

Former enclosed gardens as a part of greenways in Hungary

Correlation between protected natural areas and slow tourism

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1. Abstract

Enclosed gardens, as a special Hungarian historical-political concept and a unit of area, was created in the early 1960's and was prevalent in two-thirds of Hungary's territory. The term originally signified privately owned plots of land with small orchards, traditionally for vineyards and garden use. Enclosed gardens, as a category of real estate registration and legal unit has now been abolished. Some of the former enclosed garden areas are characterised by dynamic processes of transformation, pointing both towards urbanisation and residential use, and towards the afforestation of abandoned areas as a result of the cessation of a way of living. However, some of the former enclosed garden areas still retain many aspects of conscious human-made landscape-shaping activities, such as the landscape structure, natural and landscape values, and often carry the legacies of historical land use.

Landscape values are also present in the form of natural areas protected by law or conventions in the area of the enclosed gardens. Specially protected areas are also tourist destinations or play a role in the greenway network due to their attractiveness and landscape/natural values. The aim of the analysis is to show the role of enclosed gardens in the system of protected natural areas and the correlation between their protection and the extent of exploration and the density of tourist routes and greenways through the area. Through our investigation, we strive to answer the following corollary questions: What types of greenways (e.g., hiking and cycle trails) are more common in enclosed gardens? In geographical terms, in what areas of the enclosed gardens are protected nature areas, hiking and cycle trails more common? This provides an insight into the role of enclosed gardens in greenway network, which can be linked to the value-preserving character of eco- and rural tourism, such as the economical use of resources or the development of closer cooperation with nature conservation. The present study is part of the research that seeks to understand the causes of land-use change in former enclosed garden areas and to explore the landscape values of former enclosed gardens.

Keywords: Enclosed garden, greenways, slow tourism, nature conservation areas

2. Introduction

The majority of enclosed gardens were developed in the area of historical wine regions, as well as around watercourses and lakes with significant recreational and landscape potential. Due to the natural and architectural value of the enclosed garden areas (e.g. folk architectural heritage of hilly vineyards, press houses, vineyard cellars) and their unique landscape features (e.g. vineyard chapels, statues of St. Orban, St. Donatus, wells, springs, viewpoints, old tree specimens, tree lines, deepened dirt roads etc.), these areas influenced the designation of hiking trails and greenways, and today represent popular destinations for hiking tourism.

Although the enclosed garden does not exist in other countries, the landscape, the natural and cultural or historical values of the wine growing areas and historic wine regions are also popular destinations for slow tourism outside Hungary. Examples include the dense network of cycle and hiking trails along the Danube¹ in Austria covering the picturesque and historic wine region of Wachau or the German Wine Route.²

3. Background and Literature Review

Enclosed gardens, terms

The so-called enclosed garden was introduced as a special legal and territorial concept in Hungary in the 1960s, which was developed in the outer administrative areas of settlements as a result of the agricultural policy and thinking of the then socialist state organisation. Former enclosed gardens are today present as sections of land located in the *special outer administrative areas* of settlements (section 3(4) of Act C of 2021 on Real Estate Registration³).

The territorial extent of enclosed gardens in Hungary is 2007.25 km², which is 2.15 % of the total area of Hungary. Based on the corrected database of 2011, 1954 (pcs) settlements have enclosed garden areas (Molnárné, Vaszócsik 2016)

The largest areas of enclosed gardens can be found in *Borsod-Abaúj-Zemplén* county (291.84 km²), but the extent of enclosed garden areas is also high in *Zala* (272.45 km²), *Somogy* (186.16 km²) and *Pest* county (164.17 km²). *Borsod* has also the highest number of patches (877), followed by *Baranya* (537), *Zala* (508) and *Somogy* (476) with around 500.

In the Hungarian literature, several authors pointed out the tendencies of land use changes in enclosed gardens. *Ónodi* and *Cros-Kárpáti* typified the closed gardens based on their land use forms based on several field surveys. (Ónodi, Cros-Kárpáti 2004.)

¹<https://www.bergfex.at>

²<https://www.deutscheweinstrasse-pfalz.de>

³Act C of 2021 on Real Estate Registration 2021. évi C. törvény az ingatlan-nyilvántartásról - Hatályos Jogszabályok Gyűjteménye (jogtar.hu) (as accessed 03.22.2022)

Laposa analyses the problems of the residential building processes of enclosed gardens on the vineyards of the historical wine region of the Balaton Uplands. At the same time he also emphasizes their landscape-natural, historical and cultural values, the importance of their preservation and protection. (Laposa 1988.)

