

DESTINATION MANAGEMENT OF PROTECTED AREAS IN BUDAPEST

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Abstract

Around 5% of the territory of Budapest is under protection by the Duna-Ipoly National Park, and 1,6% is protected by the Budapest Municipality. These areas are managed and protected in different ways by Budapest Municipality and by the Duna-Ipoly National Park and this situation is not advantageous for the protected areas. It would be beneficial to manage these areas only by the Duna-Ipoly National Park, because the national park has the necessary capability, expertise and international tender opportunities. Thanks to this, the protected areas would be developed and managed conserving biodiversity, while creating touristic attractions. To prove these hypotheses data were collected about the incomes, tenders and developments of the protected areas by the Duna-Ipoly National Park and Budapest Municipality. The analysis of data proved that only the National Park has income from the management of the protected areas and through the tenders. While Budapest Municipality has financial resources only from the central budget, the National Park has won tenders for around 860, 000 Euros recently. Additionally, national parks also collect entrance fees or fees for guided tours from visitors.

Investigating the situation of the protected areas it is clear that only the areas managed by the Duna-Ipoly National Park are profitable and thus they are more sustainable than other areas.

Keywords: *environmental management; nature trail; nature education; public administration; urban ecology; urban nature conservation; urban tourism*

Paper Type: *Scientific paper*

Introduction

The landscape in Budapest is varied. The Buda side has forests, rocks, caves and highland, which serve as the habitat of many endemic plant and animal species. The green areas of the Pest side also have great importance in the conservation of wetlands, meadows and sand dunes. These sites are of primary importance according to the European nature

conservation policy (The Habitats Directive). Furthermore, there are several Natura 2000 areas, for example on both sides of the Danube and in the Buda Hills and these protected habitats have several Pannon endemic species.

Presently, there are not enough financial sources from the central budget to protect and manage these areas in Budapest. The national park and the NGOs mostly have the professional skills and tender possibilities (LIFE+, Environment and Energy Operative Program) to manage the protected areas than the local governments or Budapest Municipality.

The management of protected areas is not easy, owing to the complicated and multilevel regulation of protection. However, thanks to protection and professional management, protected areas can serve as tourist attractions, which can make a profit for the proprietor.

The role of protected green areas in the urban areas

Today urbanization threatens natural values. The impact of urban areas on the natural environment and ecology can be devastating. These problems appear in many countries where larger cities developed early. There is a major demand for natural resources, the obliteration of the natural hydrological system is a common problem, just like the reduction of the biomass and the alteration of species composition. The huge quantities of waste alter the environment, creating new land by reclamation and landfill (Goudie and Viles, 1997). Nature protection should offset these negative processes and events in the urban area as well.

The preservation, expansion and maintenance of green areas (and protected areas) in the cities is particularly significant for urban ecology and urban climatic reasons. Additionally, green areas have great importance for the individual perception of the inhabitants. The "Green" is not just a decorative accessory of the urban sites, but an absolute necessity of life (Brämer, 2000). Consequently it is important to establish or preserve green areas and protected areas in the whole area of the cities. Fortunately, larger cities in the European Union – for example Brussels, Vienna or Budapest – have a lot of protected areas

either in the suburbs or in the inner city. But most protected areas are in the suburbs and in the rural areas around the urban territory (Fig. 1.).

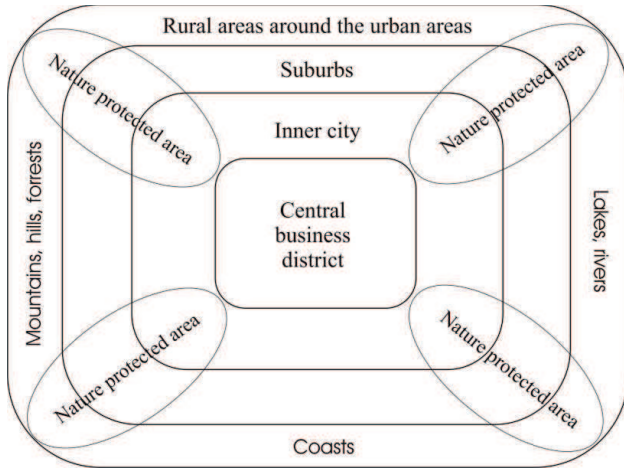


Figure 1. The location of nature protected areas in the city.

