An Action Research Appraisal of Visitor Center Interpretation and Change

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Abstract
This study uses an action research framework to evaluate changes to the visitor center-based interpretation of a natural environment. The context for the study is Australia's Flinders Chase National Park, located in an isolated tourism region, namely Kangaroo Island in the state of South Australia. The island and the park are best known for the opportunities visitors have to see many forms of Australian wildlife. Surveys of over 700 visitors were conducted in 1999 and these results were used to inform the design of interpretation in a new and much larger visitor center. In 2004 further survey work with 450 visitors was conducted. The second study specifically reported on the overall effectiveness of the new center in influencing visitors' satisfaction with the interpretation. The results demonstrate the value of action research in shaping interpretive practice.

Keywords
visitor centers, action research, tourism research, southern Australia

Introduction

Visitor centers are an important part of the tourism and interpretation landscape in many countries. Such centers are common in North America, the United Kingdom, Australia, New Zealand, and increasingly in Asia and Europe. The term *visitor center* as used in this research refers to clearly labeled buildings where staff provides information to the public for

the purposes of enhancing and managing the visitor experience (c.f. Pearce, 1991; Hobbin, 1999). Although there is a traditional association of visitor centers with national parks and public heritage sites, visitor centers are also common in urban areas and at transport nodes such as border crossings (Fesenmaier & Vogt, 1993). Visitor centers can have several overlapping functions and the pattern of these functions can be used as a way of classifying different types of centers. There are, for example, some centers that provide principally promotional material; others attempt to control and filter visitor movement patterns in an area and still others act as a substitute for an attraction by providing their own types of visitor entertainment and diversion (Fallon & Kriwoken, 2003; Pearce, 2004). These patterns of activity often give rise to different names for visitor centers, with some cultures and countries preferring the label interpretive center for those focussed on visitor control and engagement. Such centers have a stronger visitor education component while terms such as *welcome centers* and *information centers* are used where the more marketing-oriented activities prevail.

The study reported in this paper showcases an opportunity in interpretation research. At core, the opportunity lies in the wider application of action research to interpretation planning and practices (Wadsworth, 2005). The organization of the present research on interpretation planning and conducted for one specific visitor center follows action research principles. The context for this research involves the replacement of an existing visitor interpretive center on Kangaroo Island in South Australia with a new and larger facility. The action research approach used in this study elevates the activities of researchers to that of valued partners in the interpretation team rather than external auditors and commentators. Such involvement does not amount to a compromise in researcher integrity, but rather requires independent appraisal of information and the delivery of the implications of research in a timely fashion for operational change. The specific task of this paper is to report the outcomes of an action research initiative achieved through two linked studies and associated meetings conducted in 1999 and 2004. These studies in turn shaped and then evaluated the interpretive efforts of the new visitor center at the Flinders Chase National Park.

Action Research

The roots of action research lie in the continuing attempts of social science researchers to make a difference (c.f. Cooper et al., 2004; Flyvbjerg, 2001). The derivation of the term action research is often traced to one of sociology's founding figures, Kurt Lewin, who suggested that one way of understanding an organization was to help change it (Lewin, 1947). He characterized action research as comparative research on the conditions and effects of various forms of social action. An important part of Lewin's writing about action research was to highlight that such research usually involves repeated research inputs to assess the state of a system and to monitor changes in the system. Action research is, however, unlike more traditional quasi-experimental studies that investigate interventions and change from a distance (c.f. Cook & Campbell, 1975; Shadish et al., 2002), because action researchers are themselves agents of change through collaboration, in that they feed research results directly into real world problems(McTaggart,1988; Wadsworth,2005).

O'Brien (1998) concludes that action research fundamentally seeks to study a system and concurrently to collaborate with members of the system in changing it. The nature of the change is a jointly negotiated and shared common direction deemed to be desirable by

all parties. More than one term is used to label this kind of research and synonyms for action research include *participatory research, collaborative inquiry,* and *action learning.* Action research has developed a considerable body of adherents and it is an important technique in educational and clinical research, counselling studies, and community development (Cameron & Gibson, 2005; Kidd & Kral, 2005).