In my own research, I also analyse the changes in land use in the period since the change of regime, in relation to the accessibility of enclosed gardens and their connection to the settlements.

Terms used in the research:

Enclosed garden blocks/patches: Groups of enclosed garden plots located within the administrative boundaries of settlements (but in their outer administrative area) delimited on the basis of the enclosed garden data of 2011 of the land register generated by the Government Office of the Capital City Budapest, Department of Surveying, Remote Sensing and Land Offices, which appear on the map as a contiguous „patch”.

Natural areas of national significance protected by specific legislation

Protected areas that have been declared protected by decree of the Minister responsible for nature protection. They can be national parks, landscape-protection areas, nature conservation areas, natural monuments.

Type of protection

The categories of protected areas examined in our research cover the major national and some internationally protected natural areas in the area of enclosed gardens, such as *natural areas of national significance protected by specific legislation*, 'ex lege' protected areas with surface area, *National Ecological Network*.

Enclosed garden patches affected by slow tourism

Those enclosed garden patches affected by hiking or cycle tourism where a national or international route passes through the area. The research/analysis includes cycling routes, major domestic tourist routes (Blue, Red) and other hiking / pilgrim routes managed by Magyar Közút (Hungarian Public Roads) and Open Street Map.

Greenways

Greenways were defined as linear, multifunctional landscape architecture elements. The main role of which is to provide spatial connection between territorial open spaces of recreational and/or ecological importance ('Greenspaces') (Fabos, Searns, Zube, Ahern 1995). The multifunctionality of greenways means on the one hand a combination of recreational and ecological roles, and on the other hand the provision of a sufficiently wide range of various recreational uses (walking, cycling, horseriding). (quoted by Bárcziné Kapovits 2014.)

4. Method and Data

The study used *geospatial analysis* to produce tables and maps showing the relationship between greenways and protected areas or natural areas under designated protection (hereinafter protected areas) in the former enclosed garden areas. The study seeks to answer the question as to whether the hypothesis that protected area hotspots are also affected by slow tourism routes can be supported.

In addition to the *state-basic data* used (national boundaries, administrative boundaries of settlements, rivers and expanses of water, patches of former enclosed garden areas), the databases of natural areas of national significance protected by specific legislation, such as National Parks, Landscape-protection Areas, Nature Conservation Areas, Natural Monuments, and *ex lege* protected saline lakes and bogs, as well as the databases of international Natura 2000 protected areas (SPA, SAC, SCI), National Ecological Network areas, and the examination of the impact on nature parks, geoparks, cave protection zones and Ramsar areas in the enclosed garden areas provided the basis for the analyses. For the analysis of greenway trails, we used the geospatial information of the cycle network maintained by Magyar Közút ZRt. (Hungarian Public Road Nonprofit Plc) and the cycle network trails registered by Open Street Map, as well as the hiking trails. Among hiking trails, priority was given to the Blue Trail network.

The analysis consisted of three steps. The first step was to analyse the quantitative data (number of areas and total length (km) of road segments in the affected patches), the territorial extent and the spatial pattern of the enclosed garden areas affected by the greenway network. The second step was to analyse the conservation importance of enclosed gardens by merging the boundaries of protected natural areas and enclosed garden blocks by type of protection. The data on protected enclosed gardens (number of plots, surface area, distribution) were compared with the national data on protected areas. The third step was to look for the correlation between the protection of enclosed garden blocks and the presence of greenway network in them. The results were documented with tables, figures and diagrams. In the maps presenting/summarizing these results, the enclosed garden patches are shown with centroid formation for the sake of clarity

5. Results

5.1. Enclosed gardens affected by greenway routes in Hungary

According to our analyses, the total length of the trails of greenways in enclosed garden patches in Hungary is almost 1000 km. The role and the importance of enclosed gardens in slow tourism is presented below:

The slow tourism routes (blue hiking trails, other hiking trails, and greenway routes formed by cycle trails) affect altogether 1375 blocks of enclosed gardens, i.e. 27 % of all enclosed garden blocks. Their distribution per type and the volume of enclosed blocks affected by each type are shown in Table 1. The spatial mapping/pattern of enclosed garden blocks affected by slow tourism routes is shown in Figure 1. The largest number of enclosed gardens affected by greenway network routes are located in the area of the Zala Hills, Baranya and the Bükk Mountains. Within route types, „other hiking trails” have the highest rate, at 18.3%.

