

The 6th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas

Outdoor Recreation in Change
– Current Knowledge and Future Challenges

Stockholm, Sweden, August 21–24, 2012



PROCEEDINGS

Edited by Peter Fredman, Marie Stenseke, Hanna Liljendahl, Anders Mossing and Daniel Laven

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Introduction

Welcome to the 6th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas (MMV). This publication is a collection of extended abstracts from five keynotes, 155 oral and 23 poster presentations. The main theme of the conference is Outdoor Recreation in Change – Current Knowledge and Future Challenges. This reflects not just changes in outdoor recreation participation and behavior alone, but also changes in management of recreational areas and society in general that will impact the future of outdoor recreation.

Sweden is globally known for excellent outdoor recreation opportunities based on a Right of Public Access. Participation has historically been associated with the Nordic 'friluftsliv' tradition, but more recently there are signs of changing recreation behaviors indicative of broader societal changes such as urbanization, globalization and technical developments, but also more specific factors like localized climate change, accessibility and resource management actions. In December 2010 the Swedish parliament voted for the government bill 'The Future of Outdoor Recreation' which was followed by a process where measurable goals were identified. One conclusion from this work was a call for both sound knowledge and high quality data in order to implement and evaluate policies serving the need of the general public. The MMV conference now offers an excellent opportunity to relate the Swedish experience to this broader international context.

The MMV provides a forum for presentations and other exchanges of ideas and experiences related to the monitoring and management of visitors in recreation and protected areas. The conference emphasizes policies, problems, practices and innovative solutions, and is therefore of equal relevance to managers and researchers. The first MMV conference was held in Vienna, Austria, in 2002 and following meetings have been in Rovaniemi, Finland (2004), Rapperswil, Switzerland (2006), Montecatini Terme, Italy (2008) and Wageningen in the Netherlands in 2010.

The organizing consortium of the sixth MMV conference is the Swedish research program Friluftsliv i förändring (Outdoor Recreation in Change) www.friluftsforskning.se – an interdisciplinary research program for the study of outdoor recreation and nature-based tourism supported by the Swedish Environmental Protection Agency. The program is a network involving 15 researchers from seven universities and colleges; Mid-Sweden University, University of Gothenburg, Karlstad University, Örebro University, Umeå University, Blekinge Institute of Technology, and the Swedish University of Agricultural Sciences.

The sixth MMV program covers a broad range of topics related to outdoor recreation and nature-based tourism. Different aspects of visitor monitoring and management of recreational areas are at the core of the conference, but the spectra of subjects in the papers clearly indicates a supply of related research which goes beyond these central themes. Each paper in this proceeding has been reviewed by the program committee and we hope you find this publication a useful overview of this field of research. A special thanks to Mrs. Hanna Liljendahl who edited all the submissions during the summer months, to Dr. Daniel Laven who improved the language and Ms. Lusine Margaryan who assisted in the proof reading.

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Current and future issues in natural area tourism with a special focus on visitor monitoring

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Key issues for natural area tourism

Tourism is becoming one of the largest and fastest growing economic sectors in the world. The number of tourists has grown from 25 million in 1950 to 940 million in 2010 (UNWTO, 2011). Nature tourism has increased from about 2% of all tourism in the late 1980s to about 20% today (Buckley, 2009). With this increase is the view that nature tourism is morphing with sustainable mass tourism. Weaver (2012) attributes this change to natural resource scarcity, the development of green technology, and awareness of climate change. The associated dramatic increase in visitor numbers to natural areas makes visitor monitoring of paramount importance.

Another key issue is the recent movement of the debate about naturalness as a goal for natural areas, to a re-focus on the overarching management goals. Hobbs et al. (2010, 483) suggest taking 'a pluralistic approach that incorporates a suite of guiding principles, including historical fidelity, autonomy of nature, ecological integrity, and resilience, as well as managing with humility' (Hobbs et al., 2010, 483). Such an approach emphasises the importance of objective-based management, where monitoring is clearly directed towards determining if objectives are being met.

Visitor monitoring is also integral to improving management effectiveness, an increasing priority for natural area managers. The Programme of Work on Protected Areas adopted by the Convention of Biological Diversity in 2004 commits signatories to monitoring, evaluating and reporting on protected area management effectiveness and using the information to improve management. Over the last decade the IUCN WCPA's PAME Protected Area Management Evaluation assessment methodology has been widely applied, with visitor management being one of 34 headline indicators (Leverington et al., 2010).

