has been said above, the whole length of the trench in the sample was divided into several different zones.

Zone 1- The first one starts in the south part of the structure. The exact beginning spot and the length of the structure are hard to define since the bank has long been used as a borrow site (Fig.15). Due to constant destruction and based on the visible profiles of the trench, to what extent the height of a bank is natural in its origin can be seen, as can where the soil was piled as a consequence of creating the rampart. The transverse section of the starting point displays a maximum height of 81.81 meters above sea level (asl). By comparing this with the original level of the old Danube bank, it can be concluded that the bank was elevated approximately 3.3 m. above the ground surface. From this point, the rampart is barely visible from the ground. The structure itself is almost unrecognizable for the next 1.7 km. This particular segment of the trench was used as a local road connecting the settlements of Nemanovci and Pejićevi Salaši. An asphalt road was built on the top of the bank as it was the most elevated ground (Fig.16). The shallow ditch, located on the western side of the rampart, is also less visible at this point. The cross section of the rampart shows a

⁵¹ James Conolly and Mark Lake, *Geographical Information Systems in Archaeology* (Cambridge: University Press, 2006)

maximum height of 83.92 m asl, while the ditch is same elevation as the surface. In the same area, the ditch and the rampart have both been damaged by construction of an industrial railroad that cuts the structure in an east-west direction. It is important to mention that this area is integrated into present day settlements and, therefore, it is heavily damaged by modern infrastructure. Besides the roads and railroads, in recent years, the trench was cut through by an oil pipeline and the water supply system. The survey results in the surrounding area revealed the remains of a settlement from the Late Middle Ages. Part of this site was recorded and examined in 2012 during the salvage excavation prior to installation of the oil pipeline.⁵² Even though the site was known before, the detailed survey showed that its perimeters are much wider then it was originally assumed. Potsherds were found on both sides of the trench on a substantially larger surface compared to the results of previous surveys.

Zone 2- The second zone is marked by the very end of the populated area of the settlement of Pejićevi Salaši. From here, it becomes easier to track the ditch, although the rampart is still heavily damaged. On the western side of the ditch there is a row of summerhouses stretching along and aligned with the trench direction. Most of these dwellings are illegally erected. With the last house, the rampart again becomes visible. This zone is characterized by a number of breaches in the rampart. In this sequence, which is 1.3 km long, there are 12 breaches overall. Most of them are only several meters wide. These breakthroughs were probably made by local people and now they serve as communication shortcuts (Fig.17). Here, in certain parts, and related to accessibility to the summerhouses, the ditch has been filled with soil (Fig.18). The maximum depth of the ditch is 80.70 m asl while the top of the rampart is recorded at 83.72 m asl. The survey of the surrounding area showed a high density of movable objects on the surface, mainly pottery and animal bones. At this

⁵² The report of Institute for Protection of Cultural Monuments of the city Novi Sad. Unpublished.

stage of research, it can be concluded only that this site was inhabited at two different periods. On the west side of the trench, on a relatively small area, the pottery collected has attributes typical for the late Roman period. In the same area, but on both sides of the trench, a much larger site was detected with prehistoric pottery finds. It seems that this settlement predated the construction of the trench, since the pottery found on both sides of trench had the same characteristics.

Zone 3- Gradually, the rampart and the ditch become more visible, especially in the area where, according to archival aerial images, 'gates' are situated. From this point onward, the feature is clearly visible striking out on the horizon, especially due to the dense vegetation of grass and saplings which cover the rampart (Fig.19). The number of breaches decreases when heading to the northeast. The maximum height of the trench here is 83.61 m asl, the depth of the ditch is 80.84 m asl. One of the features noted here is a number of small-scale landfills, used for depositing bulky waste and construction materials. All of them are located next to the eastern edge of the rampart (Fig.20). There are two 'gates' located in the scope of research area.⁵³ Both gates share common features. They are located on eastern side of the rampart and have a rectangular and elongated shape. Furthermore, they are sited less than 90 degrees opposite the main direction of the trench. The only difference between them is how they are described/ called in the archival documents. The southern one is called minor while the other one, located 2.7 km north of it, is referred as major (Fig. 5). The traces of these features are not recognizable in the landscape. Using old maps⁵⁴ and old historical imagery photos⁵⁵ the traces and shapes of these parts of the trench are seen as crop marks (Fig. 21).

