Recreational forest management based on visitor monitoring in Kampinos National Park

AGATA CIESZEWSKA  
Department of Landscape Architecture, Warsaw University in Life Sciences – SGGW  

Abstract: Recreational forest management based on visitor monitoring in Kampinos National Park.

The paper presents the result of visitor monitoring of Kampinos National Park provided by counting and on site face-to-face questionnaires in warm, sunny June weekend in 2005. The park is located in the Warsaw Metropolitan Area and function partly as an urban forest. The monitoring is presented in the context of contemporary trends in European recreation management. Collected data with important group of bikers and high concentration of visitors movement brings threat of ecological values and need new approach to recreation management. Kampinos National Park recreation management, particularly needs gates to forest located in buffer zone to stop the biggest group of visitors and protect interior of the Park.

Key words: visitor monitoring, visitor counting, recreation management, Kampinos National Park.

INTRODUCTION

Monitoring of Polish national parks is concentrated mostly on natural features and threats. Tourist flow is pointed as a tool for protected areas planning but mainly by monitoring of national parks is understand as an examining the state of the environment based on long term observation. Among Polish national parks the most popular method of tourist flow monitoring by counting of access permits and tickets. Monitoring of tourist flow is opposite to systematic monitoring rarely carried out (Muhar et al., 2002). The most important question based of tourist flow monitoring is to find out tourist capacity of the area and to minimize conflicts among different group of users, but the main goal is to improve recreation management and to plan optimal network of infrastructure and service. Sievänen et al. (2008) suggest also the role of recreation monitoring to recognize cultural differences across countries, regions and local areas and particularly urban perspective. Among European countries only Denmark point need for recreation information (monitoring) as a part of National Forest Program, but most of the countries provide on site monitoring mostly face – to face questionnaire (Arnberger, Grant, 2008). Authors of cross European inventory of monitoring (Sievänen et al., 2008) indicate, that still data collection is rather non standardized approach with non regular site specific studies, than standardized approach which on national level is reported only from Denmark, Finland and United Kingdom. Often recreation monitoring concentrate on areas with particular needs for recreation management as remote areas as national parks and urban forests (Sievänen et al., 2008).
Also in Poland there is no national wide survey and recreation monitoring studies are not standardized and data collection are related mostly to national parks.

In 2003 only one national park (Magurski) declare the number of visits monitoring. Three others reported monitoring of degradation of trails (Bieszczadzki, Góry Stołowe, Karkonoski). Currently access permit or tickets counting is providing by 16 of 23 Polish national parks – 8 in all the park and 8 in selected areas. Other national parks are out of this type of observation and the number of visitors can be only assess by indirect methods as observation of trails damages. Automatic observation is a new technique that is currently implemented in the first Polish National Park (Tatra NP). First group of parks can present realistic tourist flow; the second brings not verified data. The main problem related to this topic is growing impact of recreation in national parks located close to metropolitans. These are also the most difficult sites to provide counting of visitors. First, because the number of entrances to the Park, particular in the city border. Next, there are some illegal entrances difficult to monitoring. Also management of this type of national park in the aspect of recreation is a challenge. Main problem is concentrated on conservation needs versus urban recreation supplies. Nearness of big city brings also more stress situation as urban pressure for the buffer zone around the park, and in next step transforms the park into everyday recreation destination point in the contrast to holiday or weekend recreation more typical for more distant national park. This state requires special approach for the strategy of tourist dispersion within the park provide by recreation management.

The Kampinos National Park was the site of monitoring flow investigation in all park entrances to check current assessing of visitors, but also to find out more realistic number of visits, visitor flow (hours, directions), activities and density. This was the base to start the discussion of Kampinos National Park recreation management. The study organized and leaded by the author was provides in the cooperation of Kampinos National Park.

STUDY AREA

Kampinos National Park is one of the biggest national parks in Poland, located on the north west border of the Warsaw. The location close to the Vistula valley makes the site one of the most important element of Polish ecological network. Nearness of Warsaw – as a part of Warsaw Metropolitan Area makes the park one of the main recreational base of city inhabitants (1.8 mln). Kampinos National Park covers 385 square kilometers with over 35 entrances and few transit roads crossing the Park. These conditions do not help to manage visitors flow. Longitude of signed tourist trails are over 360 km and 55 km are biking paths (plus 145 km of biking trails surrounding the Park). There are 15 forest parking places and 6 grasslands with recreational facilities, all located around the Park boundaries.

Simultaneously, Kampinos National Park have been recognized by UNESCO as the Biosphere Reserve, it also joins European Ecological Network NATURA 2000 (area code PLC 140001) so its ecological value have been proved.