Source: Own edition based upon Waugh (2000)

The most important environmental and ecological functions of urban green spaces are (Hudeková, 2009):

- decreasing the effects of noise and air pollution;
- climatic amelioration;

- influencing and affecting the hydrological cycle (rainfall problems, storms); biodiversity conservation; ecological services;
- indirect aspects, e.g. environmental education, health of the population, leisure and recreation.

Protected areas in Budapest

Over the past few years, several residential quarters, malls and paved roads were built, destroying various valuable habitats in Budapest. Furthermore, cutting the ecological corridors causes the fragmentation and degradation of green areas (Beluszky, 2007). For example, a housing estate was built in Csepel (District XXI.) destroying around 5 hectare of sandy grassland vegetation in 2003 (Tenk et al., 2014). The Buckthorn Nature Protected Area of Újpest is threatened by road constructions fragmenting the area of the sandy grassland. The surroundings of Apáthy Rock or the Quarry of Fazekas Hill are threatened by cutting the ecological corridors (Bajor, 2009). To avoid the total devastation of these valuable green areas more protected areas should be established in Budapest.

According to the Budapest Municipality Decree no. 25/2013 the Hungarian capital has 27 locally protected areas and 12 natural monuments (11 trees and the Geological Basic Profile of Pusztaszeri Street) on around 850 hectares (www.termesztvedelem.hu). The Geological Basic Profile of Pusztaszeri Street

