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Australian experiences in strategic frameworks for visitor management¹

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Abstract

Australia has been applying strategic frameworks for visitor management since the 1980s. There are at least 20 examples of planning frameworks (e.g. Recreation Opportunity Spectrum, Limits of Acceptable Change) being used in this country. Management effectiveness evaluation, another strategic framework for visitor (and protected area) management, has been undertaken in four Australian States over the last decade. This evaluation aims to support adaptive management and improve accountability. Although the two approaches vary in purpose, both rely on indicators. To service both approaches in Australia and elsewhere, the current focus in planning frameworks on resource indicators requires broadening to include measures of the inputs and processes of management. Additionally, successful application of these strategic approaches depends on the commitment of senior agency staff and on scientists and managers working together.

1. Introduction

The complexity and uncertainty associated with the management of the world's national parks and other protected areas is widely acknowledged. To deal effectively and efficiently with these conditions, planning – being able to think and act strategically – is essential. Newsome et al. (2002, 147) define and describe planning for natural areas as follows:

Planning is a process of setting goals and then developing the actions needed to achieve them...it allows managers to define what experiences visitors will have, the experiences they want to produce, the visitors they want to attract, and the limits to environmental modification deemed acceptable. This type of planning focuses on managing to achieve desired outcomes...in the face of changing internal conditions, such as funding and staff changes within management agencies. It also helps cope with external changes, such as swings in public opinion and changing demographics.

The frameworks that dominate today's thinking regarding visitor planning and management for protected areas originated in the United States in the late 1970s. McCool et al. (2007, 5) explain that such planning frameworks 'provide some systematic process for making...decisions such that managers are fully aware of the desired future they wish to attain, the alternative routes to the future, the consequences of those alternatives, and the social acceptability of proposed management actions'.

The most widely known frameworks are the Recreation Opportunity Spectrum (ROS), Limits of Acceptable Change (LAC), Visitor Impact Management (VIM), and the less widely-applied and known Visitor Experience Resource Protection (VERP), Visitor Activity Management Process (VAMP) and Tourism Optimization Management Model (TOMM) (Newsome et al. 2002, McCool et al. 2007). All aim to protect the natural environment while providing desirable opportunities for visitors. As these frameworks

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have evolved, with the same scientists working on a number of them, a number of features are shared.

All follow the steps of rational planning starting with the identification of issues and concluding with management and monitoring (Figure 1). All except ROS develop indicators and standards. Nilsen and Tayler (1997) note that VERP and VAMP share the greatest similarities, such as their emphasis on a broad range of factors at the strategic level of planning and management. Once these strategic decisions are made, the framework then moves onto developing indicators and standards. LAC and VIM, on the other hand, begin with a narrower focus, identifying issues and these then guide the identification of indicators and standards.

