Do we need mapping of tourist flows? Lessons from Börzsöny Mountain

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Introduction

Visitor management and research on carrying capacity in nature parks (natural areas) requires good data about visitors (e.g. numbers, flows, habits and knowledge (Rupf, Wernli and Haller, 2008)), but the Hungarian national parks typically do not collect this type of information.

The main reason why outdoor recreation counter systems are not used is the high costs. Entry to national parks and protected areas in Hungary is possible from multiple directions, therefore is not possible to assign a few points using counter system. The rationalization of the touristic pathways had not been fulfilled at the designation of the protected areas, because the touristic infrastructure had formed earlier and the demands of hikers were ignored in most cases (Benkhard, 2004). Recently manual GPS units, which are often used by hikers are becoming increasingly popular in Hungary. However, information from these units do not provide complete information about visitor traffic (i.e., GPS data do not reflect the number of the people in the group).

The situation described above is also in Börzsöny, which is part of Duna-Ipoly National Park. This park is becoming busier because of its romantic landscapes and proximity to the capital (50 km). There is not constantly populated areas in the middle of the mountain (so called Central-Börzsöny) because of its natural conditions and the high proportion of privately owned areas in the past. The built infrastructure, along with most of the area's economic activities are connected to the tourism. This is a unique among Hungarian national parks. National park management, which has often acted against the interests of tourism providers, forest management, as well as hikers require above mentioned data for the formation of acceptable visitor management. So we made the visitor flowing map of the mountain.

Methods

This study focused on hikers and visitor counts were made by volunteers (mainly university students). We chose the location of counting points so that every hiker that went to Central-Börzsöny was counted, which resulted in a total of 14 visitor counting points. We made this measurement from 8 am to 4 pm, 5 days at the weekends and 3 days on weekdays. Count data included the place and time of the count, the number of the hikers and the (planned or completed) route which was described by formal trail markers (Hungarian Standard, 1988). We asked the visitors about their route before the excursion (mostly in the morning – it can be only a planned route) or after their walk (completed route, generally asked in the afternoon, those tourists who started their hiking earlier than 8 am). Thanks to this we do not calculated one hiker twice.

Every route segment was assigned the number of the tourists individually who use that route. We represented visitor flows by using different thickness of stripes on a map (the greater flows are represented by greater stripe thickness). The flowmap was created with the open source software Quantum GIS, based on free online data of SRTM, OpenStreetMap. We also received hiker path data from turistautak.hu, which is a professionally edited hiking online database.

This paper shows a part of the results of the larger study. The study period of this part was 2 days in an autumn weekend in 2010. The map (Figure 1.) shows only that marked tourist pathes of the Central-Börzsöny, where at least one visitor was counted. The five classes clearly represent differences in visitor density.

Results and conclusions

The analysed weekend 801 visitors passed through the counting points. Willingness to respond was good (80%), but the data (described by trail markers) were inaccurate in many cases. People who answered inaccurately came from southern areas. We realised that several people set off on even longer trips (20 km) without a map or plan. According to previous information, south areas (close to the capital) which can be reached easily by car and public transport (bus, train) are the busiest starting points. The most frequented points are the highest peaks of the mountain, where a look-out tower (e.g. Csóványos, 261 visitors), tourist house (e.g. Nagy-Hideg-hegy, 289 tourists) and memorials (e.g. Foltán-kereszt, 82 hikers) can be found. The number of hikers in the groups varied between 1 and 50 persons. The total length of the routes used by hikers during the study period was 74 km.

The data of the visitor flow map are basic information for the follows:

- Using the map overlays method (Payraudeau and van der Werf, 2005), these data compare with data of other layers (e.g. slope, soil types, botanical map, tourism infrastructure, categories of nature protection) are the critical areas detectable.
- Help determining the necessary and potential bypasses.

We cannot solve this latter aim without the knowledge of the individual opinion of hikers'. For this reason we examined this factor with questionnaires. Hopefully the results facilitate for the management to take interventions which are acceptable to all.

The research was supported by the TÁMOP- 4.2.2/B-10/1-2010-0024 Hungarian Found.