⁵³ Overall, four gates were recorded in the major Roman trench.

⁵⁴ The First Military Survey (1763- 1787), The Kingdom of Hungary, DVD, Budapest, 2004; also available online <u>http://mapire.eu/en/maps/</u>

⁵⁵ Google Earth.

An interesting observation refers to their geometrical form, alignment, and position.⁵⁶ The areas marked as gates on old maps are approximately the same dimensions (1000 m²-1500 m²). The area between these two gates is very well preserved with only three breaches, of which one is substantially larger and serves as a field road. The existing records on archeological sites in this territory⁵⁷ mention the existence of a large settlement from the late Roman period located in front of the ditch and opposite the minor 'gate'.⁵⁸ On the eastern side of the rampart, three sites were discovered between two 'gates'. Based on the preliminary analysis of the collected items, all three could be dated to the prehistoric period.

Zone 4- The final section is the best preserved (Fig. 22). It can be traced from the major 'gate' to the end of the predefined area (the intersection point of two municipalities). Here, there is only one minor breach. The highest point of the rampart was measured here at 85.71m asl, while the ditch's depth is 79. 11 m (Fig. 23).

Based on observation and collected information, it is possible to draw several conclusions. The trench was constructed in the plain area, with no other specific features visible in the landscape. Today, on the both sides of the trench, there is flat arable land. According to its size and the efforts used in its construction, it is reasonable to state that this was a carefully planned enterprise. However, the damage created over the centuries has distorted the original attributes of the structure. For this reason, samples of the cross section in the best-preserved zones are the only reliable record and can be used as a real image of this landmark. Although the terrain looks differently today than in the time when the trench was built, it is still possible to discuss its original shape and size. For example, if the maximum

⁵⁶ Namely, based on the preliminary calculation, there is a pattern here; each gate, heading from southwest to the northeast, is located a double length from the previous one (first one is located 2.54 km from the starting point, second 5.37 from the same point, the third one is located at 10.34 km and last one at 22.09 km).

⁵⁷ List of archeological sites. Institute for Protection of Cultural Monuments of Novi Sad, Document for internal use. Unpublished. This particular area was surveyed in late 1980's.

⁵⁸ This area was surveyed in April 2016 and, o contrary to what was expected, there were no finds on the surface. It might happened that original information referred to other area, since in the meantime there has been changes in cadastral maps.

height and minimum depth are compared, the difference is a little bit over 6 meters. It is clear that this was carefully conducted work, which required tremendous skills and knowledge of applied mathematics.

It was mentioned above that the ditch has a "U" shape (Fig. 24). What is also interesting is that the slope on the western side of the rampart is steeper than on the eastern side. The exact angle of the slope on the western side in best preserved parts is approximately 42 degrees.

III.3 Memory and value aspects

Although earthworks exist in a physical form and within the landscape, they also contain another dimension -- the aspect of memory. In the course of this research, attention was paid to this particular issue and a survey about the memory of this structure was conducted among the local people. Its assumed long-term existence has left a mark in people's minds; earthworks present a fixed point in time and space where humans situated themselves. The memory factor, existing or invented, is of great importance for creating a narrative that links the past and the present. Likewise, memories are not only shared collectively they are also created or constructed through it.⁵⁹ Continuation and preservation of memory is rooted in the continuity of social life, since these memories are connected to the external world. The memory research was also conducted, because from the point of view of risks and protection it is crucial to have a picture about the perception of these monuments by the local people.