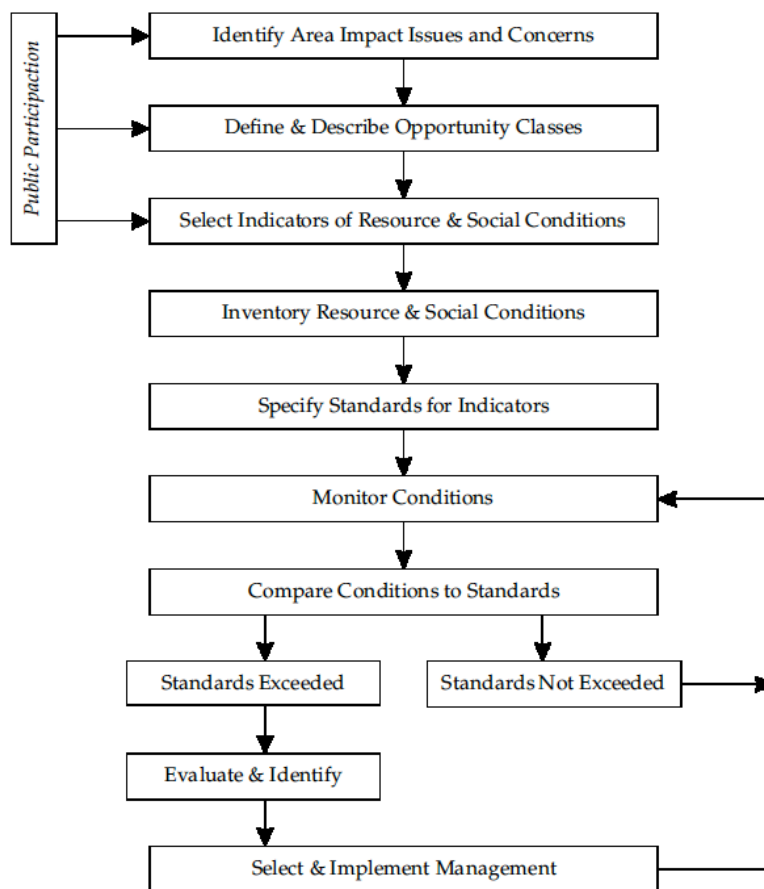


Figure 1. Generalised description of planning (and management) frameworks (Source: Moore et al. 2003)

Planning frameworks provide for a range of experiences while still protecting the natural environments that attracted visitors in the first place. Over the last decade the attention of managers and other stakeholders involved with protected areas has shifted to asking if management has been effective (Hockings et al. 2004). Those interested in nature conservation have increasingly realized it is insufficient to reserve protected areas and plan for their management, if their values are to be protected then active management is essential. Having invested in management (or not) it then becomes critical to understand the success or otherwise of current efforts, and the associated strengths and weaknesses.

The IUCN World Commission of Protected Areas established a Task Force in 1997 who developed a framework that provided a structure and process for designing management effectiveness evaluation systems (see Hockings et al. 2000, 2006). The resultant IUCN-WCPA framework has its origins in the quality assurance activities of the preceding two decades, which have a central interest in the management cycle and its inputs, processes, outputs and outcomes (Moore et al. 2003, Hockings et al. 2005). This framework has three main components: (1) design issues such as the status of the protected area and associated threats; (2) the adequacy and appropriateness of the current management systems; and (3) delivery in terms of outputs and outcomes (Figure 2).



Figure 2. The IUCN-WCPA management effectiveness evaluation framework (Source: Hockings et al. 2006)

The aim of this paper is to describe and analyze the use of strategic frameworks for visitor management in Australia and conclude with some thoughts regarding their future application in Australia and elsewhere. This analysis draws on both the planning frameworks that set up the experiences for visitors in protected areas and the more recently developed management effectiveness frameworks that help measure the success of planning and management.

2. Review of the extent of implementation of visitor planning frameworks in Australia

This part of the paper draws on two bodies of research. The first describes the extent of implementation of various visitor management frameworks in Australia as of 1998 (McArthur and Sebastian 1998; McArthur 2000). It is the most comprehensive and only study in this country to describe for the most common frameworks where they have been applied. The second is a more recent, general study that determined, for Australian protected area agencies, their level of use of and familiarity with various visitor management frameworks (Brown et al. 2006).

To give these research findings context it is important to briefly describe protected area governance in Australia. Australia has three tiers of government – Commonwealth (national), state and local (shire/county/province) – and these are collectively referred to as the Australian Government. Australia originated as a number of independent states that came together at federation, guided by the Australian Constitution, in 1901. Responsibility for land management and thus protected area management has historically rested with the States. Most (but not all) national parks are in reality State parks, as they are managed by State governments. This diversity in management responsibility can make it difficult to have nationally consistent policies and management of protected areas across Australia (Griffin et al. 2010).

The first body of work is based on a study commissioned by the NSW National Parks and Wildlife Service and completed by Missing Link Tourism Consultancy² in 1998 to document current approaches to sustainable visitor use management at the site-specific scale. The study involved contacting protected area managers across Australia to find out what approaches they were using, including visitor frameworks. This paper draws on the results from this consultancy as reported in McArthur and Sebastian (1998) and McArthur (2000). Covered are the extent of implementation of each framework, the features of each according to these authors and their suggestions on how to select the right framework for the right purpose.

Approximately 20 examples of implemented frameworks were identified (Table 1), although some localized initiatives may have been missed. ROS, LAC and VIMM appear to be the most widely applied, however, many agencies seemed to blend two or more frameworks for their own customized approach. The most widespread applications were a customized version of VIMM by Parks Victoria and a customized, combined version of ROS and LAC by the Queensland Department of Natural Resources. The study also found a large number of sites where visitor planning frameworks had been proposed in plans and strategies but had not been implemented (McArthur and Sebastian 1998).

Many of the applications were at a regional rather than site-specific or State-level. Virtually all of the regional applications involved more than one agency while the site-specific and Statewide approaches were used by a single agency for a single land tenure. TOMM was associated with the most substantial stakeholder involvement. The central focus was development of indicators and some form of monitoring. The development of indicators received much more attention than the assessment and reporting of such data (McArthur and Sebastian 1998).