Visitors of the park have been estimated as 1.000 000 people a year, and the real intensity of visitor flow in the
Park have been assessed so far only on a few tested areas (Bordas-Prószyńska et al., 2005). These monitoring was conducted during weekends year round but only in selected sites. The method of visits monitoring was related to cars observation on park lots around the park. There are no documented studies provided in all the park entrances.

METHODS

The monitoring of Kampinos National Park was conducted by combination of different techniques applied for visitor monitoring, which is recommended (see Muhar et al., 2002). The first method was the personal observation as the base for counting. That was provided in two days of 2005. This short-term visitor counting was complemented by interviews and analysis of the visitors' routes. The counting conduit by researcher of the Józef Piłsudski University of Physical Education in Warsaw (Bordas-Prószyńska et al., 2005) was related only to few points tested mostly each time in different hot spot place. This short-term survey was first counting, that include all 35 of Park’s entrances, from 9.00 a.m. to 18 p.m. (Fig. 1.). The term of the counting was chosen to catch one of the highest amount of expected visits – mid of June – weekend before holiday. Interviews before the study indicate that in July and August Kampinos National Park is less popular as the destination point for visitors, there were two main reasons of this situation – visitors prefer more distance area for long term recreation, and the problems of insects (the park is covered by vast marshy forest). In both days of the counting (11–12th of June) had optimal weather condition: temperature about 20 Celsius degrees, no rain. Field measurement cover not only number of visitors but also: age structure of visitors, type of visitor mobility: pedestrians, bikers, horse riders and also dogs presence (on/without leashes), as well as number of cars in parking lots.

The questionnaire helps to find out additional information about the visitors as: main reason of the visit, type of access, preferable place of recreation, time of the visit in Kampinos National Park.
Park, type of activity and also quality of recreation service – supply of tourist infrastructure. The total number of questioners was 257.

RESULTS

Visitor characteristics

Over 68% of visitors are Warsaw inhabitants, and next significant group (25.5%) are local residents. This point out how important is Kampinos National Park for Warsaw inhabitants. Most of visitors reach the Kampinos National Park by car (51%) or bike (28.4%). Only 7.6% got to the Park by feet, that is related to local residents, and 11.7% declared arriving by public transport, that indicates poor access to public transport from Warsaw.

Over 12.000 visitors had a trip to Kampinos National Park during two days of the June weekend, 51.3% of them were pedestrian while almost half of visitors were bikers (48.3%). Among tourists the biggest group declared park visiting few times a year (27.5%), similar amount of people make trips to the park regular each week (25.5%), third group pointed out visits frequency few times a months (21%). That means that most of the visitors are the same group of people. Only 9% indicate park visit as the first time or rare – once for few years.

Visitors spent in the Kampinos National Park mostly few hours. Predominant stay is declared as few hours (43%) and a little shorter 2–3 hours (37.5%). Relatively small group of visitors spend little time (11.7%) – about 1 hour in the Park, and also long visits, when the tourist are all day in the Kampinos National Park (5.8%).

Tourist concentration in Kampinos National Park

Spatial concentration of visitors had been analyzed by two methods. First, based on monitoring – counting points, second method was face to face questionnaire with the indicating of preferable areas within the park.

Monitoring demonstrated, that the most favour part of the park are 3 regions. Western with neighbourhood of Dąbrowa Leśna, where on 3 counting stands on the beginning of 3 tourist trails 11.7% of all visitors had been noted and Wielka Opalen with similar amount of visitors (10.15%). These sites are the closest to Warsaw (in the distance of 15 km or within Warsaw border as second place), with good public transportation system – direct buses to the centre and communication with different part of the park as a nodes of tourist trails, good infrastructure as picnic area, shelter, parking lot. There are also possibilities to take loop trail and be back in the same place, preferable particularly by those that came by car. This kind of possibility is rather rare in Kampinos National Park. Similarly to other Polish tourist trails they had been marked up for long distance tourist for all day hikes.

In general 5 of 35 counting stands concentrate 46.7% of visitors. 3 others then mentioned before are rather far over 25 km from Warsaw as Palmiry, Pociecha (25 km) and Roztoka (36 km). To all 3 places it is not possible to get by public transport, but they are popular nodes of tourist trails. Palmiry is also one of the most important historical place in the Kampinos National Park with cemetery from Second World War, while Roztoka is well known as so called heart of
Kampinos Forest with well-liked picnic area, nice, forest play ground, buffet, parking lot and one of the most spectacular interpretative trails with groups of enormous old oaks. These 3 places are located not on the border of the forest but deeply inside, but with relatively good roads. The most rare visited are western part of the Park – some entrances are distant from Warsaw as far as 80 km, mostly without direct public transport. There are some differences between pedestrian and bikers. In both groups the highest values were noted in Lipków, Truskaw, Palmiry, Wielka Opalen and Roztoka (in all of the places with over 5% of pedestrians and bikers). One of the highest amount of tourist were observed also in Wólka Węglowa (western region) and Granica (central region). Bikers besides similar to pedestrian sites had been noted in Posada Sieraków and Pociecha.

