



Monitoring System of tourist traffic (MSTT) in Stołowe Mts. National Park and its application for tourism management

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Tourism activity is constantly increasing in national parks in Poland, including protected areas in the mountain regions. Among them Stołowe Mountains National Park (SMNP) is the third most popular mountain national park in Poland (after Tatra NP and Giant Mts. NP). The Stołowe Mts. are located in South-Western Poland, in the Sudetes on the Polish-Czech bordeland. The SMNP protects the only example of mountains presence of nearly flat-lying sandstone beds. The overall morphology of the area is of stepped tableland type.

The Monitoring System of tourist traffic (MSTT) was developed to recognize and characterize tourist traffic in the protected area and further to limit its negative impact to landscape. The MSTT was running over a year-long time and collected two types of tourism load data in the SMNP. The real-time visitors data were acquired from 38 infrared sensors installed on the hiking trails at the SMNP entrances. This makes the study unique in order of number of infrared sensors used for visitors monitoring in the Polish national park. The visitors data collected includes hourly, daily, monthly and annual reports, with demarcation for incoming (IN) and outgoing (OUT) visitors, as well with total tourism loads counts for each trail (IN+OUT). Each day there were approximately 912 automatic measurements recorded in the SMNP. The MSTT was supplemented by survey research conducted on hiking trails. The research method used was a diagnostic survey in the form of a questionnaire interview which composed of 18 questions. Those questions were related to the motivations and preferences of tourists, for example means of transportation used, purpose of the visit, its duration and frequency, visited places, type and location of the accommodation and catering base that was used, and the assessment of the tourist offer of the region.

According to amount of SMNP entrance fee sales the Park was visited by 480,000 tourists. The results of our monitoring revealed that in fact SMNP is visited annually by almost a double amount of visitors. Sensors captured almost 850,000 entries (IN) to the SMNP. Such dramatic increase in the visitors load in the Park might lead to an uncontrolled mass tourism, which thereafter might cause negative impacts on the natural and cultural landscape of the protected area. This fact might further lead to the conflict between the need for protection of the SMNP and its availability for tourism. The study proved high applicability of infrared sensors and field survey for complimentary tourism monitoring in the protected area.