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Standing Committee

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REPORT

**ON THE SPOT EXPERT APPRAISAL OF THE
VOLCANIC PHENOMENA OF THE TIHANY PENINSULA (HUNGARY)**

16-17 May 2017

*Document prepared
by Mr Pierre Galland (Switzerland)*

1. INTRODUCTION

The European Diploma for Protected Areas was awarded to the Tihany Peninsula in 2003. It was renewed in 2008 based upon the expert's report of 2007, and renewed again in 2012 (without appraisal visit) until May 2018. In addition, detailed annual reports have been regularly provided to the secretariat in Strasbourg with very useful information. The present evaluation, which took place on 16 and 17 May 2017, was carried out in the perspective of the renewal of the Diploma in 2018 for another 10 years' period

The visit was perfectly organised by the Balaton Uplands National Park team. The expert wishes to express his sincere thanks especially to Mr József Vers, Head ranger of Tihany, Mrs Marta Weöres, Mrs Annamaria Kopek and Mr Zoltan Puskas, Director of the National Park and the other persons who shared their knowledge, experience, and interest in Tihany. Mrs Rozalia Szekeres Erdine, Head of Department for Nature Conservation, Ministry of Agriculture, participated to a large part of the mission; additional participants are listed in the mission's agenda attached to the report.

The Diploma area has remained largely the same as it was at nomination time, 15 years ago, with the exception of the visitor's infrastructures which have been significantly enlarged and improved. This report gives only a short description of the area. More detailed or more specific information is available in the original application report, the annual reports and on the website of the park Balaton upland national park: <http://bfmpi.hu> and of Tihany: <http://www.tihany.hu/index.php/fr/>.

The logo and references to the European Diploma are largely used in the publication as well as in the visitor centre and on the explanation tables along the trails. This deserves to be underlined and the managers have to be commended for it. In addition, the other Hungarian Diploma areas were mentioned in some of the info materials.

2. SITUATION AND VALUE OF THE PARK

The Tihany Peninsula is located in the North-East part of Lake Balaton, in South-West Hungary. On a relatively small area, it is a beautiful cultural landscape with a well-known Abbey overlooking a mosaic of forests, pastures with traditional cattle breeds, lakes, wetlands, vineyards and lavender fields constituting a mixture of natural values and cultural heritage. The most exceptional assets are the geological artifacts, witnesses of the volcanic activity which took place 7 million years ago. The climate is submediterranean. Due to the form of the landscape, there is a high variety of local micro-climates and a very interesting diversity of vegetation, fauna and flora.

As part of the Balaton lake recreation area and of the Balaton Upland National Park, the Peninsula is a very heavily visited place, especially in summer and during the weekends. It is actually a part of the Budapest agglomeration as favourite recreation place for its urban population.

3. PROTECTION AT NATIONAL AND INTERNATIONAL LEVEL

First protected landscape in Hungary declared in 1952, the Diploma area of the Tihany Peninsula covers 645.45 ha, of which 137.80 are highly protected. The entire peninsula is included in the Balaton Uplands National Park. The protection of the area is covered by the decree establishing the Balaton Uplands National Park in 1997.

The Peninsula is also included in the Bakony-Balaton Geopark, as members of the Global Geopark network recently recognised by UNESCO, and is also covered by Natura 2000 designation. The administration of the Geopark is part of the Balaton Upland NP. The coasts of the Peninsula constitute the border of the Balaton Ramsar site. Eventually the Tihany Peninsula is included since 1993 on the World Heritage Tentative List for Hungary.

More than 50 % of the land is owned by the National Park and about 15 % by the forest service. There have been many changes in land ownership during the last few years and an updated situation will be presented in the renewed management plan. It would be excellent if all land owned by the state could be transferred to the National Park and if the Park could pursue its policy of land acquisition on the territory of the peninsula. The State (National Park) has a pre-emptive right in case of land sales; however, the attractiveness of the area has led to very high land property prices which make financially difficult the use of this right.

In addition, 2 wetlands, adjacent to the peninsula on both sides, are managed in a very similar way; they could have been included in the Diploma holding area.

The area is managed by the Tihany Landscape Unit within the Balaton National Park. The staff comprises a Head Warden, a professional guide and three workers. Other staff members from the National Park cooperate when necessary.