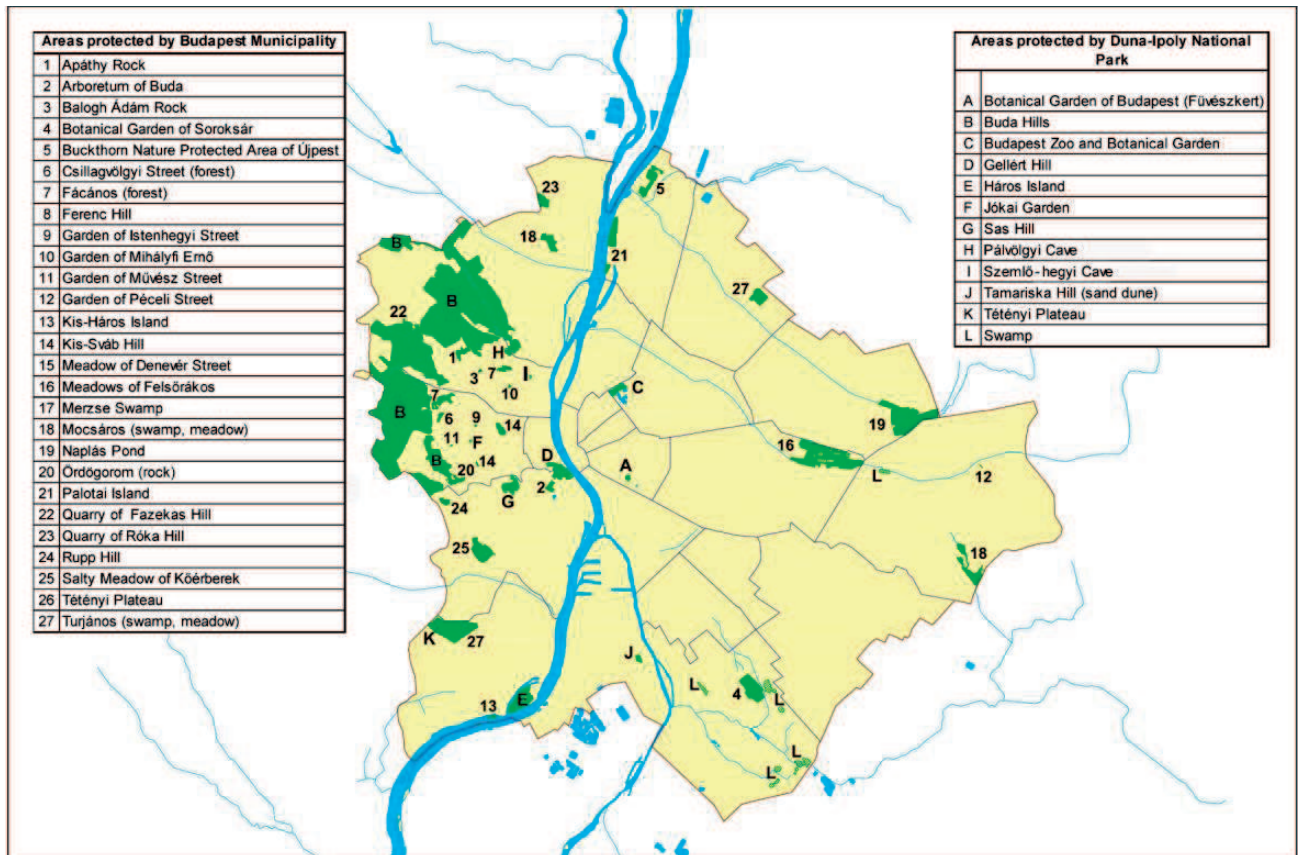


Figure 2. The location of protected areas in Budapest.

Source: own edition

in Buda is protected by Budapest Municipality, but it is not a protected area, but a natural monument⁸. This is a very important geological profile, because this is a typical outcrop of the marl formation (Bognár, 2005).

Furthermore, 10 areas (hills, meadows, sand dunes, caves, gardens) and 6 swamps are protected by the Duna-Ipoly National Park on around 2700 hectares. The swamps are „ex lege” protected areas without management (Act LIII. of 1996 on Nature Protection). The total area of the swamps is around 80 hectares and they can be found in the eastern and southern

parts of Budapest (Bajor, 2009). Among the protected areas there are Natura 2000 sites, for example parts of the Buda Hills, the Tétényi Plateau and the lower reaches of the River Danube (www.dinpi.hu) (Fig. 2.).

There are sites having important plants, animals or geological forms, but no area has only one reason to be under protection. The majority of these areas have complex values, e.g. Kis-Sváb Hill, Sas Hill, Gellért Hill, Ördögörom, Rupp Hill or Ferenc Hill. But it must be emphasized that every area has a primary value, which is the main reason of the protection (Tab. 1.).

Table 1. List of protected areas by Budapest Municipality

Areas protected by Budapest Municipality			
Name	District	Hectare	Main cause of protection
Balogh Ádám Rock	II.	1,0799	geological value (Upper Triassic dolomite formation)
Apáthy Rock	II.	9,2219	geological value (Upper Triassic dolomite formation)
Quarry of Fazekas Hill	II.	0,6538	geological value (important place of occurrence of Upper Triassic Gastropods)
Ferenc Hill	II.	8,6198	geological value (cave)
Garden of Mihályfi Ernő	II.	0,3627	botanical value (botanical collections)
Quarry of Róka Hill	III.	20,025	geological value (paleokarst forms)
Mocsáros	III.	24,6345	landscape value (wetland)
Buckthorn Nature Protected Area of Újpest	IV.	40,9259	botanical and zoological value (sandy grassland)
Palotai Island	IV.	49,1649	landscape value (floodplain forest)
Meadows of Felsőrakos	X.	163,8109	botanical and zoological value (meadow)
Arboretum of Buda	XI.	8,9452	research and educational value (botanical collections)
Rupp Hill	XI.	7,8445	botanical and zoological value (forest)
Salty meadow of Kőérberék	XI.	44,7343	geological value (bitter salty springs, alkaline soil)
Ördögörom	XII.	17,4215	botanical and zoological value (forest)
Kis-Sváb Hill	XII.	11,7462	botanical and zoological value (forest)
Meadow of Denevér Street	XII.	0,9433	botanical value (rocky grassland)
Fácános	XII.	6,751	botanical and zoological value (forest, rocky grassland)
Csillagvölgyi Street	XII.	2,1775	botanical and zoological value (forest)
Garden of Istenhegyi Street	XII.	0,4062	landscape value (artificial and natural botanical garden)
Garden of Művész Street	XII.	0,4228	landscape value (artificial and natural botanical garden)
Turjános	XV.	10,8579	landscape value (wetland)
Naplás Pond	XVI.	165,6866	botanical and zoological value (wetland)
Merzse Swamp	XVII.	49,4744	landscape value (wetland)
Garden of Péceli Street	XVII.	0,3478	educational value (botanical collections)
Kis-Háros Island	XXII.	2,8919	botanical and zoological value (floodplain forest)
Tétényi Plateau	XXII.	130,2059	landscape value (grassland)
Botanical Garden of Soroksár	XXIII.	63,8653	research and educational value (sandy grassland, wetland)
Total	-	843,2216	-