In terms of resourcing, most of the approaches were regarded as expensive with respect to both time and money. ROS and carrying capacity were identified as the cheapest and TOMM as the most expensive. About half of the planning exercises were supported by seed funding, while the other half were funded by one agency. External expertise was important for about half, and all relied heavily on one to two individuals with expertise. Staff training was very limited.

McArthur (2000) recommended addressing the following for more effective application of the frameworks :

- Changing the organisational culture so this type of planning is supported over the long-term.

² Author(s) unknown.

- Achieving better resourcing through obtaining seed funding, developing only part of the model through to implementation (e.g. for indicators where data are already available) or selecting an issue where there is already widespread support and results can be easily achieved.
- Adjusting the approach to public involvement according to the issues, stakeholder expectations and the resources available.
- Selecting the right model based on the characteristics of the situation, current visitor management and resources available (McArthur and Sebastian 1998).
- Developing an implementation plan that includes specific actions (with timing, budgets and responsibilities), marketing the plan, staff development, and progressive evaluation and improvement of the plan.

Table 1. Examples of the application of visitor frameworks from Australia as of 1998 (Source: McArthur and Sebastian 1998)

Sites	CC	ROS	LAC	VERP/VAMP/TOMM	Customised
Green Island (Qld)	✓				
Carnarben Gorge NP (Qld)		✓			
Brisbane Forest Park (Qld)		✓	✓		✓
Fraser Island NP (Qld)			✓	VERP	✓
Brisbane Main Range NP (Qld)	✓				✓
Queensland State Forests (Qld)		✓	✓		✓
Montagu Island (NSW)	✓				
Jenolan Caves (NSW)		✓			✓
North Sydney Heads (NSW)					
Point Nepean NP (Vic)	✓				
22 parks and reserves (Vic)					✓
Willis area in Aust Alp NP		✓	✓	VERP, VAMP	✓
Southern Forests (Tas)		✓			✓
WHA walking tracks (Tas)			✓		
Kangaroo Island (SA)				TOMM	
Dryandra Woodland (WA)				TOMM	
Walpole-Nornalup NP (WA)			✓		
Kakadu NP (NT)		✓	✓		✓
TOTALS	4	7	7		9

The more recent review (Brown et al. 2006), commissioned by the Sustainable Tourism Cooperative Research Centre, used summaries of the literature, and surveys of protected area managers and researchers to review the current use of visitor impact management tools in Australia. They identified these tools as including frameworks such as LAC and ROS, as well as other approaches including simulation models and impact assessments. Of greatest relevance to this paper is their two-round Delphi survey of 8 senior park management staff from protected area agencies across Australia.

Delphi surveys rely on a small group or panel of experts to comment anonymously on a set of questions. This is the first round. Their feedback is the distributed, again anonymously, to the other respondents. This is the second round with their subsequent response providing further input. Often a third round is used but that was not the case

in the Brown et al. (2006) study. The Delphi technique allows complex issues, including professional opinions that are often difficult to deal with in conventional questionnaires, to be explored (Garrod 2003). The multi-round approach enables respondents to re-consider their own views once they see others' responses; an opportunity not readily offered by other survey techniques.

The Delphi survey of agency managers conducted by Brown et al. (2006) sought to:

- (1) Identify, for visitor impact management tools (including ROS, LAC, VIM, VERP), their –
 - a. level of familiarity with each tool and
 - b. extent of current usage.
- (2) Three most and least useful.
- (3) Reasons for limited application in Australia when compared to North America.
- (4) How application rates might be improved in Australian protected area agencies.
- (5) Possible allocation of resources to these tools in the future.

Agency managers were most familiar with ROS, LAC and carrying capacity, with these frameworks also having the greatest frequency of use (Table 2). The lower use scores relative to familiarity shows that the latter does not translate into use. ROS is the only framework used in 2-4 locations or more (Table 3, score of 3.11). For the other frameworks, their scores of <3 mean they are used in 2-4 locations or less.

Table 2. Familiarity with and frequency of use for visitor management frameworks as reported by Australian protected area managers (Source: Brown et al. 2006)

Framework	Familiarity (mean)*	Frequency of use (mean)**
ROS	4.56	3.11
LAC	4.44	2.11
Carrying capacity	4.33	2.44
VIM	3.89	1.44
VAMP	3.33	1.33
VERP	3.11	1.22
TOMM	3.00	1.44

* Data collecting using a 5-point Likert scale: 5 = very familiar, 4 = average working familiarity, 3 = slight familiarity, 2 = heard of it but not familiar, 1 = never heard of it.