4. MANAGEMENT

4.1 Objectives

The main objectives are:

- the preservation and presentation to visitors of the unique geological values;
- the maintenance of the typical landscape;
- the conservation of the typical natural and semi natural habitats and of the fauna and flora;
- the conservation of pastures (with souslik and grey cattle traditional breed), land lavender fields;
- the promotion of education, information and research on the area;
- the control of the constructions outside of the village area.

A comprehensive management plan, finalised in 2002 and updated in 2007, is still in force (no period of validity). The descriptive aspects are extremely well covered and very few changes occurred during the last 15 years. The operational chapters would benefit from a more direct formulation of the measures to be taken, but the Tihany Peninsula is actually covered by several other documents, namely:

- National Park management plan
- Geopark Management Plan
- Forestry management plan
- Natura 2000 expected management plan
- Municipal development plan (established in 2013 for 25 years)

More precise active management measures appear more clearly in the annual programmes. However, the different management documents are well coordinated but not really synchronized (different dates of adoption and renewal cycles). The Diploma area would greatly benefit from a synthetic summary management document, bringing together the relevant chapters of the above-mentioned planning documents (“umbrella document” - see recommendations below).

4.2 Zoning

Three specific types of zones are delimited in the European Diploma area:

- strictly protected area (covering lake Külsö, with only exceptional interventions);
- natural zone (with limited interventions, for safety or control of invasive sp for ex.);
- managed natural zone (with management measures).

The vineyards and other cultivated land (lavender fields) are outside of these three zones; it would be nice to include them into a 4th zone for clarification.

A summary table with short description of the zones, their main management objective, the type and frequency of measures recommended and their main threats would be helpful to have a global overview of the long-term management.

4.3 Geology and geomorphology

The altitude varies from 104.8 m on Lake Balaton to 232 m on the highest hills. The most interesting aspects are the volcanic and post volcanic formation: tuffs, tuffits and agglomerates deposited on the soft Pannonean sediments, which were toppled by the harder thermal spring precipitations.

The spring cones, the most interesting forms on Tihany, resulted from deposits of thermal water. They are about 100 on these springs in the Peninsula, with very varied shapes and dimensions. The layersheet slopes, on hard basalt, have limited soil cover and are very interesting from the botanical

point of view. Other forms include tafonis (holes and cavities) and kahrs (small karst formations). The management plan provides a very detailed description of the geological aspects, the most recent scientific findings and the questions still unanswered. It also provides a list of the numerous geological features discovered at Tihany where “nearly every square meter holds some valuable geomorphological features”. Other interesting aspects are a complete Upper Pannonian sequence rich in fossils and a high diversity of soils, 15 types have been described. A register of 24 caves and 8 cave ruins has been established.

4.4 Vegetation and flora

The vegetation types go from the most humid (the two inner lakes, the marshes and the shore of Lake Balaton), to the driest such as the steppe formation and vegetation on cliffs.

There are various types of meadows, with an interesting flora.

Forests are also varied, of warm and dry types such as *Cotino – Quercetum pubescentis*, with a dense undergrowth of bushes and other types of oak forests with *Quercus petraea* and *Quercus cerris*. Some are evolving naturally from former open grazed spaces with big trees to closed forests; in some cases, important interventions have taken place to reopen them; this is possible as long as they are not considered as “real” forests and transferred under forest administration.

Several rare submediterranean plants, such as *Sternbergia colchiciflora*, *Scilla autumnalis* grow in the grassy steppes of Tihany. There are more than 40 protected species; an updated list will be presented in the operation management plan.

An old lavender and almond tree plantation, colonised by interesting indigenous species, is a witness of a former use of the area.

The vegetation of the vineyards (mostly ploughed) and of the very few other ploughed fields does not seem to include real rare species linked to these types of habitats,

The moss flora has been well studied and around 130 species have been found.

A series of lichens growing mainly on geysirite give a special orange colour to spring cone, hence the name given to the most spectacular, the Golden House.

Invasive species are present and continue to spread in the whole territory. The most problematic are *Eleagnus angustifolia*, *Robinia pseudoaccacia* and, especially, *Ailanthus altissima*, which grows very fast and is very difficult to control.

4.5 Fauna

The Tihany Peninsula, rich in xerothermic species such as cicadas, has always attracted the attention of zoologists. Over 1,000 species of insects have been identified. 800 butterflies occur here, some of them are extremely rare. There is an interesting fauna of bees and wasps on the steep sand-clay slopes descending towards the lake.

The fauna of reptiles and amphibians is rich, with, respectively 8 and 9 species known.

