

## Regulation of Visitor Activities in the DINP

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**Abstract:** Thanks to its varied natural and artificial values the Duna-Ipoly National Park (DINP), established as the ninth national park in Hungary is suitable for numerous tourist activities (touring, cycling, horse riding, winter sports, water sports, caving tours, cliff-climbing, flying, fishing, hunting, etc.). Resulting from this, the employees of the national park must reckon with numerous unfavourable environmental effects produced by the tourism and increased by the closeness to Budapest. All of this is intensified on one hand by part of the territory being identical with the outstanding recreation district of the Danube Bend, on the other hand by its coming within the capital city's recreation zone, due to which establishing the section of visitors is also problematic. Although attempts are made to demonstrate the values in the national park in the interest of avoiding the hazards and developing environmental awareness and ethics, regulation of the visitors' activities, for the main part, does not take place in a planned manner. In our article, besides disclosing the causes of the disorganisation, we also stipulated the most important principles for solving these problems.

### Introduction

Although the primary task of the national parks is protection and rehabilitation of natural and artificial values found in the areas under their administration, the presentation of these values, together with developing an attitude intending to preserve these, also come within their objectives. This role, however, can only be fulfilled if they provide the opportunity for gaining experience, relaxation and studying for as many people as possible. Tourism can offer extremely important assistance in developing an attitude capable of recognising, appreciating and wishing to protect these environmental values. However, only activities carried out by the visitors may be established or developed in the national parks, which do not harm the protected values significantly. Therefore direction and checking of visitor activity is indispensable.

Within the framework of the article we present the main items of attraction of the DINP, together with the national park as a target area for tourism. We survey the tourist activities characteristic of the area, disclose those effects endangering the values, and examine what the national park has done, and with what success, in the interest of protecting and presenting the attractions, and for shaping the attitude of visitors. Finally we call attention to the problems obstructing the development of friendly tourism and outline the main principles for their solution.

### Value of the DINP

The DINP, which is positioned to the North in close proximity of the Capital city, was established in 1997

as one of Hungary's newest national parks. It covers 60314 hectares, of which 21410 ha (35.5%) is a highly protected area. Besides the fact that it contains as a unit, the Danube Bend, the valley of the Danube breaking through between the Börzsöny and the Visegrád Mountains, the area being designated as a meeting point of river valleys, mountain chains and plains, provides other individual landscape values. The richness of geomorphological, hydrological, botanical, zoological and cultural history values justify its being declared as a protected area.

The region is dominated by medium mountain ranges of varying petrography and relief construction (Figure 1). The *Pilis* originating in the Triassic period is characterised by barren limestone and dolomite slopes. Due to the carst development it hides almost 200 caves, of which 12 are strictly protected. The plateau of Pilis-tető (757 m) carries the highest point of the entire Transdanubian Mountain Range. The andesite and pyroclasts of the Visegrád Mountains double caldera, rising on the right hand bank of the Danube, were developed during the volcanic activity taking place in the Miocene. Deep valleys and ravines make its area variable. The mountain range's andesite agglomerate „pyramids and towers” are of captivating beauty, which was formed jointly by the wind, frost and water. The Pilis, Visegrád Mountains is a biosphere reservation, also registered internationally from 1981. The andesite, andesite-dacite volcanic complex of the *Börzsöny*, reckoned as one of the county's most close-ordered mountain ranges is similarly a reminder of the Miocene volcanic activity. From the edge of the central caldera,



Figure 1. The area of the DINP. Source: The Pilis and the Visegrád Mountains, Tourist atlas & guidebook (2001).

protruding up from its surroundings, a wonderful panorama is opened up onto the mountain range, divided up by valleys and covered by forests.

The Danube bordering on Slovakian territory and its tributary the Ipoly, are dominant from both the hydrologic and landscape points of view. Leaving the Visegrád-strait the Danube widens out and then dividing in two encloses the *Szentendrei-Island*. The about 31 km long and 2–3 km wide island is a flat area scattered with sand mounds. In the *Ipoly-valley* the improvement work initiated by Slovakia was made difficult by legal border questions, due to which the DINP was able to put an “almost untouched” flood area of about 2000 ha haunted by marshes and mort lakes, under protection. This river-stretch accounted as a significant route for migrating birds in early spring, was registered as Ramsari Territory in 2001. The clear, abundant water streams of the Börzsöny, together with the 300–350 springs feeding them, represent important hydrologic values. Among them more than forty have sources more than 600 m above sea level.