Source: Own edition based upon Budapest Municipality Decree no. 25/2013

⁸ According to the definition the natural monument is an important and protected unique geological, scientific or cultural value in a relatively small area (Leser et al., 2011).

The areas protected by Duna-Ipoly National Park have usually complex and nationally important values. There are mainly the "ex lege" protected caves, which play an important role in the

tourism and in the health care, e.g. the Szemlő-hegyi Cave to cure breathing problems (Tab. 2.).

Table 2. List of protected areas by the Duna-Ipoly National Park

Areas protected by Duna-Ipoly National Park			
Name	District	Hectare	Main cause of protection
Gellért Hill	I./XI.	39,72	geological and landscape value (thermal springs, view in Budapest)
Buda Hills	II./III./XII.	2568,00	geological, botanical and zoological value
Surface of Pálvölgyi Cave (Pálvölgyi Cave)	II.	4,70	geological value (cave)
Surface of Szemlő-hegyi Cave (Szemlő-hegyi Cave)	II.	1,10	geological value (cave)
Botanical Garden of Budapest (Füvészkert)	VIII.	3,10	botanical value (botanical collections)
Sas Hill	XI.	29,73	geological, botanical and zoological value
Jókai Garden	XII.	3,17	landscape value (artificial and natural botanical garden)
Budapest Zoo and Botanical Garden	XIV.	10,76	botanical, zoological, research and educational value
Tamariska Hill	XXI.	5,22	botanical and zoological value (sandy grassland)
Háros Island	XXII.	56,40	landscape value (floodplain forest)
Tétényi Plateau	XXII.	7,11	landscape value (grassland)
Total	-	2729,01	-

Source: Own edition based upon data of Ministry of Rural Development Decree 129/2011)⁹

The regulation of nature protection in Budapest

Due to the dual local government system, the capital has great bureaucracy on the field of nature protection. The administration of the Hungarian capital and its districts is regulated in a separate law. Budapest has a peculiar two-tier administration system. There are twenty-three districts with their own local governments and there is Budapest Municipality with its own regulation (Lőrincz, 2007). The districts directly elect representatives – today the mayors of the districts and directly elected council members – who form the basis of the city's self-government (www.budapest.hu). This offers the possibility of free bargaining between the districts and Budapest Municipality. But this dual system has some problems in the field of nature protection.

The Minister of Agriculture (and under-secretary), the administrative authority and the town clerk of local governments (and Budapest Municipality) manage the administration of nature conservation regulation. According to the new Act CLXXXIX of 2011 on Local Governments and the Act LIII. of 1996 on Nature Protection, the Budapest Municipality has the right to establish or delist a protected area in agreement with the districts, and it has the right to change the status of a protected area. However, the districts have the right to veto this decision. Furthermore, the Ministry of Agriculture has the right to set up a protected area anywhere in Hungary, including the

capital. And any Hungarian citizen has the right to initiate the protection of an area.