Given these compelling reasons for monitoring visitor use of natural areas it is surprisingly still a neglected activity. Buckley et al. (2008) report a weak match between reported management priorities and monitoring programs, and little knowledge of what visitors do. This lack of knowledge suggests paucities in both visitor research and monitoring. These authors emphasize that monitoring is essential in today's society where evidence is increasingly required regarding the effective, efficient use of limited public financial resources.

Recent advances in monitoring and measurement

Given this policy backdrop, recent advances in monitoring are very much directed towards cost-effective, accurate ways of collecting data on visitor movements, activities, impacts and aspirations.

Remote technologies are a burgeoning field. Develop-

ments in walk trail monitoring are illustrative. Walk trails can be accurately located using global positioning systems (GPS) (Newsome & Davies, 2009), with locational and management data entered in a geographic information system (GIS), along with other spatial data, and then the resultant data sets manipulated to describe trail status and explore management options (Marion et al., 2011). Airborne radar is being increasingly used to locate walk trails and describe their condition (e.g. Kincey & Challis, 2011). Leung et al. (2011) have developed indices, using GIS, to describe the ecological fragmentation created by the proliferation of walk trails. Spatial analyses continue to be acknowledged as essential for planning and management of natural areas (Yuan & Fredman, 2008).

Developments in campsite monitoring relate to efforts to be more cost-effective in monitoring, through careful selection of sampling strategies and moving away from idealized census-based approaches (which are impractical given the limited resources available and the large areas over which camping can occur). Newman et al. (2006) used a GIS to help identify areas where campsites had a high probability of occurring and used this information to develop a sampling strategy for Yosemite National Park. Digital photography and subsequent software analysis are being pursued as a more accurate and cost-effective means of recording and analyzing campsite impacts (Monz & D'Luhosch, 2010).

Remote technologies are also permeating visitor monitoring. Visitors to walk trails can be counted using infrared, photoelectric and seismic pads as well video and still photography. Mass-produced locational (e.g. GPS) and communication devices (e.g. mobile phones) have enabled collection of movement data over time for visitors (Warnken & Blumenstein, 2008). Such data may be location restricted or location independent (i.e. GPS based). For the former, sensing may be passive (e.g. track counters), from a reflected signal (e.g. laser) or from a specific signal (e.g. radio frequency identification tag, mobile phone tracking).

Visitor monitoring continues to focus on crowding as measure of social conditions and visitor satisfaction (Manning, 2011). Recent advances include using animation of visitor use of walk trails to investigate visitors' perceptions regarding resource, social and managerial conditions, including the speed of visitors (e.g., Reichhart & Arnberger, 2010). To gain greater insights to the effects of crowding, researchers have investigated displacement and the contributing factors. Digitally depicted trail scenarios with different combinations of user types, group sizes, compliance behaviour and direction of movement were used by Arnberger and Haider (2007) to determine influential social factors.

The richness of methods associated with visitor perceptions is being enhanced by concepts and measures from

marketing, in particular service quality. Service quality monitoring generally determines visitors' satisfaction with a range of services and facilities, such as the friendliness of staff, the cleanliness of facilities, and the quality of information. Given the focus on facilities, such an approach is most relevant to developed sites and parks, not wilderness areas. Such monitoring also usually asks visitors about overall satisfaction with their visit. Park agencies worldwide use the latter measure in corporate reporting as a measure of the efficacy of their visitor management.

Importance-performance analyses (IPA) provide a simple means of reporting on visitor satisfaction with individual facilities and services. They are increasingly appearing in natural area tourism research. Such analyses are used by the US Forest Service to indicate which attributes, on which national forest, require management attention (i.e. those attributes where importance exceeds performance) (USDA FS, 2012). Recent analyses in Australia have used IPA to benchmark the performance of attributes in national parks

and reserves across Western Australia. Such benchmarking shows where there is exemplary performance of attributes and where further efforts are required. In this Australian study, staff friendliness was exemplary, whereas the quality of information required further management attention (see Taplin & Moore, this proceedings, for further details).

How to accurately count visitor numbers to a park system remains a vexed question (Griffin et al., 2010). Several state park agencies in Australia have resolved this by conducting phone-based community surveys. Respondents are asked about parks they have visited in the last four weeks and the results are used to estimate total visitation. Griffin et al. (2010), in their review of visitor data collection and use, recommend this approach as the most accurate, cost-effective way to obtain annual visitation numbers.

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