In April 2016, archeologists from the Institute for the Protection of Cultural Monuments in Novi Sad conducted a survey among the local communities in the area close to

⁵⁹ Andrew Jones, *Memory and Material Culture, Topics in Contemporary Archaeology*, ed. Richard Bradley (Cambridge: University Press, 2007), 41.

the trenches. The purpose was to investigate how the trenches are perceived and interpreted today. The team members interviewed the representatives of local communities and some old residents.

The survey was conducted among the residents of villages Pejićevi Salaši and Čenej. The main street in the village of Čenej lies on the top of the minor Roman trench. The village of Pejićevi Salaši is located next to the southern end of the major Roman trench. The survey was conducted among the representatives of these communities, who then directed us to other people. There was no questionnaire, because the intention was only to collect stories about the trench, if there were any. During the survey, we spoke to four people and only one knew the stories or had an explanation for the trenches; the rest of them did not even know that this structure has historical values. In the interviews, we also found out that the expression "Roman trenches" actually refers to the wider area, east from the trench and not to the structure itself. Another peculiarity is that local people use the term dyke for the major Roman trench.

According to oral tradition, people of this area retell stories about how the major Roman trench was constructed during the rule of the Austro-Hungarian Empress Maria Theresa (1717- 1780). The need for constructing such a large object was justified by concern about and fear of the Ottoman Turks. The association to Maria Theresa's reign in not surprising, as she was the initiator of numerous public works in this region and is still remembered as a great ruler. In the eighteenth century the landscape of the Vojvodina was significantly changed due to the construction of irrigation and drainage systems. The natural environment was altered and marshy areas became arable land. The existing streams and river flows were regulated and utilized in a great system of canals. The fact that the tale mentions the Ottomans is equally interesting and probably has its roots in real historical events, marking the last great invaders. At the same time, it is also interesting that no major Ottoman invasion is documented in this period. The Maria Theresa period was more a peaceful period from the point of view in this area. Thus, the Ottoman danger and some measures against it were combined with the building activity (colonization and modernization) of the queen. In the same stories, there are elements related to the Pannonian sea and threat of floods. Even though this memory is constructed (and clearly false), the notion of floods is interesting. Again, it is related to the environment. It remains unclear to what extent these stories contain pieces of truth and when they are pure fiction. Nevertheless, a memory exists. It is not widespread for some reason, and only a few people know the stories about the trenches. The collected information displayed here comes from a single account, the testimony of a woman who spent her whole life living just few hundred meters away from the major Roman trench. Interestingly, the people living next to the minor Roman trench are completely unaware of its existence.

III.4 Risk and destruction of the Roman trenches

One of the main goals of the fieldwork was not simply to record the monument but to offer a detailed survey on its present condition in order to develop risk management. It is clear that major damage was done in the parts of the trench that are closely related to human activities and in the zones closer to the inhabited area. The construction of infrastructure had a significant impact on the current state. However, the continuation of illegal construction activities on the site of the major Roman trench should be mitigated. A side effect of these activities is the creation of 'wild' landfills as well as degradation of the rampart by removing a soil from it. The highest risk of destruction is illustrated by first three zones which were examined, but to a different degree. It was noted that as the distance from the inhabited areas increases, the preservation level of the structure is more striking and self-evident. Besides the degradation and deconstruction of the structure (usually by taking the soil), there are also cases of intentional backfilling of the ditch. However, humans are not the only cause of destruction; there are also natural causes. Although it is covered with grass and saplings, the trench, or, at least the upper layer of soil on the rampart, is permanently eroding. Another important aspect of the trench is that this structure, with its natural features, presents a unique ecosystem. Besides plants and vegetation, it is also inhabited by different wild animals. Because of its environment, it stands as a refuge and shelter for animals living in the area.⁶⁰

The results of the fieldwork contributed to better understanding the context of the major Roman trench and can be summarized in following:

- Size and scale of the monument in the sample area
- Condition of the earthwork
- Perception of the trenches by the local people
- Major risks.