Questionnaires have been collected even in the park independent of tourist movement intensity. Visitors pointed out the most preferable areas are regions of Lomianki and Izabelin – the terrains located the nearest to Warsaw – western part of Kampinos National Park. This region is clear more preferable then others – indicated by 39.5% of visitors, that is prove by counting as well (the same the most visited areas are located there). Next areas are mentioned above Palmiry and Pociecha region (19.3%), less central – Roztoka region of the Park (13.5%). Over 20% of visitors used to travel all around park without preferable area, or each time chose different trail.

Only less then 50% of visitors declare using of tourist trails, this fact can be explained by fact, that during short visits visitors take well known path, mostly walk one way and back and do not realize that use tourist trails. Predominate pedestrian trails users, less popular biking trails – in Poland pedestrian trails also can be used by bikers, so it is not clear for tourist separation of different activities. 7.5% declare that they not use tourist trails.

Trails using is also connected with evaluation of their mark up. Most of visitors assess trails positively as well or medium condition of marking up (65%), small amount only pointed bad mark up of trails (6.7%).

Tourist activities, motives and bothersome elements of Kampinos National Park

11 activities had been proposed in the questionnaire. The most popular was walking (34%) as a main goal of visit. Next the most popular activity is biking (26.9%) – also monitoring indicate biking as an important type of recreation with group of bikers as over 45% of all visitors. Among other visitors the most pointed out were nature watching and picnicking (Fig. 2).

The question about main motives contained 8 proposed answers. Visitors usually pointed nature nearness and landscape beauty (19.7%) as main goals of the park visit (Fig. 3). These prove high value of park nature. Much less visitors indicated good sport condition, and nearness for local residents (13% and 12.4%). Only small group pointed out an important visit motive presence of high importance protection form as national park, that demonstrate again high tourist value of the area not only the fact of national park existing.

Bothersome elements of the park had been listed in the questionnaire by 7 answerers. Most of visitors were glad to
the visit, only few tourists had been disappointed. Tourists complained mostly on recreation infrastructure as not enough amounts of rubbish dumps (30%), lack of resting areas as picnicking, shelters and also bad shape of surface. Less important at this point had been conflicts between different users also dog walkers. Surprisingly transportation to the park had not been indicated as bothersome.
DISCUSSION

The challenge of recreation management in urban forests was pointed out by different authors (Arnberger, 2006; Nagy, 2002; Janowsky, Becker, 2002; Weidinger, 2002; Sievänen, 2008). The study prove that Kampinos National Park is in many parts treated as an urban forest and activities observed during investigation present many similarities with other vast urban forest. Walking as a predominant activity of forest recreation is also reported by many results (Lindhagen, 1996; Guyer, Pollared, 1997; Roovers, Hermy, Gulinck, 2002), and the most important energetic activity is biking. Roovers, Hermy, Gulinck (2002) based on earlier European studies also point that the visit frequency has strong relation to distance from conurbation. Quite typical is also increasing transport to forest by cars. To compare results to other forest in Warsaw Metropolitan Area, the author provide monitoring of Chojnowski Regional Park – another vast forest recreation area for Warsaw inhabitants (Cieszewska, 2007) – some visitor characteristics are similar as increasing acclivities of bikers, frequency of visits with predomination of regularly each week or few times, similar motives as nature nearness and landscape beauty which in consistent with such strong concentration of visitors, private transport as a main way to get to the forest, lack of tourist infrastructure.

The first is bikers as an increasing group of visitors. Significant group of bikers gain almost 50% of visitors in Kampinos National Park but also in Chojnowski Regional Park. Up to know tourists do not pointed out conflicts of different users. That kind of problems are reported mostly form western European countries especially with crowding (Bell et al., 2007). Management in this context focuses on separate the most difficult group of visitors as pedestrians and horse-riders. Presented study did not report this kind of problem in Kampinos National Park, but probably it will appear soon when bikers start to be more obvious user on pedestrian trails. Contemporary Kampinos National Park is not prepared to this kind of challenge – pedestrian trails allow other type of user, and more aggressive activities appear as quads.

Next similar problem is concentration of visitors is the next problem, but with a little connection to conflicts between users. Overexploitation of tourist hot spots and too high concentration of visitors is noticed in few sites – these with good infrastructure (parking lots, picnic areas). For national park it could be a good strategy for recreation management. The problem is that Kampinos National Park is located within metropolitan area and it is used partly as urban forest. Lack of infrastructure as rubbish dumps and too little elements as picnic areas with the good system of tourist trails and demands as to other urban forest brings important ecological threats.

