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Griffin, T., Moore, S.A., Darcy, S. and Crilley, G. (2008)
***Developing a national approach to visitor data collection, management and use for protected areas: thoughts from Australian research and practice.* In: Fourth International Conference on Monitoring and Management of Visitor Flows in Recreational and Protected Areas: Management for Protection and Sustainable Development, 14 - 19 October, Montecatini Terme,Tuscany, Italy.**

Developing a National Approach to Visitor Data Collection, Management and Use for Protected Areas: Thoughts from Australian Research and Practice

Tony Griffin, Susan A. Moore, Simon Darcy and Gary Crilley

Abstract — Information on visitor numbers, activities, expectations and satisfaction is vital for protected areas managers on two counts: to assist in the provision of the services and facilities that visitors need and want; and to determine if managers have been efficient and effective in meeting these demands. This paper builds on a recently completed national study in Australia of visitor data collection and usage, and the future visitor data needs, of protected area management agencies. Australia is a federation of states and provides a challenging backdrop for developing a national approach as most responsibilities for protected areas rest with the states rather than the national government. Thus, the success of such an approach rests on cooperation rather than an overarching national regulatory responsibility. The study found that all protected area agencies collected visitor data, however, their approaches were highly variable in what was measured, how the measurements were applied and how data were managed and used. This variability was problematic because it becomes very difficult to determine issues of general importance for protected area management or to benchmark performance across areas. Based on these findings and knowledge of the institutional settings for protected area management in Australia, this paper poses some ideas for progressing a national approach for standardising the measures and measurement of key variables so that comparisons and benchmarking become possible and reliable. Core and supplementary visitor data variables can be identified, with the former being of national interest and hence requiring collection and storage under national coordination and guidance. Implementing such an approach will require working creatively and collaboratively within the current institutional settings.

Index Terms — benchmarking, national approach, performance indicators, protected area management, visitor data.

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1 INTRODUCTION

Protected areas in Australia cover 10% of the continental land mass [1]. Visitation to these areas is both substantial and perceived to be growing [1], [2], with a recent estimate putting annual visits at 100 million [3]. The accuracy of that estimate, however, is open to serious question [4]. It is based on an aggregation of estimates of the number of annual visits provided by the ten separate agencies responsible for the management of protected areas in Australia. Each of those agencies, six of which are under the auspices of state governments, two under territory governments and two under the Federal government, has developed its own method of generating this estimate. The methods are highly variable, ranging from survey-based approaches to aggregations of guesstimates

based on the opinions of individual park managers. In one agency an estimate was generated some years ago and then an arbitrary standard growth rate applied for all subsequent years [4]. Overall, there can be little confidence that the estimates reflect reality, nor that agencies are fully aware of the growth in visitation that is occurring and management implications arising from this.

The situation described above reflects a broader problem within Australian protected area agencies: collection and use of visitor data has been rather inconsistently and haphazardly done. Management decisions have consequently often been based on poor quality or no information about such matters as the scale and variety of visitor activities and their associated impacts, as well as visitor needs, behaviour and levels of satisfaction with regard to existing services and facilities. This paper presents some key results from a major study that sought to address this problem. It involved all Australian protected area agencies and aimed to develop a nationally consistent system for visitor data collection that would address current knowledge gaps and improve the overall

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quality of visitor data available to managers at various levels within the agencies.

2 BACKGROUND TO THE PROBLEM

The absence of a strategic, standardized and systematic approach to visitor monitoring has been long-recognized in Australia, dating back to at least the early 1980s [5]. In response, there have been a number of reviews of visitor monitoring practices over the last decade or so. One of the first was carried out by the Victorian National Parks Service in 1996 for theAustralia and New Zealand Environment and Conservation Council (ANZECC) Working Group on Benchmarking and Best Practice for National Parks [6]. The resulting guidelines provided a range of standardized measurement and visitor data collection protocols. A few years later Archer, Griffin and Hayes [7] undertook a review of visitor data collection practices, with the intention of describing how the agencies were collecting, storing, analyzing, reporting and using visitor data. This study revealed that practices varied widely between agencies and the ANZECC guidelines had been only very partially adopted, a finding reinforced in 2002 by the Open Mind Research Group [8]. The OMRG study also found that while the guidelines were well regarded, a range of constraints had limited to their application, including a shortage of resources, the complexity of the standards and the difficulty of operationalizing them. In response, agencies had developed their own standards or adopted others that were perceived to better suit their particular systems.

A common finding of these reviews was the variability and inconsistency across the agencies in terms of measurement methods, frequency and means of collection, and integration of visitor data into management and planning decision-making. The reviews also highlighted how most visitor monitoring had primarily focused on measuring visitor numbers and satisfaction as performance indicators, with limited focus on other types of data such as visitor activities, movements and distribution, motivations, expectations and attitudes. The principal objective of a visitor data collection system is to produce reliable, current data which can be analyzed and presented in a format that can guide decision making at all levels in an agency [6], [8], yet there were clearly some significant gaps. The Commonwealth Grants Commission [3] has reinforced this need to develop reliable and valid methods of collecting visitor data at a national level for the purposes of resource allocation.

The agencies themselves acknowledge these problems and some have made significant recent advances in developing systematic approaches to visitor data collection and use [2]. However the variability and inconsistency in visitor data collection and use across, and sometimes within, the various agencies has persisted, making it very difficult to determine, at the national level, the precise magnitude of visitation, identify visitation trends, or understand visitor market needs in relation to protected areas. It is with this background in mind that the research was designed to assist in developing a nationally consistent system for collecting, benchmarking and managing visitor data for protected area management.