All these aspects should be kept in mind when discussing possible protection and preservation. For these reasons, the author's idea is not necessarily to provide a proposal to protect only the cultural monument, but to impose the idea of protecting the whole landscape in a way that could balance between development, leisure, cultural and natural values.

⁶⁰ <u>http://www.pzzp.rs/sr/aktuelnosti/item/124-nastavljena-terenska-botanicka-istrazivanja-velikog-rimskog-sanca.html</u>

Chapter IV. Proposal for Protection

According to Article 47 of Serbia's Law on Cultural Goods, a proposal for protection has to include the name and description of a good, the boundaries and buffer zones (with cadastral maps and a list of ownership rights) and measures for protection and safekeeping. Due to new streams in the heritage field, practice has shown that the management plan is an equally important part of the listing process. However, in this case, making a management plan for maintaining and presenting heritage may be ineffective due to the number of other actors who should be involved in this process. As has been elaborated, the Roman trenches cover a wide range of heritage values, so in order to preserve or present them in the right manner other interest groups need to state their positions. Only if all of those perceptions of values and measures for protection are blended, and not set against each other, the management plan can be considered as complete.

This proposal refers to part of the major Roman trench located within the municipality of Novi Sad. The length of this part is approximately 7.4 km. The structure consists of a bank and a ditch. In the first two defined zones, (see Chapter III. 4 for details) there has been major destruction of both the rampart and the ditch, mainly caused by human actions. In the first section, in particular, there are no visible clues of this structure on the ground. A large number of breaches in the rampart and the filled ditch mark the second zone and to some extent the third zone. Finally, the last section of the sample area presents the best-preserved part of the earthwork, concerning its structure, presents status and local perception. Therefore, it can fulfil the requirements for protecting it, and with it can be used as a sample for the protection project of the other parts, or similar monuments.

The structure of the major Roman trench is state-owned property, controlled by the Public Water Management Company "Waters of Vojvodina". According to their website, the ditch of the major Roman trench (approximately 10.045 km in length) is categorized as a water canal (under the code J-152-7).⁶¹

Single owners, mainly people from the near villages, own the area surrounding the trench. Next to the eastern bank of the rampart there is a narrow dirt road used by local farmers.

IV.1 Stakeholders and other parties

A stakeholder is identified as a person or group of people who has the right and capacity to participate in the process of planning and decision-making. Even though all parties can be included in the process, there may be a certain power misbalance among them. This is the situation in developing countries in particular, where there are limits in terms of community involvement. The solution offered here is based on idea that the protection process should be conducted through several stages, where the role of each stakeholder is predefined corresponding to their sphere of action. ⁶²

In the case of the Roman trenches, the responsibility for formulating the protection proposal lays with the regional and local authorities, namely, the Institute for the Protection of Cultural Monuments of the city of Novi Sad, the Provincial Institute for Nature Conservation, the Water Management Company of Vojvodina Province, and the Provincial Secretariat for Urban Planning, Construction and Environmental Protection. Other city authorities should be involved in the process as stakeholders as well, since they make decisions on how the annual financial resources should be utilized. Their support and the engagement are crucial in terms of creating an infrastructure, required facilities and/or the

⁶¹ GIS database at http://gis.vodevojvodine.com/vodeVojvodineEksterna/

⁶² Christina Aas, Adele Ladkin and John Fletcher, "Stakeholder Collaboration and Heritage Management", *Annals of Tourism Research* 32, No. 1 (2005): 31, doi:10.1016/j.annals.2004.04.005.

formation of public services. In particular, this refers to the possibilities for presenting the trenches by posting information plaques, organizing and supporting the creation of paths for hikers and cycling, installing the necessary facilities such as route markers, rest points, benches, trash receptacles, etc. The institutes should contribute by cooperation with the representatives of the local community where their knowledge can be employed in the process of raising awareness among community members. This can be achieved through public meetings, seminars, workshops, etc. Most importantly, the heritage values of the Roman trenches and necessity of protecting them should be disseminated through the educational system, by organizing field trips for schoolchildren, volunteer camps for students, scientific research for professionals, etc.⁶³

The next stage of protection is the maintenance and presentation of the major Roman trench. The main actors in this particular segment of planning should be the local community and the local tourist office. How the meaning and significance of a particular site, at least in the historical context, are socially constructed should be taken into account in the planning process. ⁶⁴

As it has been stated, there are several levels of responsibility, in the protection and planning process, and it can be summarized as:

- The Institutes for Nature Protection and Cultural Heritage should initiate and assemble the proposal accordingly,
- While closely cooperating with city's authorities in charged and securing their support.