The table contains a separate sets of data for Hungary's 2586 km long, contiguous, emblematic "hiking main trail", the National Blue Circle, which includes three separate hiking trails: the National Blue Trail, the South-Transdanubian Blue Trail and the Great Plain Blue Trail⁴. Only 1,15 % of enclosed gardens are affected by the National Blue Circle.

Table 1: The rate of distribution of enclosed gardens affected by slow tourism routes per route type in Hungary

	Number of enclosed gardens affected (pcs)	Enclosed gardens affected as a proportion of total enclosed gardens (%)	Length of the route section (km) per enclosed gardens
National blue hiking trails*	74	1,15	35,5
Other hiking trails	1175	18,3	370,39
Cycle trails	486	7,56	537
Slow tourism routes in total	1735	27,01	942,89
*The National Blue Circle hiking tour includes the Pál Rockenbauer South Danubian Blue tour, the Great Plain Blue hiking tour routes as well			

5.2. The nature conservation importance of enclosed gardens in Hungary

By analysing the appearance of *protection categories* individually, we found that nature parks (204.36 km², 10.18 %) and Ecological Network buffer areas (174.02 km², 8.67 %) are the most *extensive* in the enclosed gardens. This is followed by geoparks (119.1 km², 5.93 %) and Natura 2000 Special Protection Areas for birds (SPAs), which have similar area values (116.4 km², 5.8 %), that is they have a similar importance in the enclosed gardens as protected natural areas. (Figure 1)

By *summing up* the categories of protected areas, the territorial extent of protected areas for the conservation of other landscape and natural heritage, such as nature parks, geoparks and UNESCO biosphere reserves (410.28 km²), is the most significant. National Ecological Network areas are also significant given their total area (343.22 km²).

When analysing the most enclosed garden patches affected by protection individually, Natura 2000 Special Areas of Conservation (SAC, SCI, pSCI) are the most significant, with nearly one thousand patches (955, 14.9 %). Nature parks (873, 14.9 %) and Natura 2000 Special Protection Areas for birds (SPAs) (697, 10.9 %) are of a similar order of magnitude.

When aggregating enclosed gardens affected by protection per category, the largest number of patches (1 652, 25.7 %) are found in Natura 2000 areas. Patches of a similar number (1609, 25.1 %) are protected as other landscape and natural heritage sites and also in the three groups mentioned above. The total number of National Ecological Network elements (1110, 17.3%) is also significant here.

In order to summarise the foregoing, most of the enclosed gardens affected by nature

⁴<https://www.kektura.hu/>

conservation are protected under the categories of other landscape and natural heritage conservation, Natura 2000 and the National Ecological Network.