The status of the territory in question can be changed after a thorough investigation of the area. National Parks and NGOs must be involved in the pronouncing process. For Natura 2000 sites and all protected areas in Budapest the Middle-Danube-Valley Inspectorate for Environmental Protection, Nature Conservation and Water Management (abbr. KDV-KTF) is the competent authority (www.fori.hu) (Fig. 3.).

As a result of a recent decision of the Hungarian Parliament, the Inspectorates for Environmental Protection, Nature Conservation and Water Management will be subordinated to the Government Offices from 2015 (Act VI. of 2015).

Independently of the results of the professional decision-making process, the city council has the right to establish or to delist a protected area in Budapest. The council members are elected politicians, and their decisions are mainly political, not professional. However, establishing or delisting a protected area should not be a political question, but a professional one. Additionally, the final decision of the city council is difficult to change, only the Minister of Agriculture can modify it. Unfortunately, the national parks have not enough possibility to influence the decisions of the Ministry because the Ministry makes the final decision.

⁹ The status and the data of the protected areas by the national park are inaccurate on the internet sites of the administrative authorities. The data sources are often contradictory and out of date.

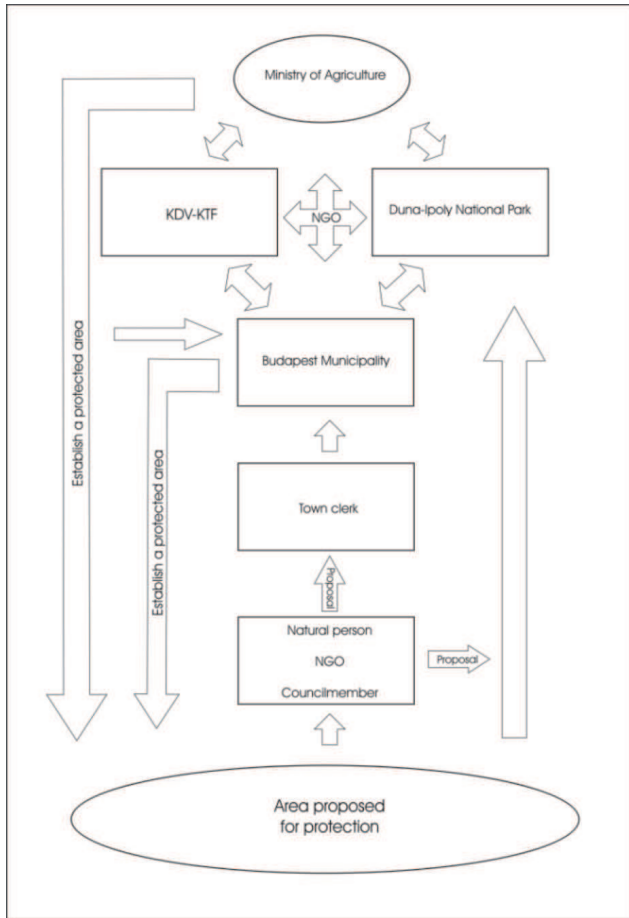


Figure 3. The process of establishing a protected area in Budapest. Source: own edition

Destination Management Organizations of protected areas in Budapest

The protection and management cannot work without cooperation. The participants of this cooperation are external and internal stakeholders (Fig. 4.).

External stakeholders	Internal stakeholders
Development cooperatives	Enterprises (local)
Regional and national governments	Community members
Enterprises	Project workers
Tourism industry	Tourists

Figure 4. External and internal stakeholders of ecotourism and nature protection. Source: Winkler and Zimmermann (2014)

Internal stakeholders are important participants of the local community and have a direct influence on the system of the nature protection. The external stakeholders provide the

framework for the nature protection, developments and tourism activity (Winkler and Zimmermann, 2014).

One of the goals of the protection of green areas is to create and to manage a network of natural areas in Budapest. And to achieve these goals it is necessary to effectuate the following (Font and Brassler, 2002):

- to develop well-managed, protected natural areas which can welcome visitors;
- to create a cooperation between the authorities of protected areas, the local population and commercial and nature conservationist organizations (NGOs);
- it is important to balance between nature conservation, local development, tourism and recreation;
- we need to avoid potentially conflicting activities.