There are a number of divisions recognized within action research and studies on interpretation can be seen as fitting most directly into one of these groupings. McTaggart (1991) identifies two sub-classes of particular interest, practical action research and emancipatory action research. Practical action research exists when a facilitator or external party (such as a university research team) establishes cooperative relationships with practitioners. The external party assists the practitioners to articulate their values and concerns and then, further, helps to plan and evaluate the actions. Emancipatory action research is a more radical social process and involves changing the consciousness and values of the group. Studies of interpretation are more likely to fall into the category of practical action research whereas research in communities involving power and social inequity issues are more likely to be involved in emancipatory action research.

There are some important guidelines in the literature on action research which help plan and guide such studies (Kemmis & McTaggart, 1988). Many of the specifications for good action research are common to those applying to research in general but there are some specific areas for attention. Action research should be conceived in phases or stages and these phases are critical to the assessment of intervention effects. In the academic reporting of action research, attention should be given to the nature of the relationships established between the researchers and the community of interest. The kinds of rapport established may help explain the extent to which the initial research was adopted or stimulated change. Further, the rapport may help explain access given to researchers to help evaluate and monitor change. In a methodological sense the nature of action research also raises some scientific dilemmas. It can not always be expected that action research is guided by neat theoretically derived hypotheses, as many real-world situations are over-determined, in that many competing forces produce the observed outcomes. This is not an apology for poor social science but recognition that results may be complex and need careful examination and inspection due to multiple situational forces. As Wadsworth (2005) suggests, action research may be underreported in the academic literature because it is localized and outcomes oriented rather than neatly designed to be publication focused.

Several considerations from the literature on action research guide the study reported here. It is important to specify the context for action research initiatives so that any generalization or wider implications from the localized study can be fully appreciated. It is also important to report the nature of the relationships with the community or organization, as this helps define the kinds of researcher access and inputs to the process of change. Additionally, while reporting of results is likely to follow general social science reporting standards, there must be detailed explanations and descriptions of the research process to help track any deviations from conventional research methods (such as changes in survey instruments) caused by the relationships or political processes. It is perhaps important to return to Lewin (1947) in setting out these caveats about action research. In particular, it is valuable to emphasize that action research is not just problem solving or consulting advice to management, but a genuine attempt to record systematically "research on the conditions and effects of various forms of social actions" (1947: 34).

The Setting

The English navigator Matthew Flinders provided the name Kangaroo Island in 1802. Flinders, having survived a ferocious gale somewhat typical of these stormy waters, was surveying Australia's southern coast and landed on the island to investigate the black shapes seen by his men. The abundance of a darkly colored, thickly coated species of kangaroo prompted the name (Toft, 2002). In the 21st century, Flinders Chase National Park at the western end of Kangaroo Island is on the periphery of the periphery; that is, it is an 800-square-kilometer wilderness little touched by human settlement. Altogether the island is 100 kilometers long by 40 kilometers wide and has only 4,000 inhabitants, most of whom live near the eastern shoreline. This community is removed from the rest of the state of South Australia by a rough and deep strait across which there is limited daily boat transport, but there is some access by air to the state capital of Adelaide.

A combination of the remote location and the sparse human settlement has preserved Kangaroo Island as an area of exceptional abundance of Australian wildlife. The Flinders Chase National Park borders the entire western coastline of the island. It includes large tracts of densely vegetated and slightly rolling low hills. It is thus an extensive, untouched sanctuary for not only kangaroos, but also echidnas, seals, penguins, goannas, koalas, platypus, numerous birds, and snakes. The geological formations on the coastline are striking examples of wind- and sea-eroded granite caverns. The stirring tales about the shipwrecks, which were plentiful along this wild coast, provide a further diversity of sites and themes for visitors.

The South Australian National Parks and Wildlife Service (SANPWS), the administrative body responsible for the Flinders Chase National Park, began operating a small, single room visitor administrative facility in the late 1980s. The center was sited at the southern and principal entrance to the park. The rise of national and international interest in wildlife tourism during the 1990s created a surge in visitor numbers to Kangaroo Island. Visitor numbers more than doubled in the decade of the 1990s, reaching a record high for a total annual figure of almost 200,000 by the end of the period. Although only a portion of these visitors (circa 40%) came to the western end of the island, the increasing numbers were causing several stresses. In particular, there were pressures on the unsealed roads at the key sites and the physical capacity of the small visitor facility was of concern. A state government political decision was made to construct a new, large-scale visitor center as both a symbolic and operational management tool. It was intended to function as an interpretive facility to maintain the image of Flinders Chase and boost the island's tourism standards and experiential quality. Additionally, the possibility of influencing visitors' travel patterns and movements in the park were seen as possible through the visitor center's interpretation and information. The scale of this visitor center construction was not trivial with over A$7.5 million (US$6 million) being invested in the new complex. This figure represents one of the more expensive efforts at interpreting an Australian environment (c.f. Fallon & Krikowoken, 2003).