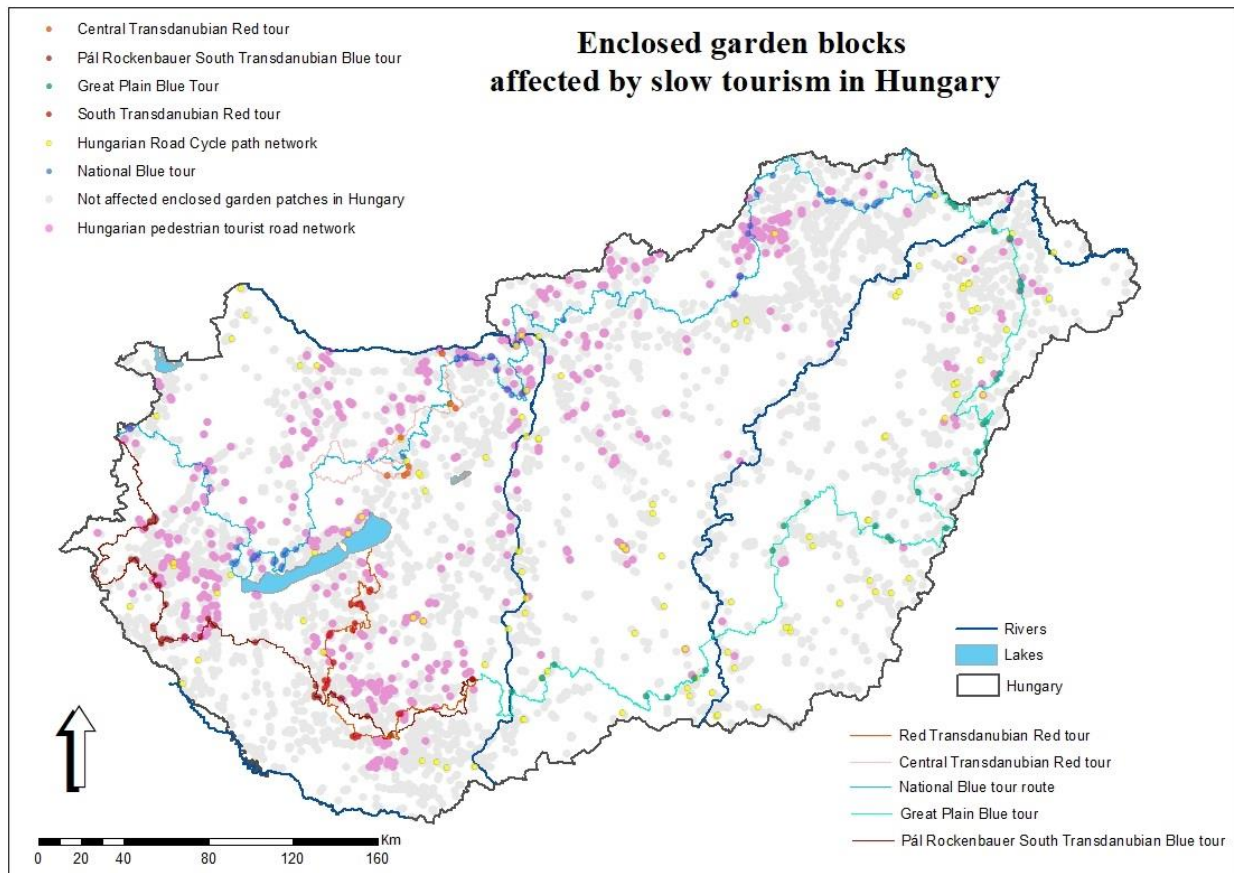


Figure 1. Enclosed garden patches affected by slow tourism in Hungary (Source: edited by the authors, 2022)

The research points out that protected areas are concentrated in the north-eastern part of the country in the Zemplén Landscape Protection Area, in the northern part of the Bükk National Park, and in the south-western part in the Balaton Highlands. Enclosed garden patches affected by protection located in the north of the country along the Danube, in the Danube-Ipoly National Park and in the Gerecse Landscape Protection Area are also significant. (Figure 2)

In the north-eastern part of the country, protection by Natura 2000 and National Ecological Network areas is predominant, while in the Balaton Highlands, natural areas under specific legal protection are present, mainly in the Balaton Highlands National Park. (Figure 2)

The detailed results of the analysis are shown in the table below (Table 2).

Description of protection	Territorial extent of enclosed gardens affected by protection (km ²)	Area of enclosed gardens affected by protection as a proportion of the total area of enclosed gardens (%)	Number of enclosed gardens affected by protection (pcs)	Number of enclosed gardens affected by protection as a proportion of total enclosed gardens (%)	National territorial distribution of protected areas (%)
Natural areas of national significance protected by specific legislation					
NATIONAL PARKS	40.77	2.03	155	2.41	5.26
LANDSCAPE-PROTECTION AREAS	15.14	0.75	202	3.14	3.41
NATURE CONSERVATION AREAS	0.84	0.04	49	0.76	0.33
NATURAL MONUMENTS	0.06	0	6	0.09	
In total:	56.81		412		
<i>Ex lege protected areas with surface area</i>					
EX LEGE BOGS	4.62	0.23	81	1.26	
EX LEGE BOGS OUTSIDE PROTECTED NATURE AREAS (2014)	4.65	0.23	80	1.24	
EX LEGE SALINE LAKES	0.11	0.17	11	0.17	
In total:	9.38		172		
Natura 2000 areas					
SPECIAL PROTECTION AREAS FOR BIRDS (SPAs)	116.4	5.80	697	10.85	14.77
SPECIAL AREAS OF CONSERVATION (SAC, SCI, PSCI)	55.71	2.78	955	14.87	13.89
In total:	172.12		1652		
National Ecological Network					
CORE AREAS	85.75	4.27	284	4.42	19.49
BUFFER ZONES	174.02	8.67	511	7.95	7.7
ECOLOGICAL CORRIDORS	83.45	4.16	315	4.9	9.18
In total:	343.22		1110		
Total protected and specially protected enclosed garden areas	616.6577	30.721			44.71+ ex lege
Total protected area within enclosed garden patches	987.16	49.18			74.1+ ex lege
Other territorial categories for the conservation of landscape and natural heritage					
CAVE PROTECTION ZONES ON THE SURFACE	0.25	0.01	99	1.54	
GEOPARKS	119.10	5.93	348	5.42	
NATURE PARKS	204.36	10.18	873	13.59	
UNESCO BIOSPHERE RESERVES	83.94	4.18	239	3.72	