Furthermore, wildlife protection is important not only for ethical and moral reasons, but for recreational benefits, and for economic and touristic reasons. People have realized that the presence and protection of wildlife can improve their lives (Steiner, 2008).

When we investigate the network of the protected areas, we can find few ‘best practices’ of the management of protected areas in Budapest. Following these examples, it is possible to increase the number of well-managed protected areas. And the well-managed areas will attract more visitors in the future.

The protected areas are managed by either the national park or by Budapest Municipality or by another organization (local community, NGO). The majority of the protected areas are managed by Budapest Municipality cooperating with Főkert Non-profit Ltd., the gardener entrepreneur of Budapest Municipality (www.fokert.hu). The Buckthorn Nature Protected Area of Újpest (Újpesti Homoktövis Természetvédelmi Terület) is managed by the BirdLife Hungary (The Hungarian Ornithological and Nature Conservation Society, abbr. MME) and the Tétényi Plateau Protected area is managed by the Green Future (Zöld Jövő) NGO. The Botanical Garden of Soroksár belongs to the Faculty of Horticultural Science of the Corvinus University of Budapest (<http://sorbotkert.hu>). For the entrance fee the visitors can get a guided tour.

There are areas which are protected by the Duna-Ipoly National Park, but the national park does not manage these areas. These are the Buda Hills, the Botanical Garden of Budapest (Füvészkert), the Gellért Hill, the Tétényi Plateau and the Tamariska Hill. The Füvészkert belongs to the Hungarian State (managed by the Eötvös Lóránd University) and the Zoo is a stand-alone budget-funded organization. The maintainer and the supervisor of the Zoo is the Budapest Municipality¹⁰ (www.zoobudapest.com). The Gellért Hill is managed by the Főkert Non-profit Ltd., the main part of the Tétényi Plateau belongs to the Hungarian State. The Tamariska Hill is managed by Csepel Local Government (District XXI.) with the guidance of the Duna-Ipoly National Park.

The areas managed by the national park are so-called self property management areas of the Duna-Ipoly National Park. These

¹⁰ The local government has no income from the Budapest Zoo according to the information of Budapest Municipality.

are the Sas Hill, the Háros Island, the Jókai Garden, the Szemlő-hegyi Cave and the Pálvölgyi Cave. The most important nature protection developments were executed in these areas.

The most important recent developments were the touristic

development of the Szemlő-hegyi Cave, the Sas Hill and the historical Garden of Jókai Mór (Jókai Garden) by the Duna-Ipoly National Park in Budapest. The support intensity was 75% by the European Union (Tab. 3.).

Table 3. Applications of the Duna-Ipoly National Park in Budapest

Name of the tender	2008	2009	2010	2011	2012	2013	2014	In sum
Development of the touristic receiving capability of the Cave of Szemlő Hill (HUSK/0801/2.2.1/153)	0	0	370,222	88,032	0,000	0	0	458,254
Development of the visitor center of Sas Hill (KMOP - 3-1.1/A09-2009-0001)	0	0	922	44,409	144,270	0	0	189,601
Reconstruction of the Jókai Garden (KMOP-3.2.1/B-09-2009-0009)	0	0	0	181,500	29,593	0	0	211,093
In sum	0	0	371,144	313,941	173,863	0	0	858,948

Source: own edition based upon the data of Duna-Ipoly National Park

The main project of the Szemlő-hegyi Cave was the reconstruction of the reception building and of the park around it (Photograph 1.). Furthermore, a geological demonstration

center was created with an interactive exhibition. Now the whole area is accessible for the disabled, and nature trail was also created (Tenk, 2013).



Photography 1. The main entrance of the Szemlő-hegyi Cave.

Source: own photograph

The goal of the development of the Sas Hill was to create and to develop a visitor center. The main part of the project was to build a terrace with panorama, to renew the nature trail and

to make the territory accessible for the disabled. The full reconstruction of the Jókai Garden took place between 2011–2012. The national park has some income from entrance fees (Fig. 5).