The Conceptual Basis of the Studies

While action research is the key guiding methodological style of the study and its requirements dictate a number of issues in conducting the work, the model of mindfulness was employed as a guide to assessing the interpretation itself. Evaluation studies in interpretation are increasingly being buttressed by theoretical and conceptual schemes to guide the survey

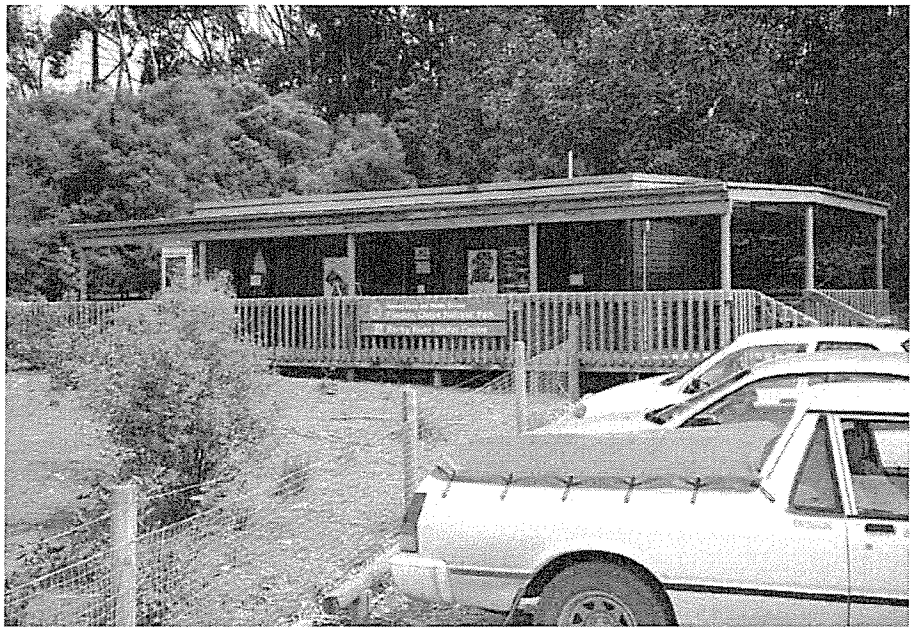

Figure 1. The visitor center at Flinders Chase in 1999

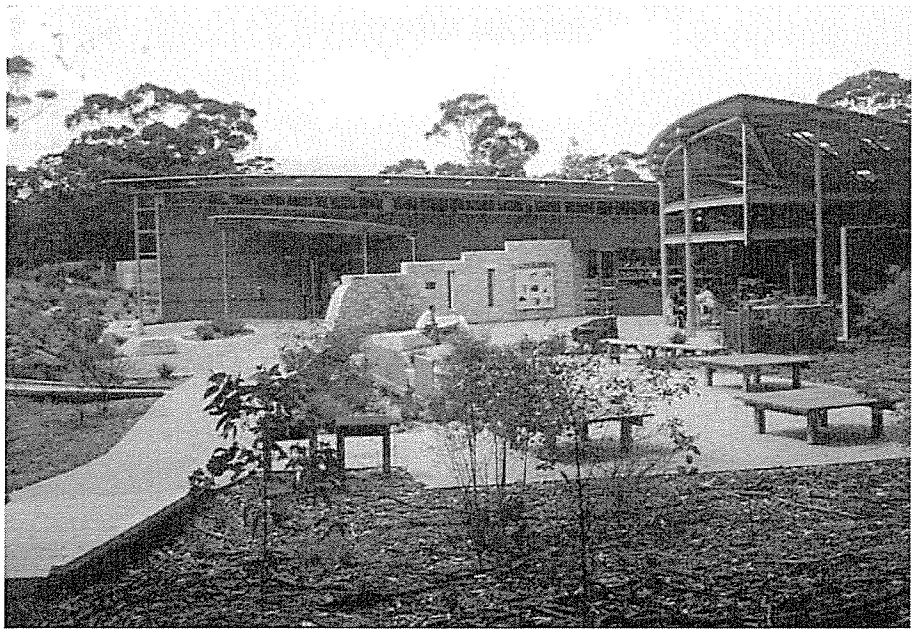

Figure 2. The visitor center at Flinders Chase in 2004

and interview work of researchers (Bitgood et al., 1988; Uzzell & Ballantyne, 1998; Moscardo, 1999). One guide to understanding interpretation lies in the application of the generic concept of mindfulness (Langer, 1989; Moscardo, 1999). The mindfulness-mindlessness distinction draws attention to the mental state of visitors interacting with interpretive materials and proposes that there are key stimulus factors as well as key visitor factors that promote visitor attention to information, retention of information, and ultimately satisfaction with the visitor experience. Mindfulness refers to the active processing of information where visitors are concentrating on adding new information to their existing knowledge. By way of contrast, mindlessness represents the process where individuals are following existing routines and scripts in the processing of material and, while they may appear to be concentrating, they are not actually renovating and reorganizing what they know. Some of the key stimulus factors promoting mindfulness include communication efforts that are novel, multisensory, use questions, connect to visitors' previous interests, promote good orientation, and offer variety across the whole interpretive experience (see Moscardo (1999) and Pearce (2005) for a full discussion and outline of the mindfulness model in tourism settings). In this study the mindfulness model was integral to the design of the research effort and was particularly used to offer advice to the new visitor center planning team.

Outline and Goals of the Research

Working within an action research framework, two linked studies were conducted. The first study reports work carried out on visitor needs for interpretation as assessed in 1999. At that time (refer Figure 1) and as noted previously, there was there was only a very small visitor facility at the park. There was very limited interpretation in this small building. The second study reports on the work carried out in 2004 after the construction of a new visitor center. The goal of the first study was to describe the needs of visitors for interpretation at the park. A second goal of this first study was to use this description of visitors' needs for interpretive information to