⁶³ Similar events have already been organized on a couple of occasions in cooperation with the city authorities by the Institute for Nature Conservation and botanical societies.

⁶⁴ Mark P. Hampton, "Heritage, Local Communities and Economic Development", Annals of Tourism Research 32, no. 3 (2005):738. doi:10.1016/j.annals.2004.10.010

- Experts should also take part in education and awareness raising, by mobilizing local community,
- Which in response should express their capacities and willingness to participate in the protection by maintaining or enhancing the existing values.
- The activities related to presentation and community participation in this manner should be complied in a touristic offer, made by local tourist office.

Tourism

As it has been mentioned, the category of possible tourists, in the case of Roman trenches would be probably visitors coming from the nearby urban areas. These groups of peoples are relevant for protection, and can influence the public image of trenches as monuments. Various programs and projects (educational trails, guided tours, bicycle tours, hiking routes) can contribute to this notion. In addition, visitors can also play an important role in the protection attempts.

Nevertheless, there is a widespread opinion that tourism can present a threat to heritage in terms of degradation. One of the negative effects is deprivation of communities' right to manage heritage. For that reason, a possible benefit from establishing a tourist program should be directed towards community welfare. Through the installation of facilities and services, local people could get the opportunity to participate in the protection and this could consequently provide extra income for themselves. However, in order to be sustainable, the tourist program has to be formulated and implemented in a way that the revenue is utilized for preservation and enhancement of existing heritage values as well.

The content of any tourist offer would have to be appealing to people interested in nature, wildlife, and recreation. However, the flow of visitors should be controlled. The stability of the ecosystem must be maintained and any changes authorized (such as pest control, population control, etc.). As a reference of how important the major Roman trench is from a nature protection view, that it is categorized an internationally important plant area. ⁶⁵

IV.2 Risk assessment

A risk assessment is a statement that points out potential risks which can be harmful and present a threat for the intended project. The character of potential risks can be different and may go from natural catastrophes to human negligence, but also may exist due to social and political settings.

A problem that might occur, especially in developing countries, is that protection and conservation are compared and ultimately undermined in favor of national development plans. The development of cultural tourism, in principle, is desirable; however, in the case where the heritage presents a resource, the objectives of conservation and tourism promotion may perhaps be juxtaposed. ⁶⁶

The rampart of the major Roman trenches currently functions as a refuge for wild animals of the area, while part of the ditch which is filled with water serves as a canal for drainage. The surrounding area is arable land, privately owned, where local residents grow crop plants, mainly wheat, maize, and oilseed rape. In the last fifty years, people have replaced their traditional way of working the land and started to use heavy machinery for ploughing. This trend substantially affected the preservation of soil layers beneath the surface,

⁶⁵ The major Roman trench is classified as IPA (Important Plant Area) according to the Ramsar Convention from 1971. <u>http://www.pzzp.rs/sr/zastita-prirode/ekoloska-mreza.html</u>, <u>http://www.pzzp.rs/sr/zastita-prirode/podrucja-od-medunarodnog-znacaja/podrucja-sa-medunarodnom-zastitom.html</u>. During the research phase, author had the opportunity to correspond with experts from the Institute for the Nature Conservation of Vojvodina Province and was informed that they are also working on a proposal for protection of the major Roman trench as a protected natural area. However, the limits of this area exceed the boundaries of area that was elaborated here. Their research begn in December 2014.