Birds benefit from the diversity of habitats and count 95 breeding species including the marsh harrier *Circus aeruginosus*, the purple heron *Ardea purpurea*, the bee eater, *Merops apiaster*, the common scops owl *Otus scops*.

There are 31 species of mammals. Among them there is a good colony of souslik (successfully reintroduced), the wild cat, the otter and Daubenton's bat, *Myotis daubentoni*. Important populations of deer, roe deer and wild boars are a concern for agriculture and forestry. Sousliks have been reintroduced as measure to support threatened raptors.

An updated list of animal species will be presented in the operation management plan.

4.6 Hydrology

The average rainfall of 613 mm is low and water seeps through the rocks. There is no watercourse and only one spring. Two lakes exist on clay sediments: Lake Külső, or “Outer Lake”, is more a marsh. It has been drained for agriculture purposes then rehabilitated in 1970 by blocking the main

drainage canal. Lake Belsö, or “Inner Lake”, has a surface of 35 ha, is also fed by rainfall and has no outlet. It is 2 to 4 m deep. It is an eutrophic lake, but the quality of the water is relatively good, with a low content in nitrates. The water level has risen naturally over the last few years.

In the South-West of the peninsula, the protected area includes the 3 km of shore of Lake Balaton. The general ecological condition of the whole lake has significantly improved, with reduction of the nutrients. The waste waters from the watershed are collected, treated and carried to the Danube without affecting the lake. There is no commercial fishing in the whole lake any more, and motor boats are prohibited.

4.7 Agriculture

The area was used since a very long time for grazing and cultivation. Grazing has been almost abandoned, but rare breeds (gray cattle) have been reintroduced for management purpose. The sheep management is handled by the managers of the area, who keep a herd as a mean of keeping meadows open. About 60 ha of pasture with old oak and almond trees have been cleared of alien species and bushes.

Some meadows are exploited for hay, others simply cut once a year by the manager of the area to maintain them and to prevent their colonisation by bushes and trees. Short grass meadows are maintained close to the visitor center and a good population of souslik has been reestablished, which can easily be observed by the public. The presence of souslik should also contribute to the reinforcement of 2 threatened birds of prey, the Imperial eagle and the Seker falcon.

Due to the poor quality of soils, less than 5 ha of land are still ploughed.

The vineyards are maintained by private owners. It would be most useful if they were all managed according to integrated or organic methods of production; however, the park experts participate in controlling the distribution of state subsidies for nature-friendly practices. A functional buffer zone should be established between the vineyard and the lake, as appropriate.

The lavender is cultivated again; the Lavender festival, in June, is a very popular regional event. Almond trees have recently been planted, as well as orchards of old varieties of fruits as contribution to the preservation of the genetic resources of the region.

4.8 Forestry

Forests are under the national forestry administration; forestry and nature protection are in the same ministry (agriculture) which help to maintain close relations. There is no conflict regarding the forest management plan (10 years operation). There is no commercial forest exploitation. Some dead wood is collected. The black pine plantations are dying out naturally.

Interventions are mainly aimed at the control or elimination of exotic species such as *Eleagnus angustifolia*, *Robinia pseudacacia*, *Ailanthis altissima*.

4.9 Hunting and fishing

The hunting rights belong to the National Park. There is no hunting per se. Regular but limited culling is done by the National Park staff to reduce the number of wild boars, deers and foxes.

Fishing is practiced on Lake Belsö. It is restricted to a limited part of the shore to protect the riverine vegetation. There is a natural reproduction and some controlled introduction of larger specimens of indigenous species.

The fishing management was given back to the State and has been transferred to the National Park, which is very positive. The trusteeship right of the Inner-Lake belongs now to the National Park Directorate, while the fishing rights still belong to the local angling association until October 2017. An initiative was submitted to the Ministry of Agriculture to take over the fishing rights based on European Diploma recommendations. The decision is expected to take place after the previous fishing right expires (October 2017). The site managers hope to get the fishing rights by the time of the new recommendations come into effect and the expected renewal of the European Diploma. If they do not succeed in getting the fishing rights, they will be given to another company/association

that will have this right for at least 15 years. In addition, it would be important to improve the ecological state of the Inner-Lake.

4.10 Natural sites in the surroundings

South-West of the peninsula, the bay of Boszai, on Lake Balaton, is one of the important remnants of natural shore of Lake Balaton, with reed belt, coastal marshes and wet meadows dominated by *Carex* and *Molinia*.