make recommendations for interpretive content in the new visitor center. The purpose of the second study in 2004 was to describe visitors' evaluation of interpretation at the new Flinders Chase National Park Visitor Center. The dominant goal of the research overall lies in examining visitors' reactions to the newly provided interpretation resulting from the outcomes of the action-oriented research built on the mindfulness model.

Methodology

Overview

The research is presented in two stages. The 1999 study and its implications for interpretation planing are considered first. Then the second study, conducted in 2004 and appraising the visitors' reactions to the interpretive efforts in the new center, is portrayed. In order to be consistent with the requirements of action research the researcher-practitioner relationships are initially outlined.

Researcher-practitioner Interaction

Initial contact was made between the researchers and staff from SANPWS as a part of a national project evaluating wildlife based tourism management issues. At that meeting interpretive staff from SANPWS reported that funding for a new interpretive center for

Flinders Chase National Park had recently been announced and that they would appreciate assistance with its planning and design. The principal funding for the studies was not provided by the South Australian organization but was instead sourced through the ongoing research activities of the group as a way of expanding and building the national research applications of their ideas and concepts. This structure enabled a degree of independence and moved the work away from a consultancy basis and readied it for an action-research format with the researchers able to provide an independent but participatory voice.

The sequence or spiral of interaction that defines action research was applied as follows. A meeting between key staff managing the visitor center project and the researchers took place in early 1999. This meeting planned the first survey of visitors' interpretive requirements for the new center and this was undertaken in September 1999. The report on this work, complete with some recommendations for interpretation content, was presented in person to the planning team for the new visitor center in February 2000. There was discussion with practitioner staff about this work over a series of meetings and seminars. The researchers and the planning team remained in contact during the construction phase. The visitor center was opened in late 2003 and an evaluation of visitor responses to the new interpretation was carried out in September 2004. Again the researchers received funds from independent sources to conduct this work. Advice and the main findings of the study were communicated in November 2004 and a formal report on the work was completed in August 2005.