** Data collected using 5-point Likert scale: 5 = widespread (9+) applications across the agency, 4 = used in 5-8 locations or instances, 3 = used in a few (2-4) locations or instances, 2 = used in 1 location or instance, 1 = don't use.

The three most useful were identified as ROS, LAC and carrying capacity, and the three least useful, of which only one was a visitor framework, was carrying capacity. Carrying capacity appears in both lists because it is a highly contested concept (Newsome et al. 2002) with a number of managers preferring to focus on managing visitor impacts rather than the more simplistic approach of focusing on and managing visitor numbers.

Reasons for limited application in Australia compared to the situation in North America included:

- Protected area agencies in Australia manage urban and peri-urban parks and reserves whereas the frameworks were largely developed in North America for wilderness areas.

- Lack of expertise in Australia to identify indicators and standards with the perception that far greater Federal funds are allocated in North America to universities, the National Park Service and the Forest Service to investigate, modify and implement visitor frameworks.
- Insufficient resources available in Australia, whereas land management agencies in the United States are perceived as having greater resources and stronger links between park management and the biological sciences, which are brought together in centralized planning teams.

The report also identified that the large number of jurisdictions in Australia involved in protected area management i.e. in Australia, individual states are responsible for protected area management (with a few exceptions) contributed to the lack of a coordinated commitment to developing and using visitor frameworks. Respondents believed that it was easier in North America, with their Federal land management agencies, to embrace a particular visitor framework and then implement it across the country.

The agency managers surveyed suggested that application rates might be improved in Australian protected area agencies by having:

- Research funding for developing and applying the frameworks.
- Cost-effective frameworks.
- Partnerships with university post-graduate programs to test models.
- A website with proformas for models.
- Training to build a network of skilled users.

All of these suggestions addressed managers' concerns about the lack of resources available. Managers also suggested that adoption rates could be improved if they had greater confidence in the accuracy and benefits of particular tools, potentially provided through the documentation of successful case studies.

In terms of allocation of resources in the future, 7 of the 8 respondents wanted at least half of any potential resources available for visitor frameworks to be put into capacity building i.e. training and extension regarding current frameworks. This answer was given in response to a question asking these managers to split a hypothetical financial allocation between (1) developing new frameworks and (2) obtaining training in using existing frameworks.

Brown et al. (2006), also as part of this study, ran an interactive dialogue, with 3 university researchers, at an Australian tourism conference to obtain their views on how researchers could help progress the adoption of visitor frameworks by protected area agencies in Australia. Their main conclusions follow:

- All agreed that managers want a toolkit approach, however, a standardized national approach was acknowledged as unrealistic given the widely differing local conditions across Australia.
- The effectiveness and utility of 2-3 major frameworks (e.g. ROS, LAC) should be demonstrated and assessed by researchers.
- Provide training for park staff on planning processes, outcomes and available tools.

Several recommendations concluded Brown et al.'s (2006) study. Those most relevant to this paper are:

- Develop a more extensive case history of protected area framework applications in Australia.
- Develop a national training program and reference materials on applying visitor frameworks in protected areas.
- Examine potential ways to standardize visitor frameworks and methods in Australia.

3. Review of the extent of implementation of management effectiveness evaluation in Australia

Management effectiveness evaluation provides a somewhat different strategic approach to visitor management, with its emphasis on determining the effectiveness of management. Leverington et al. (2008) provide a comprehensive global review of the status of management effectiveness evaluation in protected areas. They note that in Australia such evaluations have been undertaken in four states – New South Wales, Victoria, Tasmania and Queensland. The salient features are summarized in Table 3. In all four states the purposes were to improve management and accountability, and to raise awareness and support. All relied on quantitative and qualitative data.