The national park’s vegetation is extremely varied. The proportion of forestation is 80–85%. Besides the

large extension of shrubs and hornbeam-oak groves, the extra-zonal associations display greater variation. The mixed carst forest characteristic of the Transdanubian Mountain Range reaches the limit of extension to the east in the Pilis, but at the same time the hare’s tail grassy beech groves starting at the Visegrád Mountains extend this far. The black-cherry carst-shrub woodland association is spread over the southern rocky slopes; the soft-stem Hungarian Thistle is characteristic, but the Pannon ferula, surviving since the ice age also exists here. All of this is supplemented by the vegetation communities, characteristic in the Ipoly-valley’s watery habitats. The meadow clematis is the decorative plant in the Ipoly’s catchment meadows, but botanic rarities are also hidden in the alder fen woods. The Börzsöny is the limit area for extension of a series of species. In its flora, the protected orchis, iris and gentian species are present in greater numbers, while other rarities (alpine rose, ophioglossum, rock-fern, etc.) are only known to occur over a few square metres.

The area’s fauna is also variegated. The steppe meadows are the habitat for unique orthoptera. Numerous amphibious and reptiles (e.g. speckled salamander, pannon lizard), together with several shrew and dormouse species obtain protection in the DINP. Occasionally the lynx shows up in the undisturbed forest, while the otter can be found beside the waters. The fast flowing, gravel-bedded water in the Danube Bend is the habitat of endemic snail species (e.g. shelled-snail). The most valuable member of the fish fauna is the petényi barbell. Among the bird species, the strictly protected fallow eagle, lanner, water ouzel, bee-eater, secretary bird and white-backed woodpecker are worth mentioning. The caves and deserted mine shafts are habitats for rare bat species.

The DINP is extremely rich in cultural historic values. Among these are the bridge and watchtower remains from the Roman period, the Visegrád palace and castle of the middle ages, the Börzsöny fortresses (e.g. Drégely, Nógrád’s fortress), together with the village museum at Szentendre, preserving the traditional architecture values.

### The national park as a target area for tourism

Due to its positioning the DINP is not sought out by tourists mainly as a preservation area. This is reinforced by the questionnaire survey carried out among tourists in 2001, according to which only 4% of the visitors came to the area because it is a national park (Marton-Erdős et al. 2003). It is also an important circumstance that the majority of visitors (~60%) only came for a one-day trip.

The DINP territory is partly identical with the outstanding holiday district of Danube bend; on the other hand by it’s coming within the recreation zone of Budapest with a population of two million. This is also reflected – the Danube Bend is “overrun” by people in their second homes – by the survey data, according to which the proportion of those from the

Capital City was 67%. Besides this, naturally the free time activity of the local inhabitants in the holiday area is also directed towards the protected areas. Resulting from all this it is very difficult to identify the type of visitors to the national park. Assessing the amount of tourist traffic can be done in various ways. One form of basis is offered by data of the commercial accommodation in the holiday district. According to this, the 161268 persons accommodated in the commercial units with space for 9555 persons, spent a total of 345002 nights as guests (Tourist Statistics Journal 2001). In regard to the owners of second homes coming within the recreation district, unfortunately we can only refer to estimations, according to which their numbers at summer weekends is three times that of those living in the area (resident population: ~ 100000). At the same time, the number of visitors to the DINP territory can only be estimated from the questionnaire survey carried out among the visitors. The data of visitor traffic from the park's main Börzsöny reception centre (Királyrét) are much more reliable, because the tourists staying there all visit the national park as well, without exception. According to the statistics 957 persons spent 2158 nights as guests at Királyrét in 2003. The numbers taking part in "paid" programmes can similarly be followed up precisely. 2901 persons took part in the guided tours organised by the Börzsöny reception centre in 2003, while about 400 people went to see the exhibition held in the Pilis centre (Esztergom). As opposed to the foregoing, it is more difficult to establish the numbers visiting the study-paths, various tour routes or skiing centres. For example, according to the nature protection wardens about 2000 visitors a year walk along the Kis-Strázsa-mountain study-path in the Pilis.

The lack of knowledge of the numbers and types of visitors makes it extremely difficult to regulate the activities of the visitors.

### The effect of DINP tourism on the environment

Tourism can influence the environmental condition of a given target area in many ways. The *traffic* is an extremely significant environment contamination factor, therefore the knowledge and regulation of the means of transport used by visitors in the protected areas is particularly important. The development of a public transport network around the national park can be assessed a positive due to the close proximity to the capital city, thanks to which, according to the surveys, about 48% of the visitors travel to the area by public transport. Similarly it can be said to be favourable that the three overhauled lines of the traditional Börzsöny mountain small-gauge rail network, are promoting environment friendly tourism within the national park area. Besides substituting for car traffic, the small-gauge railway lines also represent an attraction.

Development and operation of the *tourist infrastructure* similarly places a heavy load on the environment. The most conspicuous effect can be put down to the building of second homes. Since the second half of the 19<sup>th</sup> century, the Danube Bend has progressively become a favourite holiday district for residents of Budapest. The landscape devastating expansion of family holiday homes became a serious problem from the 1960s. Besides the increase in built-up area, the insufficient infrastructure of the houses also represents a big problem. Due to all this, the total value of protected areas adjacent to the holiday home district can today be regarded as endangered.