RAMSAR AREAS	2.63	0.13	50	0.77	
EUROPEAN DIPLOMA HOLDING AREAS	0.0045	0.0	-	0	
In total:	410.28		1609		

Table 2. Distribution of the number and extent of protected and specially protected enclosed garden blocks in relation to the total area of enclosed gardens per protection category (Source: edited by the authors, 2022)

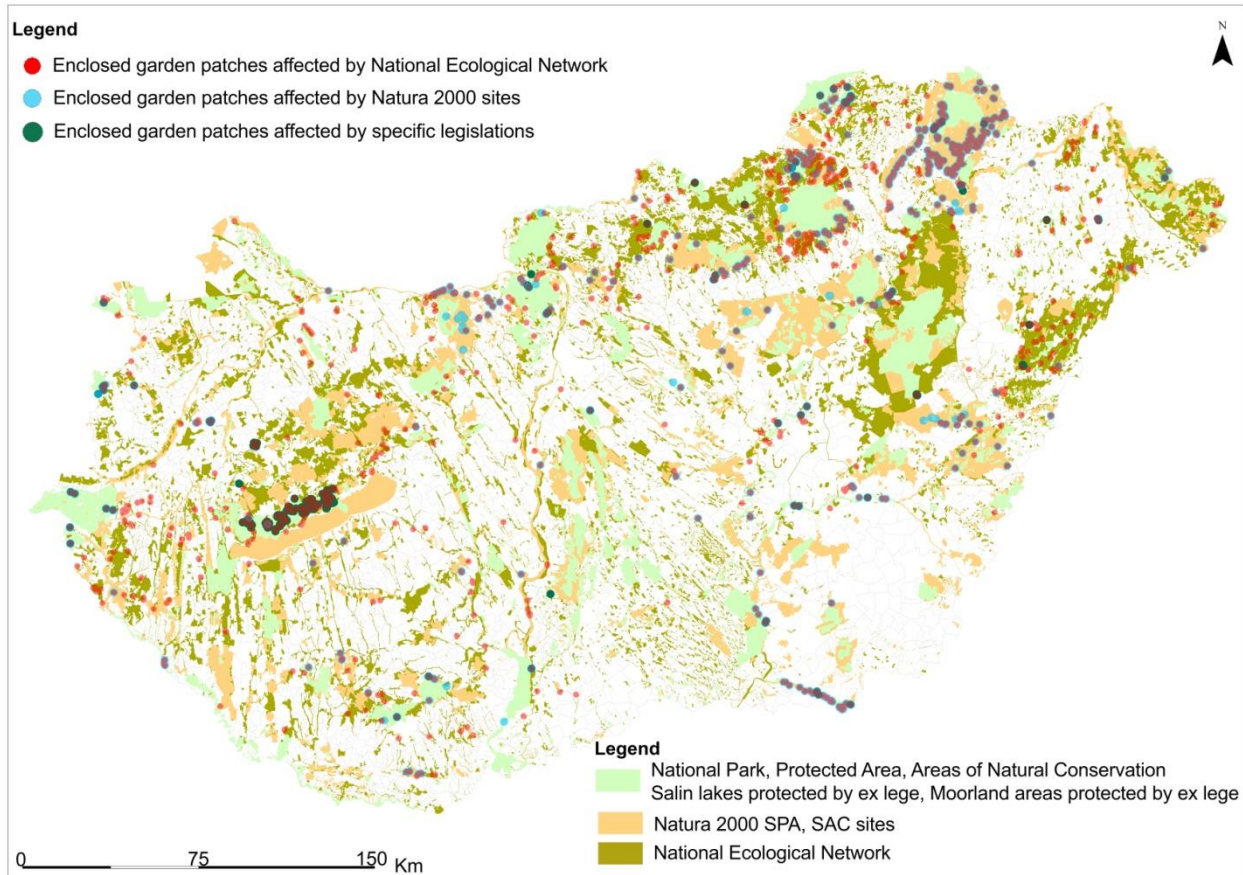


Figure 2. Protected and specially protected enclosed gardens in Hungary (Source: edited by the authors, 2022)