The 1999 Study Method Details

Procedure

A team of university tourism researchers, all with established records of conducting surveys with visitors in natural environment contexts, travelled to South Australia as a part of the independent funding sponsoring this study. Following earlier planning meetings with the South Australian Parks and Wildlife Service staff, it was agreed that the research staff would personally hand out questionnaires, which would then be completed by the visitors. Additionally it was agreed that the research staff would remain close by to answer questions, to clarify issues, and to encourage respondents to complete all of the survey form. Two quota sampling approaches were adopted. Moderately large sample sizes were considered necessary to explore breakdowns in the data analysis and to permit confidence in the findings. In collaboration with the practitioners who thought there might be important differences among visitors in their interpretive needs, it was agreed that a balanced quota of self drive (target N=300) and coach tour visitors (N=300) be surveyed. Similarly it was agreed in discussion and for similar reasons that approximately equal numbers of visitors who had been through the park (N=300) as well as those about to enter the park should be targeted (N=300). These two quota targets did overlap, so a daily monitoring of progress towards these mutual goals was required. The pre-visit and post-visit structure meant there were subtle differences in question wording for these different respondents but the variations are of minor interest in reporting the results reflecting simply changes of tense relating to the survey timing for each group. The last week in September and three days in October were chosen for the survey period on the advice of the practitioners. This time of the year was classified as a high-visitation period due to local and interstate school holidays and, additionally, it was considered to be a period when international visitors were more

likely to be present. In terms of seasonality and weather, it is mid-spring on the island in September with temperature ranges typically from a maximum of 12 to 25 degrees Celsius (about 53 to 77 degrees Fahrenheit). On any day during the survey period, researchers would disperse to any one of nine sites on the island selected for ease of access to visitors. The sites consisted of lunch and picnic areas, transport nodes and other national park sites in addition to the main Flinders Chase visitor facility location. At all sites, appropriate managerial permission was sought to distribute the surveys and remain on site to collect the forms. All potential independent respondents were approached during the times the researchers were at the sites. Typically, this meant approaching all the people at the site at the time since the pace and sequencing of visitors at most sites permitted requests to participate be made to all of the visitors present. In situations where there were too many visitors to survey at once, every second travel party was approached and one person asked to assist. The request was alternated between males and females if the travel party contained people of different genders. Permission to approach coach passengers on group tours was sought from the relevant coach companies and managers. Tour group passengers were accessed more readily due to knowledge of their schedules and likely arrival times. The research team kept a daily tally of tour group visitors (these were mainly large coach visitors) bearing in mind the need to reach the quotas that had been set. This quota was reached and indeed exceeded after seven days.

Survey Questions

The instrument developed to assess visitor needs for interpretation was built on a range of similar surveys used in other interpretive contexts and which had resulted in peer-reviewed academic publications. In particular, question formats for visitor demographics and interests in interpretive materials were directly linked to such sources (Woods & Moscardo, 1996). Nevertheless, the action-research format requires many questions tailored to a particular setting. The following categories of information were requested in the survey, with the most important interpretive material embedded in the larger context of assessing visitor attitudes to the park. In the order they appeared on the self-completion survey form, the questions were place of residence, independent or tour group category, visit history, visit duration, motivation to visit the Flinders Chase (a closed question with 12 motive items built on the travel career motivation work of Beard and Ragheb (1983) and Pearce (1988)), wildlife viewing interest (a question with five alternatives linked to a specialist interest, a general interest, partial interest, disinterest, or actively avoiding wildlife), an open-ended question (used in previous studies) of what questions visitors would like to ask about wildlife, a closed-ended question identifying 16 themes for the interpretation in the future visitor center and rated on four levels of interest, a question on the adequacy of the available information (three response categories: not enough, about right, too much), an item on further facilities required (open ended), questions on Flinders Chase site visit patterns or intended visit patterns, satisfaction with wildlife experiences on a 0 to 10 point scale (to explore this issue in depth (c.f. Ryan, 1995)), open-ended questions on how to improve wildlife viewing, satisfaction with fifteen specific other features of the park (five-point scale), overall satisfaction with the park (0 to 10) and some further demographic questions, such as age, travel party size and composition, and gender. Some of these questions were generated by requests from the practitioners to satisfy their curiosity about issues other than interpretive design considerations. Such material was considered and analyzed in the report but was

Facility	Percent of tour group suggesting improvement (N = 142)	Percent of independent visitors suggesting improvement (N = 223)	Total suggesting improvement (N = 365)	Percent not very satisfied or not at all satisfied
Roads	19	37	33	65
Better Camping facilities	6	9	8	33
Visitor Center	23	35	31	30
Improve Toilets	11	10	11	23
Quality of Information in visitor center	20	20	20	21
Better signage/maps	3	15	12	15
More short walks	3	7	6	6

Table 1: Suggested improvements and levels of dissatisfaction with Flinders Chase National Park facilities in 1999 (N=365)

not directly used in the suggestions made about interpretive design. The questionnaire was pre-tested off site by the researchers; there were no issues with ambiguous wording and completion times tended to be of the order of 14 minutes. The multiple formats and response styles of the questions were a deliberate strategy to maintain respondent attention and to collect a mix of structured and respondent initiated information. The survey was only conducted in English.