Table 3. Application of management effectiveness evaluations in Australia (Source: Leverington et al. 2008)

State	Methodology	Additional methodological details
NSW; applied to over 700 reserves	Collects information on each reserve, staff time and financial inputs, status of plans, ratings of 30 aspects of management	Relies on staff workshops to generate indicators and associated data; data entered online and as Excel spreadsheet; addresses 6 elements of IUCN-WCPA framework (Fig. 2)
Victoria; applied to 400 reserves	Elements and indicators are similar to the ones used by NSW (see above)	Relies on a staff workshop to conduct assessments for groups of reserves; developed as Access database; incorporates data from existing research and monitoring programs (more time-consuming than NSW approach); addresses 6 elements of IUCN-WCPA framework (Fig. 2)
Tasmania; applied to Tas. World Heritage Area	Evaluation provides evidence of management performance against key desired outcomes; reports on these outcomes and factors affecting performance	Evaluation report prepared by 'dedicated evaluation staff over a number of years' (Leverington et al. 2008, 163); no standardized list of indicators; >230 assessment items listed in 1999 plan
Queensland; ~90 Integrity Statements completed in S Qld by 2007	Integrity statements assess status of values of a protected area; develops indicators from a value-base rather than solely as a reaction to current	Relies on staff workshops; data entered into Excel spreadsheets; includes analysis of values, conditions and associated trend, plus threats

	threats	
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In mid-2010 an Australia-wide review of monitoring and reporting on visitor use of protected areas was published (Higginbottom et al. 2010). Although it only focuses on monitoring visitor use of protected areas and not their ecology it still has some useful conclusions regarding the extent and focus of monitoring by managers. When monitoring is described using Hocking et al.'s (2000, 2006) design elements, the outcomes of management (31%) and management processes (32%) are those facets receiving the most attention. Outputs (17%) and inputs (10%) receive less, and context (6%) and planning (4%) less again (Higginbottom et al. 2010).

In contrast, Jacobson et al. (2008) found that Australian protected area agencies were paying the most attention to context, planning and outcomes. These differences between the two reviews are most likely due to differing interpretations regarding the subjects that together represent an evaluation element such as context. In both reviews, however, outcomes were clearly of central interest, supported by an international review of 27 management effectiveness systems for protected areas where outcomes was the most widely assessed element (Hockings 2003).

Undertaking these management effectiveness evaluations can be challenging. In reflecting on the NSW evaluation (Table 3) Growcock et al. (2009) and Hockings et al. (2009) noted the following as important for success:

- Agency commitment, especially explicit support and leadership by senior managers.
- Extensive consultation with staff during the design and implementation of the process, including training in how to do the evaluation.
- Products and tools that allow the evaluation results to be shared and used across a park agency, especially by field-based managers.
- Using a mix of qualitative and quantitative indicators.
- Recognizing and being ready to deal as an agency with results that are *not* positive.
- Ensuring staff do not think management effectiveness evaluation is a new form of surveillance of their performance.

4. Concluding comments

Although visitor planning frameworks and management effectiveness evaluations have different purposes, sharing benefits and synergies between the two are possible. Agencies need visitor planning frameworks to help deliver the diversity of experiences visitors are collectively seeking, as well strategically manage issues and establish indicators as a basis for ongoing monitoring and adaptive management. Management effectiveness evaluations follow such planning and indeed rely on it to establish management objectives.

Most importantly, both types of frameworks have a central reliance on indicators (Moore et al. 2003). Planning frameworks do not, however, encompass the range of indicators required for evaluating management effectiveness (assuming use of the IUCN-WCPA evaluation framework). They do provide a 'very robust means of reporting on threats to and the condition of an area (i.e. the design component) and management outputs and outcomes (i.e. delivery).' (Moore et al. 2003, 369). They do not currently consider or include indicators for management inputs and processes. These elements of

evaluation have been identified as requiring attention in Australia (Jacobson et al. 2009) and elsewhere.

This paper concludes with a few thoughts for managers and other researchers regarding future directions and opportunities, synthesized from the above review:

1. The success of visitor planning frameworks rests on careful use of resources and training.
2. The success of management effectiveness evaluations rests on agency commitment and engagement and field-based managers being able to use the evaluation results.
3. Managers and scientists working together in both design and implementation contributes to the success of both types of frameworks.
4. Both framework types help achieve adaptive management; a challenge remains in how to broaden the indicators used in planning frameworks to include management inputs and processes which are integral to management effectiveness evaluations.
5. Broadening how visitor management frameworks are conceptualized beyond them being 'impact management' frameworks is also needed. Management effectiveness evaluation uses the *values* of the protected area as a starting point. Such an approach explicitly acknowledges the fundamental reasons why a protected area was established in the first place.

Strategic frameworks clearly have a place in managing visitor use of protected areas through an uncertain present and future. Agency commitment is pivotal as is the active engagement of scientists in both the design and implementation of such frameworks.

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