The tourist infrastructure development incompatible with nature preservation, is sometimes successfully prevented (e.g. construction of the Dömös-Dobogókő chair-lift), sometimes is obliged to be accepted by the national park (e.g. the therapeutic complex being built beside the Danube close to Visegrád).

Resulting from its endowments, the DINP offer numerous opportunities to its visitors for relaxation, sport and study. The various *tourist activities* represent many dangers to the environment. In the following we review in tabular form the characteristic tourist activities relating to the area, the negative effects produced by these and the methods applied up to now for their elimination (Table 1.).

Although, it was not indicated in the table those omitting against the rules formed by the national park may be punished by spot-fine, offence measures or natural protection fine.

Let's consider the most important problems highlighting certain activities. Questionnaire investigations revealed that visitors aim is nature trailing when visiting the DINP. The Börzsöny, Pilis and Visegrád Mountains are the most exposed parts of the country regarding nature trails. Even in some places (e.g. Nagy-Hideg hill in the Börzsöny) rangers consider the system of nature trails to be denser than the optimum. The greatest problem is caused by the disturbance of crowdedness associated with nature trailing along the most popular routes. To avoid this for example certain fortresses have to be missed during the fortress trails in the Börzsöny as these are found near the nesting places of imperial eagle.

In theory considering sporting activities in nature, the technical sports (pleasure flying, hang gliding, cycling, motor sports) are subject to permission but nature rangers consider these activities as inconsistent with protection tasks. The most problematic site in Hungary in this respect is the strict nature reserve of the Pilis-tető that on the one hand is the habitat of the Pannon ferula while on the other hand it is one of the best starting points for hang gliding in the country. The endangeredness of the species is indicated by the highest value, 100000 forints, of intangible value. Hang gliders and gilders occupy the area since the 1960's. Their activity resulted in that the



Table 1. Tourist activities in the DINP, the dangers produced by these and the methods directed towards their prevention.

Tourist activity	Dangers	Methods of prevention
Touring, hiking	Too congested touring path network, pedestrian path erosion, disturbance, littering, crowdedness, collection of natural values, straying from designated route	Construction of paths, path repositioning, terminating paths, positioning litter containers
Cross-country races/competition tours	More and more competitors, littering, trampling, disturbance	Subjection to permission (inspection of routes, taking account of frequency of competitions)
GPS navigation competition	Increase in passenger car traffic	Forbidding the activity
Cycling	Crushing, breaking vegetation, soil erosion	Subjection to permission, designating cycle tracks
Car and motorcycle sport	Crushing, breaking vegetation, soil erosion, noise, air pollution, disturbance	Subjection to permission
Hang-gliding, sail-planing	Trampling	Forbidding the activity
Rock climbing	Damaging rock faces, crushing valuable plants, disturbing nesting places	Subjection to permission
Skiing	Landscape dissection, division of habitats, overloaded capacity, trampling, soil erosion	Forbidding snowballing, forbidding vehicle traffic, permission for sites at the development
Horse riding	Trampling, lack of routes	Keeping the traffic on designated routes
Caving	Damage to formations, excess growth of algae, disturbance	Visits subject to permission with guides, restricting group numbers
Water sports	Trampling vegetation, communal pollution, damage to water life	Subjection to permission, designated camp sites, restriction of group numbers
Fishing	Trampling vegetation, communal pollution, damage to water life	Subjecting the activity to permission, dismantling of non-permitted stages
Hunting	Too large stock of game, prevention of rejuvenation development, shooting of protected animals	Conciliation of interests

bush-wood retreated to the edges so the system of licensing was substituted by prohibiting.

Several problems are associated with water sports and fishing. One of the problems is associated with the weirs of valley reservoirs for flood protection and recreation. As these close the way of the fish that can not reach the mountain streams that present their spawning place. The lack of instruction that would rule the infrastructure construction along the coasts is also a problem.

#### The “view-forming” activity of the National Park

To avoid the above mentioned problems and to form environmental awareness and ethics the national park staff is keen on presenting the values of the area by

different exhibitions by teaching and amusement programs and by trails.

When establishing exhibition centres, study paths and cultural values the main goal was to expose characteristic values so that visitors are driven to the marginal areas unloading the inner strict nature reserves.

Among exhibition centres the Királyrét Exhibition Centre provides both accommodation and programme. Visitors can spend one hour or one week with field programmes (studying wetlands and plants, studying animal traces, animal watching day and night, visiting local historical memorials), craftsmanship lessons (felting, origami, stringing of beads, weaving), slide and quiz shows and guided tours.