⁶⁶ H. Detlef Kammeier, "Managing Cultural and Natural Heritage Resources: Part 1 – From Concepts to Practice", *City & Time* 4, no. 1 (2008.): 4,5. [online] URL: http://www.ct.ceci-br.org

especially those containing archaeological finds. Even though deep ploughing is not recommended (in one period it was even officially forbidden) this issue should be addressed in the case of protecting the buffer zones.

Based on the results of the investigation conducted on the major Roman trench, a list of major threats has been assembled. However, is not the final or complete list of potential risks, which requires more comprehensive and detailed work. Nevertheless, in the course of the protection process, special attention should be dedicated to taking measures that can prevent the following risks:

- **×** Removing the soil from the rampart,
- ✗ Filling the ditch,
- X Depositing waste, toxic materials, and rubbish (prevention of "wild" landfills),
- X Creation of new breaches in the rampart,
- Construction of permanent facilities/ infrastructure (construction of a road network, establishing industrial areas, etc.)
- X Collection of rare plant species and
- ✗ Planting non-native species (which may disturb the balance of existing ecosystem).

For the buffer zones, threats can be actions such as:

- ✗ Deep ploughing (for disturbing soil stratigraphy, and destruction of archaeological finds beneath the surface),
- X Collection of archeological movable items on the surface,

× Planting the crops with deep and strong roots (such as grapevines),

- **×** Leveling the surface by adding or removing soil layers and
- X Spillage, disposal of waste and hazardous substances.

Some of these actions may be perceived as useful and desirable for one group of stakeholders and risky for others. For example, occasional cleaning of the water canal is a necessity and action is proposed by the Water Management Company. This process is usually done by bulldozers, thus, it might present a threat to the original form of the trench and its structure. Furthermore, the action of cutting down trees and high vegetation for better visibility and for presentation purposes can be harmful for the wild life. In the end, the cooperation among different partners and on different levels is extremely important for protection, preservation and presentation of the major Roman trench.

Conclusion

This paper attempted to apply a landscape approach as a tool in defining the multiple character of large earthworks found in the Pannonian plain. By using methods of archeology, both theoretical and practical fieldwork, it was possible to collect information about the historical context of these earthworks in general and results of one sample in particular. In addition, other facets of earthworks, such as the memory aspect and natural assets were acknowledged and discussed in the line of this research. By combining different concepts, I have encompassed most important characteristics of these earthworks and emphasize the need for their protection. In addition, the assessment of risks highlights the major threats. If considered and applied on a larger scale, such to as development plans, and implemented as in the protection proposal, they can certainly prevent further destruction. The core idea was to examine the opportunities for a comprehensive and inclusive protection solution. For this purpose, attention was given to national and international legal frameworks, emphasizing those that promote a holistic approach in this matter. The results of the general archaeological studies showed that although the exact dating is still debated, Roman trenches in Vojvodina clearly stand as part of a major system in the Pannonian Plain. The actual function and the periodization should be part of further archaeological investigation on local but also regional level, through topographical research in the context of archaeological sites as well as stratigraphic studies in the context of superimposing features.

The case study on the major Roman trench resulted in the recognition of a number of heritage values, and also underlined its present character and function. Today, parts of trench serve as water canals or stand as habitat for protected species. The issue of present utilization turned out to be equally important from the point of identifying the stakeholders. Equally, the involvement of the local community is of great interest in matters of decision making related to protection. In this case, the issue of sustainability would not be problematic, since through mutual understanding communities can establish a relationship with conservation objectives, protective of heritage or ecological equally. Even though in the case of the major Roman trench the memory does not reflect historically accurate facts, it still embedded in the landscape. The communities living in this landscape are entitled to take part in the planning process, since they should be caretakers.⁶⁷ This does not exclude participation of professionals from the field of heritage; their role is to point out on the values and disseminate the knowledge they have accumulated.