North-East of the peninsula, the marshes of Felső are protected, but the management is limited by the important parceling out of the private properties, with a great number of owners.

These complementary sites are managed together with the natural zones of the peninsula.

4.11 Cultural heritage

Many cultural values of Tihany are outside, but very close to the protected areas. The most famous is the Benedictine Abbey. It must be underlined that the National Park maintains excellent relations with the prior of the Abbey. The Abbey is interested to keep the environment peaceful and as natural as possible to create a favourable atmosphere around it. In the Diploma area, two very old churches and a cellar have been restored. Other old cellars are still in ruin.

4.13 Landscape value and physical planning

The peninsula, with the various hills and two lakes, forests, vineyards and meadows, excellent views on Lake Balaton and the village of Tihany, is a very beautiful landscape.

But the pressure on land for construction is very high on Tihany Peninsula. There are regular requests to build new cellars in the vineyards within the protected area. These cellars are not necessary and could easily be used as week-end houses. It is very important to stick very strictly to the interdiction of new building in the Diploma area. It is also important to ensure that new constructions near the area do not impact the area itself or its landscape values.

The municipality has prepared through a large participatory process a development plan for the next 25 years. The working group included 23 partners, most of them considering the National Park as an opportunity for them. The mayor has visited resort areas in Switzerland where cars are totally prohibited (electric vehicles only); his vision is to keep motor traffic only from and to the ferry and to allow electric vehicles only inside the village.

There is a big tourism pressure and requests for new constructions. It is very important to maintain the current limit of the construction zone and to effectively control the constructions outside of this zone.

5. EDUCATION, INFORMATION AND TOURISM

Education is high on the priorities of Balaton Uplands National Park. There is a comprehensive network of hiking trails, many of them being equipped with information boards and can be considered as nature trails. The quality of information (volcanism, environment, fauna, flora, management practices) is very good.

Two large facilities have been constructed or renovated for educational purpose:

The Lavender Center, on the edge of the village, next to Lake Belső, offers a large space for visitors: shop, cafeteria, movie room, permanent exhibition, working room. It was opened in 2011 and is managed by an independent organisation but under very strict control of the National Park Directorate. Lavender is the central theme and is present everywhere (drinks, shop articles, etc.). A system of cameras in the meadows next by gives the visitors the possibility to explore de visu the life of a souslik colony. The center has been visited by over 180'000 visitors so far.

A well renovated old building is located in an opening of the forest not far from the South West coast. It is called "Forest school" and welcomes groups (classes) of teenagers with their teachers for a stay of between 1 to 5 days (mostly 3 days). It is largely used for open air schools (30-35 groups of 20-30 kids). Information is very well developed, especially on the geological aspects, with excellent information boards.

The village of Tihany is one of the most visited sites in the highly tourist region of Lake Balaton. It is also the only place with a regular ferry service between the two shores of the lake. Most tourists come for the Abbey, stay in the village, but many visit the protected areas. The pressure is not too intensive at present. Visitors tend generally to stay on the trails, which are well maintained and resilient, and do not lead to sensitive areas. The pressure is however likely to increase and should be closely followed by the managers. There is currently only a limited number of bikers and very few conflicts with pedestrians are reported. However, this activity is very likely to increase, and the Park management should be prepared to react. A solution would be to restrict the bikes to only some paths, namely the forest roads (wide enough).

In general, the quality of information is very good; the number of visitors in the Lavender centre has increased for the first years after its opening, but is now stable or slightly decreasing. The managers see the necessity to offer new services and to make renewed information materials periodically in order to continue attracting visitors. A new film is under preparation. More detailed information regarding the centre's and general information activities can be found in the annual reports.

6. SCIENTIFIC RESEARCH

Tihany has always attracted the interest of scientists. The Hungarian Balaton Limnological Research Institute - founded in 1927 in Tihany - did extensive research on the peninsula of Tihany. As a result of this wide scientific interest, hundreds of publications have been published, dealing with its geology, fauna and flora. The research done, and continued, has very positively influenced the protection and management of the area.

The list of projects and publications should be updated and attached to the synthetic management document.

7. RECOMMENDATION FROM THE LAST RENEWALS

After the field appraisal of 2007 and the renewal of 2012, several recommendations were issued regarding the Tihany Diploma area. Most of them have been implemented, but some of them need to be extended due to the remaining pressure from outside on the peninsula and its value.