The exhibition of the Esztergom Exhibition Centre shows the natural characteristics and protected values of the Pilis. Walking on its study path visitors may see these values at their natural occurrence: sand martins nesting in loess walls, colourful bee-eaters, spring pheasant's eye meadows and the view from the lookout on the top of the hill. 1–3 hours long tours may be asked depending on the interest of the visitors.

In the Visegrád Hiking Centre maintained by the Pilis Parkerdő Company forest culture house, game preserve, and playing ground can be found. In the forest culture house children can take part in nature protection programmes or they may join the nature protection camp operating on the hill for a week.

The other study path in the national park represents a flood-plain area and it is maintained by a fund. The botanical-zoological study path represents a remnant of the flood-plane forests following the Danube near Vác. The most valuable parts of the forest are frequently covered by water therefore a board path is laid down. Bird watching is also a possibility at the site. Visitors may ask for a guided tour. Groups are recommended not to exceed 20 people.

Further exhibition sites are also planned to be established at the margins of the national park. To implement this, a 13<sup>th</sup> century monastery was restored and an ancient glassworks was exposed and Drégely fortress is also planned to be reconstructed.

At the DINP future is planned as to invisibly drive the visitors. Experience proved that prohibiting is often useless and it triggers offence from the visitors. Undisciplined visitors force the staff of the national park to exclude endangered values from exhibition and to provide access to the displayable values.

### **Outlining the factors impeding the control of visitor activity**

Before we outline the directives to be applied in the future for controlling visitor activity we present the specific problems that make the provision of the conditions of friendly tourism harder.

#### **1. The position of the national park makes implementing the tasks harder**

As the DINP involves a densely populated well infrastructured and heavily industrialised area of Hungary the environmental harms affecting the territory are multiplied. Therefore the protecting of this conflict loaded environment requires great effort (Bodnár 2000).

#### **2. Controlling visitor activity triggers problems in the traditional tourist areas**

The area is situated close to Budapest. Furthermore, there is a great overlap with the important recreation district of the Danube Bend that is regarded as the 3<sup>rd</sup> most visited tourist resorts in the country. Thus recreation activity within the park started way before it received protection. According to the

experiences controlling such activities that were allowed before is much harder.

#### **3. The National Park Directorate is not permitted to carry out profit oriented activity**

As a non-profit institution the primary task of the national park is to act as an authority and it should not carry out profit oriented activity. Therefore the park provides certain services (tour guiding, accommodation, exhibition) but other tourist agents compile the programme packages. This has two main disadvantages: first, the Directorate can not influence what should be covered by the programmes. Second, a major income is released. Therefore, the national park is not fully interested in the development of tourism however, the conditions could enable further tourist activities (village tourism, vine tourism, bird-watching).

#### **4. Profit-oriented forestry and hunting activity is carried out in the area of the national park**

The self-owned area is only 8 % in the DINP! The majority of its area is maintained by profit-oriented forest and hunting companies. The harms coming from silviculture and game management affect the wildlife of the forests. The talks between the representatives are not successful in every issue yet.

#### **5. Zoning of the DINP is not completed yet**

Development of eco-tourism should be based on the zoning of the national park. Acceptation of the zoning is delayed due to the interest of the forestry. However, it is nonsense to start the development without this zoning.

#### **6. No study investigating the effects of visitors is available for the DINP**

The lack of knowing the number and structure of visitors makes harder not only the control of visitor activity but planning as well. Further problem is the lack of report on the environmental effects of visitor activity. It is not possible to determine the loading capacity of the area without these.

#### **7. Lack of manpower**

Lack of staff also reduces the effectiveness of the Danube-Ipoly National Park Directorate. Therefore in both eco-tourism and education only the most important tasks are carried out. No energy is available for detailed planning and major development.

### **Tasks**

The control of visitor activity and the application of the measures for this is not planned and occasional in the DINP. Without solving the already mentioned problems no improvement is expected towards a higher level of control. Further, the national park is still ahead of several tasks: e.g. the operation conditions of certain activities should be completed and the behaviour codex of the visitors should be com-

piled. There are tasks in the field of education as well. This is proved by a questionnaire study revealing that 41 % of the asked tourists know nothing about the park and only 56 % of the hikers know that they are within a national park (Benkhard 2001)!

Co-ordinating nature protection and friendly tourism is not imaginable without co-operation of national parks, visitors and local residents. Realising well operating co-operation is beneficial for all participants. This is proved by a farm operated by a local entrepreneur. This interactively exhibits traditional occupations and local production forms that are nearly forgotten. Visitors are attracted by leaflets produced together with the national park.

For the DINP it would be possible to join the PAN park system. The PAN Parks programme would give the possibilities for constructing study paths and bird-watching towers and for reinforce exhibition centres, etc.

Regarding the above mentioned facts there are two ways for the DINP: preventive protection and control of visitor activity or no control but more cost consuming restore of the environment.

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