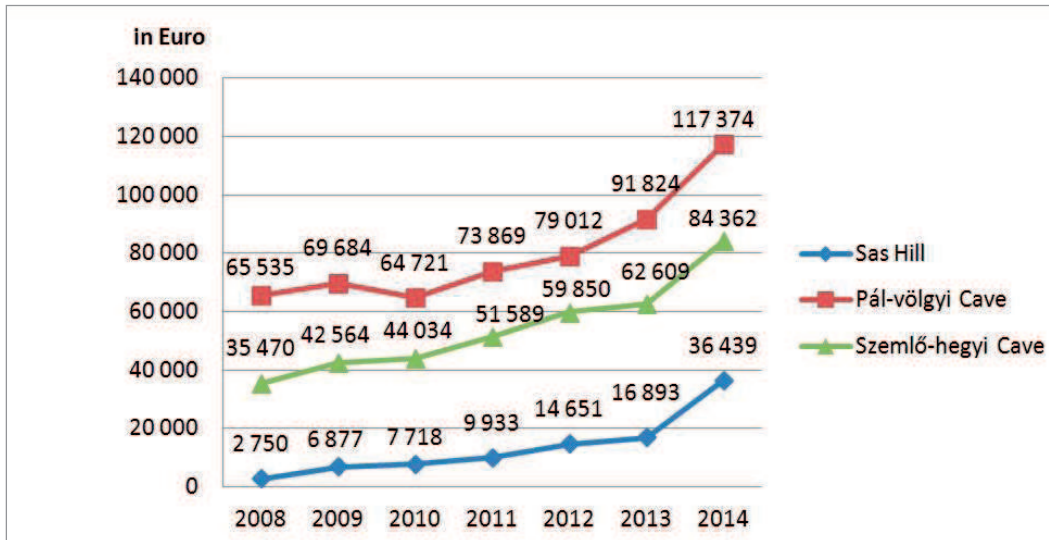


Figure 5. Income from the visitor's entrance fee of the Duna-Ipoly National Park in Budapest.

Source: based upon the data of Duna-Ipoly National Park

Sometimes it is also possible for the national park to get some money from enterprises. For example E.On Hungary supported the renewal of information boards of the reception building of the Pálvölgyi Cave with around 3,300 Euros. By this little financial help environmental education was also supported. (Előd – Karlné, 2013).

The role of the nature protected areas in nature education

The protected areas not only help conserve biodiversity, geodiversity, and make profit, but also they provide sites for nature education. Important ecological principles – e.g. food chains and pyramids – can be observed in a lakes, ponds or in a swamps. While studying the natural world anyone can realize the need for the protection of threatened habitats (Cleave, 1992). This realization can help the extracurricular nature education.

The Duna-Ipoly National Park organizes so-called “underground geography lessons” for teachers and students in the Szemlő-hegyi Cave (www.barlangaszat.hu). The Botanical Garden of Soroksár plays a role in the education of primary and secondary school pupils. Moreover, the garden is the place of botanical and ecological practical lessons for the students of Corvinus University of Budapest. Furthermore, a continuous mycological research is conducted in the garden (<http://sorbotkert.hu>). The Arboretum of Buda or the Fűvészkert also organize special programs for students and families. The greatest help for education is given by the nature trails in protected areas, which are often the sites of extracurricular nature education.

Nature trails in Budapest

Nature trails show the geography, the natural values, the cultural history and the importance of conservation of the pro-

ected area (Leser et al., 2011). In addition to the above developments of protected areas, nature trails were also established. Nowadays there are 15 nature trails and a few of information boards at the typical natural habitats of Budapest. These trails were built by the MME and other NGOs together with the Duna-Ipoly National Park. The financial support was given mainly by the Budapest Municipality and the national park (Bajor-Lampert and – Bajor, 2013). The national park built nature trails only in areas it manages alone or together with the local government, for example in the Sas Hill or the Tamariska Hill. Due to this fact, there are different systems of the nature trails in Budapest.