1 (07) / 3 (12): pursue the planning and construction of the visitors centre near Lake Belsö;

- The Center has been built, equipped and is fully operational

2 (07) / 1 (12): translate the management plan into more detailed and practical measures;

- The 2007 management plan should be updated / renewed; however different documents at larger scale (NP, Geopark, N2K) exist. They should be combined in a summary document specific to the peninsula.

3 (07) / 2 (12): strongly enforce the interdiction of new building on the site;

- The actual zoning is good, but pressure for new constructions is ongoing. The municipality and the National Park should work together to ensure respect of the non-construction status of the protected area

4 (07) / 4 (12): continue to manage and control the visitor's pressures;

- The visitors' management is very efficient and the information system very good.

5 (07) / 7 (12): encourage the transfer of the management rights on fishing in Lake Belsö to the Balaton Uplands National Park;

- An initiative was submitted to the Ministry of Agriculture to take over the fishing rights based on European Diploma recommendation. The decision is expected by October 2017.

6 (07) / 6(12) keep the balance between closed forested areas and open areas (meadows with hedges and bushes);

- Clearing of several meadows invaded by bushes has been completed recently; the actual balance is quite good.

7 (07) / 6(12): encourage farming and vineyards growing practices in harmony / consistent with the conservation of natural and landscape values;

- It is difficult to check the type and amount of chemicals used in the vineyard; however, there is a general tendency to reduce the use of pesticides in vineyards. On the other hand, some vineyards are planted very close (upstream) to the strictly protected zone (lake). Establishment of a larger and functional buffer zone would be highly suitable for water protection.

8 (07) / 8(12): encourage the transfer of state properties to the Balaton Upland National Park and pursue the acquisition of private land;

- Ongoing, but somewhat limited due to financial constraints

9 (07) / 9(12): continue the control of invasive species such as *Ailanthus*;

- Ongoing – but this is a never-ending job!

10 (07) 7 10(12) develop a coordinated management with the protected areas close, such as the reed beds on the shore of Lake Balaton and the marsh of Külso and Felső

- Done

8. CONCLUSIONS AND RECOMMENDATIONS

The Tihany peninsula is extremely well managed by a very competent team under the administration of the Balaton Upland National Parks. The key people who prepared the first nomination are still in place, which is quite exceptional and guarantee coherence and continuity of the management. The natural and cultural values have been well preserved; some of the geological and biological features have improved and have been promoted, and in general a high-quality information system had been built and operated.

During the nomination phase, constructive discussions have permitted to exclude the built area with clear delimitation of the protected zone. The protected territory has an adequate zoning with high level of protection for key conservation areas, while offering large public access to key geological and biological elements. The results of these decisions are very good on the ground. On a small surface, the Diploma area of the Tihany Peninsula offers a very interesting diversity of beautiful landscapes, unique geological elements and natural values.

The overall value of the Tihany Peninsula is well recognised in Hungary and is reinforced with the designation under different international conventions and programmes. As part of the Balaton lake area, it is under a very significant touristic pressure; however, there are very few signs of this pressure on the ground and the responsible authorities work very efficiently together for its conservation.

The expert therefore proposes to renew the European Diploma to the Volcanic phenomena of the Tihany Peninsula for a 10-years period, with the following recommendations:

1. Update the 2007 Management plan and prepare a synthetic summary integrating the other relevant planning instruments currently applicable to the site; define management objectives for the 5 main zones.
2. continue, together with the Municipal authorities, to enforce the ban on new buildings on the site;
3. continue to manage and control visitor pressure; together with the Municipal authorities take measures to moderate the motor traffic in the peninsula;
4. keep the balance between closed forested areas and open areas (open meadows, meadows with hedges and bushes, lavender fields with oaks and almonds);
5. encourage farming and wine-growing practices consistent with the conservation of natural and landscape assets and establish a functional buffer zone between the vineyards and the wetland zone;
6. pursue the acquisition policy of private land;

7. take the necessary steps to improve the water quality of the Belső Lake;
8. continue to control invasive species such as the Ailanthus;
9. continue the co-ordinated management with nearby protected areas such as the reed beds on the shore of Lake Balaton and the Külső and Felső marshes.

6. References

The volcanic phenomena of the Tihany Peninsula. Nature conservation management plan. 2002, revised in 2007 (with a very extensive bibliography)

European Diploma Area - Annual reports