

Gathering information about leisure and recreational activities in an open landscape setting

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Introduction

A non-profit organisation, which is responsible for the conservation of a protected area, has commissioned the University of Natural Resources and Life Sciences, Vienna with the collection of data about visitor activities in an area, which is particularly valuable in terms of nature conservation. The data collection should take place within the framework of several master's theses.

The study area located in the southwest of Vienna is a popular recreation area for the Viennese as well as for the population of the adjacent municipalities. The centre-piece of the study area constitutes a spacious semi-aridgrassland, which is an open landscape setting without any clear access points or restricted walkways, and the whole grassland can be used for recreational activities. The openness of the area allows an extraordinary view over the City of Vienna and the southeastern Vienna Basin. Besides this panoramic view, main pull factors for the visitors are the possibilities of hanging out, having a picnic in summer or watching a population of the European ground squirrel as well as good wind conditions for kite flying.

Information about visitor numbers as well as the different types and intensities of recreational activities the visitors practice on the semi-aridgrassland had been the main focus of the monitoring. Besides the allowed leisure and recreational activities, also the prohibited practices and behaviours, such as driving on the semi-aridgrassland by bike or walking dogs without a leash, should be captured.

Material and Methods

Visitor monitoring mainly takes place in entrance areas and at trail junctions (Henig, 2013). So far, there is little recording of people in open landscapes. In contrast to entrance areas open areas invite people to linger, look around and move slowly. Due to the fact that continuous counting, as often used for waypoints, does not lead to the desired results, the "point count" method has been used, which is commonly applied by ornithologists. With the "point count" method an observer records all information seen from a single point for a standardized time period and in a defined section (Suarez-Rubio & Thomlinson, 2009).

To survey the visitor numbers and activities a time-lapse video camera (type: Brinno TLC 2000) documented the recreational use in the study area from

dawn until dusk over a period of one year. A time interval of 15 minutes per hour was chosen (alternating weekly), in which every five minutes all people and activities in the camera's field of view were documented (this means three samples during the 15 minutes interval) and extrapolated to hourly values. To verify the results, the data were compared with visitor data collected in entrance areas with time-lapse video cameras.

Results

From April 2013 to March 2014 all in all around 115,000 visitors were detected based on the extrapolation of visitors counted during the 15 minutes intervals. Over the course of the year the highest visitor frequencies were captured in October 2013 and March 2014. The small visitor numbers during summer probably result from the climatic conditions in the study area at this time (very hot, little shadow, no water) as well as the holiday time. The evaluation of the visitors over the week showed somewhat uniformly distributed numbers on working days and a considerable increase at weekends, especially on Sundays. Leisure and recreational activities observed were walking with and without dogs (85%), hanging out (6%), having a picnic (3%), kite flying (3%), mountain biking (2%), Nordic walking (1%), jogging and sledding (> 1%). Most people stayed on the grassland (78%), except for the mountain bikers of which 91% used the available paths. A precise statement about the proportion of dogs kept on a leash cannot be made because in most cases (76%) it was not identifiable. But most dogs kept close to the owners (85%).

The comparison of the data with the data collected in the entrance areas showed a divergence of the extrapolated monthly visitor numbers between 1 and 12%, with the biggest divergences arising with increasing visitor numbers (higher visitor numbers using "point count" method).

Discussion and Conclusions

Video recordings are a beneficial data source for gathering information about visitors and their activities. There are, however, some challenging aspects for the evaluators, especially in open areas. Due to the far distance between the camera and the visitors, the correct identification of activities (e.g. carrying a sleigh or a dog, dogs on or off leash) as well as individual-related information such as sex and age was difficult. The data quality was also influenced by the current weather and light conditions (e.g. poor visibility caused by backlight, fog, intense rain or a snowy camera lens). Furthermore, the used "point count" method didn't allow determining the total number of visits in the study area. Persons captured in the count unit were possibly counted again in the following sample units if they moved very slowly or paused for a while. Therefore, the captured numbers of visits are rather approximate values than total numbers. The same applies to typically ongoing activities such as having a picnic or kite flying; thus the quantity of these activities can probably be overestimated. To evaluate the results you could e.g. cross-check the visitor numbers with data from other monitoring points in the area such as entrance areas as done in this project. In general, the "point count" is a method for providing an overview of the temporal (season and daytime) and spatial distribution of the visitors in

open landscape settings as well as their activities and behaviour. To compensate the disadvantages mentioned above, a monitoring design that includes a mix of methods is useful/should be aimed at.

The evaluation of the collected video material was labour-intensive and time-consuming, especially because a lot of different aspects were documented. Automated image interpretation systems, which are still in development, could help to reduce the labour costs and make video monitoring more feasible. In the future, the necessity of appropriate methods for gathering information about leisure and recreational activities in open areas will still rise. Therefore, an increased use of methods from other research domains such as cultural, social, behavioural and economic science is thinkable (Erdmann, 2000, cited in: Hennig & Laube, 2005).



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