The examination of these nature trails shows that there are problems of varying degrees to be solved (Dávid 2012):

- to keep track of the number of visitors of the nature trails,
- to connect the nature trails with transport hubs (the trails are isolated in many cases),
- to prevent and to repair the damage done by visitors
- the continuous maintenance of nature trails
- information boards are generally very didactic (For example a small interactive board can help teach the basics of nature protection for children playfully.

What is the main difference between nature trails? The nature trail of the Tamariska Hill shows the nature values of the area, but it has no interactive part. The nature trail of Buckthorn Nature Protected Area of Újpest or the nature trail of the Ferenc Hill has an interactive board showing the nature values of the area for the children. The nature trail of Tétényi Plateau can only be used with the help of a brochure, because the nature trail has only “check points” without information boards.

The brochure guide can be obtained in the office of Zöld Jövő Society. The Quarry of Róka Hill has no nature trail, only one board showing the geological values without describing the biodiversity of the protected area (Photograph 2.) The so-called

“urban geological” nature trail, which presents the geological values and cultural history of the thermal karst of Buda can only be used with a brochure. This geological nature trail passes through several districts (M. Virágh, 2013).



Photograph 2. Different types of information boards (clockwise): Tamariska Hill – Buckthorn of Újpest – Tétényi Plateau – Quarry of Róka Hill.

Source: own photograph

Consequently, Budapest nature trails are really diverse. However, it would be better to build unified nature trails. Why? The nature trails built by the Duna-Ipoly National Park or by the MME show several features of the given area, e.g. biodiversity, geodiversity or cultural history. Other nature trails focus for example on the geology or the flora and fauna only. Some nature trails can only be used with the help of the associated brochure guide. The unification should not apply to the appearance or the format of nature trails – just the type of information presented.

Tourist information about the protected areas

It is difficult for the tourists to get information about the protected areas in Budapest. There is not correct touristic information on the Internet and the books or flyers in English are often too short and superficial. For example, one can read about the protected areas on the www.fori.hu, but only in Hungarian and there is not a correct map representing the routes leading to protected areas, or the access by public transport or by bicycle. The same problem is present on the website of the Duna-Ipoly National Park (www.dinpi.hu). One of the most informative websites is the <http://zoldkalauz.hu>, but the foreign tourist cannot read it in English either. There is a description of

caves at www.budapest.com in English and www.lonelyplanet.com writes about the green areas.

The official governmental websites – www.termeszetvedelem.hu – present correct data, but these are useful for professionals not for the tourists. The homepages of local governments have correct information about the protected areas in their district, but these pages are rarely accessible in English. In sum, the necessary information might be present on several websites, it would be useful to create a multilingual website specialized in natural values.

Conclusion

The protected areas in Budapest are managed by the Budapest Municipality and by the Duna-Ipoly National Park, neither of which has enough income from the state budget. They have possibilities to obtain money from the tenders of the European Union or from entrance fees of tourists. But the national park has more chances than Budapest Municipality. Moreover, the National Park has only nature protection tasks, while the local governments and Budapest Municipality have social, public health, policing or organization of transport tasks etc. And they have primarily income from the central budget and from the local taxes only, e.g. environmental tax.

To realize other incomes the protected areas should be made profitable. Therefore it is important to manage the green areas well, for example to built nature trails and demonstration centers with interactive exhibitions, or offer guided tours with the help of NGOs.

Furthermore, the judicial protection of the protected areas and the manager organizations must be guaranteed.

Nevertheless, there are some protected areas in Budapest which had been developed in the last years by the Duna-Ipoly National Park or by the MME and local governments. If these places were advertised more efficiently online, by flyers, books, films or with the help of the Geographical Information Sys-

tem (GIS), more tourists would visit them, and the areas could make more profit.

If the stakeholders worked together it would not be so difficult to regulate nature protection. There could be more possibilities to conserve the biodiversity of the green spaces and protected areas in Budapest. Consequently, the judicial protection of the protected areas and the manager organizations must be guaranteed. But it would be desirable managing all nature protected areas only by the Duna-Ipoly National Park and discharging Budapest Municipality and the local governments from the nature protection tasks.

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