The diagram shows (Figure 3) that patches affected by Nature Park areas and Ecological Network occur in the largest number also in the majority of enclosed garden areas. It also implies that some form of greenways is emerging around protected enclosed garden areas. In addition to national hiking trails, there are several sacred routes in the Balaton Highlands as well, such as the Balaton section of the St. Mary's Way or the St. Martin's Way, which runs between the volcanic witness hills, typically through vineyards and former enclosed gardens.

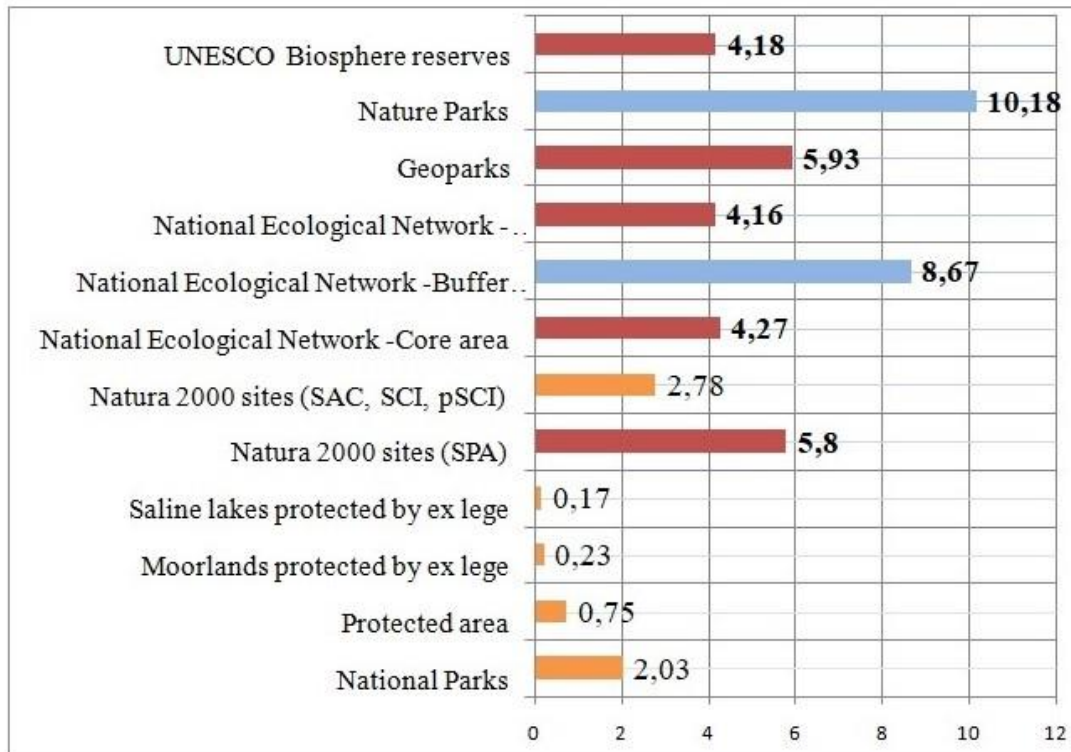


Figure 3. Territorial proportion of protected areas within enclosed garden patches (%) (Source: diagram edited by the author)

6. Discussion and Conclusion

Our research on enclosed gardens aims to explore the landscape values of former enclosed gardens, vine and fruit-growing areas with small orchards, and to investigate the correlation between the trends of transformation and the presence of landscape values. This research is aimed at analysing the role of enclosed gardens in the system of protected natural areas, and at exploring and analysing the landscape values and the cultural, historical, and built heritage as well as the unique landscape values of enclosed gardens. Due to space constraints, the results reported in this paper present the part of our research results that compares the **role and importance of enclosed gardens in the system of protected nature areas** and their perceived importance in greenway network.