Arnberger (2007) underline that in similar national park to Kampinos National Park close to Vienna (Danube Floodplain National Park) sophisticated management approach is crucial to control the Park with propose to join surrounding area to provide kind of buffer zone around the Park to take some pressure and stop it before the more ecologically valuable areas. Transposing it to Polish example the peri urban area
around Kampinos national park is under strong pressure of new development. Last changes in Polish Nature Protection Act that eliminate legal buffer zones as a part of national parks need to be restore. Arnberger (2007) propose also interesting idea to propose different trails for tourist and for local residents by methods of special signed. The challenge for deconcentration and private cars pressure to the central part of the Kampinos National Park where are situated 3 of 5 the most popular sites is public transport or shuttle bus, which could take tourist without necessity to reach the centre of the national park by car.

CONCLUSION
The presented study was the first investigation that cover all Kampinos National Park entrances. Two methods of inventory brings first quantitative data – on site counting and qualitative information with more detail visitor characteristics and also their preferences, motives. Predominated age group of tourists both pedestrians and bikers are people in middle age as 25–55 old. In younger group 15–25 years old number of bikers is almost double then pedestrian and the opposite tendency is observed in the oldest group – over 55 years old. Most of children under 15 years old are pedestrians, but in this group there are also babies with parents and biking together with parents is not popular in Poland.

The visitor density per day in pre holiday weekend was assess as about 12,000 visitors, between 11–15.00, most of dogs were provided on leashes – hat means visitors understand the rules of national park visiting, visible is a lack of horses, but for most of riders the best time is early in the morning also during the week – with less possibility of conflict with other groups mainly bikers. Significant part of visitors are bikers – 47%. Their appearance is not direct related to biker’s paths. Visible group of cyclist use pedestrian trails as well – that is legal but brings some conflicts. Also 60% of dogs in number of 283 were walking without leashes, discord to the law in national parks. These aspects indicate rather low regulation acceptance among visitors. Distribution of visitors point out that only 20% of Kampinos National Park is under strong influences of visitor movement – part located in Warsaw border. Other park parts are in spite of parking lots, pedestrian and bike trails almost unused by tourists. The result of the counting brings the information about detail distribution of tourists. Most occupied sites are as according to expectation located close to Warsaw border, where the access to public transport is the easiest – 53% of visitors had the possibility to get to the park by public transport. These entrances are situated close to the largest strict protected area – Sieraków. Among busy places there are two placed far from local /regional bus stops (up to 35 km from Warsaw). They are easily reached only by private vehicles, but they are famous for their cultural value (historical cemetery and visitor centre).

Collected data provide crucial information for Kampinos National Park management, particularly needs of next gates to forest located in buffer zone to stop the biggest group of visitors and protect interior of the park. Bell et al. (2007) pointed out this problem between nature conservation and recreation as a main in this – eastern part of Europe.
Next task is the problem of new activities which soon will bring conflicts between different user groups. This lesson from western European countries and increasing biking as a main activity need to be consider to avoid second main problem within valuable, protected forests close to urban area.

REFERENCES


MUHAR A., ARNBERGER A., BRANDENBURG Ch., 2002: Methodst for Visitor moni-

itoring and Management of Visitor Flows in Recreational and protected Areas, Bodenkultur University Vienna, Austria.


Streszczenie: Monitoring ruchu turystycznego jako podstawa zagospodarowania rekreacyjnego lasu w Kampinoskim Parku Narodowym. Arty-
kul przedstawia wyniki monitoringu ruchu turystycznego w Kampinoskim Parku Narodowym, prowadzony metodą liczeniową oraz ankietową w ciepłym, słonecznym weekend czerwcowy 2005 roku. Park położony jest w Warszawskim Obsza-
rze Metropolitalnym i funkcjonuje podobnie jak las miejski. Wyniki monitoringu przedstawiono w kontekście współczesnych trendów w zagospo-
darowaniu turystycznym Europy. Zebrane dane ze znaczącym udziałem rowerzystów i znaczną koncentracją odwiedzających niosą zagrożenia dla warłowców ekologicznych parku i wymagają za-
ostosowania nowego podejścia w zagospodarowaniu rekreacyjnym. Kampinoski Park Narodowy wymaga wdrożenia systemu bram do lasu znajdu-
jących się w strefie buforowej w celu odcięcia chronionego wnętrz parku.

MS. received March 2008

Author’s address:
Katedra Architektury Krajobrazu SGGW
Nowoursynowska 159, 02-787 Warsaw
Poland
agata_cieszewska@sggw.pl