Even though the earthworks have been discussed in the regional archeology for almost a century, the intention here was to point out on the existing legal mechanisms which can initiate and foster the protection procedure. However, it would be difficult to accomplish a full range of protection of all earthworks at once. Therefore, the protection proposal elaborated here was concentrated on a single selected section. The model, however, can be

⁶⁷ Nora Mitchell and Susan Buggey, "Protected Landscapes and Cultural Landscapes: Taking Advantage of Diverse Approaches", *The George Wright Forum* 17, no.1 (2000):44.

implemented in other similar cases. Thus, the material collected in this thesis can serve as a basic documentation and initiate protection of this earthwork in a holistic way, by integrating archaeological desktop and fieldwork results, the environmental protection attempts and by developing a stronger consciousness within the local population.

The issue of legal protection is even more urgent in present-day society due to economic growth and the expansion of urban areas. As the risk assessment shows, the major threats in the case of the major Roman trench come from human activities, or better to say, due to their carelessness. The earthworks stood in the landscape for centuries, but for reasons mentioned here they are now in danger. It is the responsibility of scholars and professionals in the field (not just cultural heritage) to point out the relevance of these structures and preserve them for generations to come.

Behind the new legal regulations lies the notion that successful protection can only be achieved if all the interest groups are involved and equally represented in the process. This is difficult, of course, but some examples show that joint efforts can result in a solution suitable for all. The earthworks of the Pannonian Plain have a huge potential that can be utilized not only for academic research, but for other purposes as well. Education and recreation are just some of them. Taking into account the growing popularity of leisure activities related to such sites and landscapes (hikers, bikers, bird-watchers, etc.) it can serve a new form of regional, internal tourism. If well balanced, tourism can reconcile different uses. Lastly, the more people are aware of these structures, the more they will be willing to participate in their preservation, especially if they are managed as a resource that may provide income. The problem of integral protection lies in the division of responsibilities among authorities charged for protection. The practice shows disparity and lack of cooperation among interested stakeholders, as was illustrated through examples of protected natural sites that originated from human endeavor. Studies have shown that there is a dichotomy in the perception of landscape and the relationship of humans and the environment. The perceptions are clearly different, one being bio-centric and other anthropocentric.⁶⁸ The peculiarity of the major Roman trench lies in a past-present dimension. In ancient times, its function was profane, while today, due to a human intervention, the natural habitat has emerged. Thus, even though there are differences in approach to the issues of natural and cultural heritage protection, this particular case study shows that in this case human activity was essential in creating a specific nature environment. In the context of a cultural landscape, even the whole region of Pannonian Plain can be observed as an evolved landscape. Over time and due to human persistence, marshy areas were turn into arable land. This should also be considered in terms of recognizing and evaluating landscapes. The earthworks in this region mark a single segment of this evolutionary process.

In the case of the major Roman trenches and their protection, the best solution lies in cooperation among stakeholders, particularly the institutions for the protection of cultural goods in the region, the Institute for the Nature Conservation of Vojvodina Province, the local authority and local community. Only in this way all of the values can be preserved and managed in such a manner as to prevent further destruction, retain the present state, and finally be self-sustainable and beneficial for the community. The solution is twofold: according to current legal system in Serbia, the Roman trenches can be listed as both cultural and natural areas separately. However, such proposals have to be related and mutually supported. It is an imperative for the stakeholders to take into consideration the effects of one another. By holding the status of heritage in both spheres, the trenches will meet the criteria for cultural landscape. Additionally, the heritage values can be enhanced through the network of Roman *Limes*. Through this context, it would be feasible to extend the limits of the region and make it part of a larger scheme.

⁶⁸ Nora Mitchell, Susan Buggey, Ibidem, 43.

Based on this material a regional co-operation between Serbia, Romania, Hungary and Croatia can be developed for a common policy and protection of these monuments, based on the interdisciplinary research of archaeologists, nature conservation experts and managers of regional tourism. This regional project can later be integrated into the European-wide programs for the preservation, protection and interpretation of Roman frontier monuments and their related landscape.

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