The results demonstrated that almost a third of former enclosed garden areas are protected or specially protected natural areas. In many places, there is an overlap between several protection categories. However, compared to the national averages in terms of protection, the territorial proportion of protected enclosed gardens is lower in most protection categories. This is presumably the result of the agricultural nature of the areas and anthropogenic influences, as well as the presence of invasive plant species in abandoned enclosed gardens. Despite lower protection rates than the national average, the value and attractiveness of the former enclosed

gardens is underlined by the fact that almost 30% of their area is affected by greenway routes. Further research on the extent to which the local level of protection of natural areas (Nature Conservation Areas of local importance), landscape protection zones and individual landscape values are present in enclosed gardens could further differentiate the results on the nature conservation importance of enclosed gardens.

Due to the landscape, natural and cultural historical values found in the existing enclosed gardens, as well as already designated tourist and cycling routes in certain areas of the country (e.g. Balaton Highlands, Bükk and Zemplén Mountains, Tokaj Hill, Zala), it is justified the regional development of the greenway network in enclosed garden areas with historical vineyards and fruit growing traditions.

7. References

Books:

Laposa, J. 1988. „Vineyards in the Balaton Highlands.” Mezőgazdasági Kiadó, Budapest.

Michalkó, G. 2012. “Turizmológia./Tourismologie.” Akadémiai Kiadó, Budapest.

Ónodi, G. – Cros- Kárpáti, Zs. 2004. „Gardens and gardeners – Urbanisation or rural development?” Mezőgazdasági Kiadó, Budapest.

Doctoral dissertations:

Bárcziné Kapovits, J. 2014. „The greenway planning in Hungary establishing a landscape architecture methodology” Corvinus University of Budapest, Doctoral School of Landscape Architecture and Landscape Ecology, Budapest.

Journals:

Csirszki, M. 2017. “The historical antecedents of closed gardens’ evolution.” *Miskolci jogtudó* 2017/1, p. 11-21.

Fabos J. Gy. 1995. „Introduction and overview: The greenway movement, uses and potentials of greenways.” *LANDSCAPE AND URBAN PLANNING* 3, 1-13. pp. 4-6.

Kabai, R. 2001 “Falusi turizmus és tájvédelem./Rural tourism and landscape protection.” *Turizmus Bulletin*. 2001/4. pp. 39- 46.

Magyar, Zs. - Sulyok, J. 2014. “Az ökoturizmus helyzete Magyarországon./The situation of ecotourism in Hungary.” *Turizmus Bulletin*. 2014/2. Pp. 14-23.

Mikházi, ZS. 2018. “Az ökoturizmus fogalmának egyedfejlődése: alap kutatás a definíciótól a tervezésmódszertanáig./The individual development of the concept of ecotourism: basic research from definition to planning methodology.” *Doctoral dissertation*. <http://phd.szie.hu/?docId=16158>

Molnárné A., K., Vaszócsik, V. 2019. “Historical Study of the Garden Plots in the Danube Bend from the 19th Century to the Present.” Proceedings of the Fábos Conference on Landscape and

Greenway Planning, Volume 6 *Adapting to Expanding and Contracting cities, Article 8*

Nemzeti Fejlesztési és Gazdasági Minisztérium/Ministry of National Development and Economy 2008. „A Duna menti turizmus hazai és nemzetközi dimenziói, Konceptió. National and international dimensions of Danube tourism. Conception.”

Ross, Sh. - WALL, G. 1999. “Ecotourism: towards congruence between theory and practice.” *Tourism Management*. 20. pp. 123 -132.

Sulyok J. 2001. “Ökoturizmus./Ecotourism.” *Turizmus Bulletin*. 2001/4. pp. 31 - 38.

Weaver, D. B., Lawton, L. J. 2007. “Twenty years on: The state of contemporary ecotourism research.” *Tourism Management*. 28. pp. 1168 - 1179.

GIS Databases

Basic State Datas of Hungary:

Data owner: Lechner Knowledge Center

Opensource GIS Databases:

Openstreetmap

<https://turistautak.openstreetmap.hu/turisautakegyben.php>

Corine Land Cover 2018

CORINE Land Cover — Copernicus Land Monitoring Service

Protected area

Data owner: Ministry of Agriculture, Deputy State Secretary for Nature Conservation, Department of Nature Conservation; Department of Natural Parks and Landscape Protection; Hungarian Geopark Committee