3 STUDY METHOD

This study adopted a *participative action research* (PAR) methodology. PAR aims to produce knowledge directly useful to those being researched though collaboration in the research process. In PAR research, therefore, the emphasis is on working with groups as co-researchers [10]. Adopting this methodology permits the use of diverse methods, and the preferred way to communicate the practice of PAR is through describing actual cases. Within this framework, the study engaged all organizational levels within all Australian protected area agencies and recognized that the structures and purposes for which data are collected may vary between agencies. There needed to be a shared ownership of the knowledge created, and efforts had to be taken to ensure that this knowledge could be effectively used within each agency.

The first stage of the project was to comprehensively review current practices of visitor data collection, management and use, and to identify significant data needs that were not being met. The review considered data that were collected for operational and strategic decision-making as well as performance reporting. Approximately 120 agency staff were interviewed, with the selection of these staff being based on a protocol. Essentially, the team sought to interview those staff involved in the collection, management or use of visitor data, or were responsible for performing functions which relied on visitor data. The selection of staff was driven by a snowballing approach that began with recommendations from key agency contacts within the various head offices. The review focused on the following questions:

- Types of data and how collected
- Organizational level(s) at which data are collected
- Use, storage and dissemination of data
- Factors influencing or constraining data collection and use
- Adequacy and reliability of available data
- Perceived gaps in existing data collections

A crucial step in this process was the establishment of an Industry Reference Group (IRG). The role of the IRG was central to the research design and integral to developing cooperative knowledge management within and between agencies. In this sense, the IRG was central to the notion of PAR to encourage the agencies to work together. At the end of the review, the outcomes were presented to the IRG, which then reached a consensus on the common visitor data needs that required a nationally consistent approach. The IRG also identified a range of supplementary data needs which did not require consistent approaches but where existing practices required some improvement.

4 KEY FINDINGS

The review revealed wide variations in the types of data collected, the means of collection and measurement, and the subsequent management and application of the data. However there were a number of strong common themes and recognized data needs that emerged. Consultation with the IRG led to these needs being organized into two sets: core and supplementary. Each of these is discussed below.

4.1 Core Data Needs

Core visitor data was defined as information that should be collected on an annual or other regular basis using a nationally consistent and standardized methodology across all agencies. Some of these data would need to be collected on a national basis and disaggregated down to an agency level. Other data may be collected at various levels within an agency, regional or even an individual park. In this latter case, the data could, where appropriate, be aggregated up to an agency or national level, but the general rationale for collecting such data in a nationally consistent way is that there is some advantage to this consistency. It may, for example, allow inter-agency comparability or national benchmarking in relation to certain variables. The system, overall, would consequently not only improve the level and quality of knowledge across all agencies but also produce efficiencies.

The following sets were agreed to represent core data needs:
- Aggregate number of visitors, or visits, state or territory wide
- Frequency or regularity of use, as a contributory requirement for estimating visitor/visit counts
- Demographic visitor profiles
- Visitor satisfaction and perceptions of service quality, overall and with regard to specific attributes
- Determinants of satisfaction or quality of experience
- Community attitudes, values and perceptions with respect to protected areas
- Economic value of protected areas
- Trends affecting protected areas
- Visitor safety (accidents, incidents)

These data sets were further categorized as first or second tier needs, based on the relative priority and frequency of collection (e.g. annual). Aggregate visitor/visit counts were regarded as first tier. All agencies expressed a need for a more accurate method of estimating total visitation within their jurisdiction, with a number of agencies describing current estimates as "embarrassing". The perceived value of such data was that they provided a key performance indicator for the agency and were vital to support funding submissions to the respective state or territory Treasuries. In addition, all agencies were required to report their annual visitation estimates to the Commonwealth Grants Commission, which makes recommendations to the Federal Treasury on subsequent funding allocations. The fact that different agencies had varying methods for arriving at these estimates, most of which were subject to a high margin for error, was a major concern. Agencies that tended to be conservative in their estimates felt that they could be disadvantaged in the distribution of funds. There were also concerns over whether the number of visits, which could be varyingly defined, was an adequate basis for determining the load that visitors placed on protected areas. For example, in making a case for additional funding from the Federal Government to support management activities, visits could vary in duration and this could have a great influence on the load placed on a park. For this reason alone, there was a strong case for standardizing the method for estimating aggregate visitor numbers, or an alternative visitor load indicator, across all agencies.

In relation to visitor data other than counts, there was a general issue relating to the

variability in the way certain indicators were measured, across agencies and even in different management units within the same agency. This makes it unnecessarily difficult to draw inferences about general issues such as the importance of certain park facilities, and to benchmark performance against other parks and agencies in relation to indicators such as visitor satisfaction. More consistent and regular measurement would also enable improved monitoring of trends in relation to important management issues.

4.2 Supplementary Data Needs

Supplementary visitor data was defined as that which provides some value for specific management and/or performance reporting tasks in specific contexts, but where there is no advantage in collecting on a consistent basis either nationally or within an agency. There was a wide range of such data needs recognized in the course of the review, some of which were being met by methods that were in need of improvement. Supplementary data needs focused predominantly on information needed at park level for routine management and forward planning. Data of interest included visitor numbers at park level; spatial patterns of use; visitor information requirements; commercial tour activities program evaluation; complaints about service; and facility preferences and expectations.

8 CONCLUSION

Work on this project is ongoing, with the current focus being on developing and testing measurement methods for the core data. Success in advancing a national approach to visitor data collection and use for protected area management rests on continuing to work collaboratively with the associated management agencies. Such a collaborative approach is essential in federated countries like Australia where no one agency has the mandate to direct the activities of managers in protected areas across the country. Collaboration is the only way to achieve national outcomes. The focus on core data needs in this project acknowledges the current institutional circumstances worldwide where protected area agencies have limited resources. Thus, only those data that are deemed essential for management and required for national aggregation or comparison are included in the core set.

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