Respondents

In total 710 visitors provided completed survey forms. There was a 97% response rate to the surveys, thus establishing the value of the direct distribution and collection method used in this study. The few respondents who refused were non English speakers. The required 300 person quotas were all exceeded in the time the researchers had for the work with 312 tour group visitors (44% of the total) and 398 independent visitors being sampled (56% of the total). The pre visit to Flinders Chase group consisted of 345 visitors (48% of the total) with 365 post Flinders Chase visitors (52%). The cross classification of these two quotas was relatively well balanced; pre-visit tour group visitors comprised 24% of the total, post-visit tour group visitors made up 20% of the total, pre-visit independent visitors amounted to 24% of the total and post-visit independent visitors were the most numerous at 32% of the total. In the overall sample, 47% of the total visitors were male. The distribution across the age ranges was quite evenly spread with between 17 and 21% for all age groups between 20 and 60 years with 17% over 60 years of age and 8% under 20 years old. In terms of visitor origins, 73% were Australian with 80% of these from three states (South Australia, New

% of the sample rating the following as Very Interesting	Pre Visit (N=345)	Post Visit (N=365)
1. Wildlife in FCNP	61%	72%
2. Interesting geographical features	52%	61%
3. Hints on how to see wildlife	52%	54%
4. How visitors can minimise impacts on FCNP environment	50%	51%
5. How visitors can minimise their impacts on wildlife	47%	48%
6. The giant animals that once roamed the area	41%	41%
7. Feral animal management	39%	35%
8. The plants of FCNP	36%	44%
9. Aboriginal occupation and connections	35%	27%
10. Ecosystems	32%	32%
11. Shipwrecks	31%	32%
12. Weed management	31%	27%
13. Fire management	30%	26%
14. Biodiversity	29%	29%
15. Lighthouses	25%	28%
16. Pastoral land use	14%	14%

Table 2: Interest in Topics for a New Visitor Center (N = 710)

South Wales and Victoria). The 27% of international visitors were mainly from Europe (40%), North America (20%), and the United Kingdom and Ireland (20%). Few visitors were travelling alone (4%) with most in spouse, family groups, or friendship groups (46%, 27%, and 23% respectively). On average, 80% had never been to Kangaroo Island before, although this figure was higher for the tour group visitors (90% compared to the independent travellers (66%).

Results

The main goal of the first study was to profile the interpretive needs of the visitors in 1999.

Some questions in the survey provide a context for the overall importance of these interpretive needs and some responses are directed at the preferred interpretive content. Table 1 provides an overview of the suggested improvements requested for the Flinders Chase National Park. The responses on this occasion are only from the post-visit visitors, as only such visitors can comment with authority on the existing provision of services. The data reported in Table 1 includes both the percent of tour group and independent visitors who seek the improvements as well as the percentage of respondents overall saying they were not very satisfied or not at all satisfied with this feature.

The information provided in Table 1 highlights some common services required for the whole park, but the needs for an improved visitor center with better quality information were key items identified. There was also a need for better maps and orientation as further interpretive and information requirements.

A more specific set of responses to the themes of interest in a new visitor center are depicted in Table 2. There was relatively little difference between the tour group and independent travellers in the overall themes of interest and accordingly, the information in Table 2 addresses only the pre-visit and post-visit responses.

There are only some small differences in the two groups portrayed in Table 2, but in a broad sense, the post-visit tourists have a slightly heightened interest in wildlife, the geographical features and the plants of the region. These specific interest are demonstrated further in the responses to the question, "What would you like to ask about the Flinders Chase National Park?" The relevant pre-visit and post-visit questions for both the tour groups and the independent visitors are depicted in Table 3.

In responses to the post-visit questions, there is evidence of a heightened appreciation of the need for information on how to see wildlife from the tour group visitors. The interest in the history and the original nomination of the park declines slightly and more questions directed at the management of the setting appear.

Action Research Implications

The findings from the 1999 survey provided some starting points for the interaction between the researchers and the park interpretive personnel as to how to better serve all visitors in a new visitor center. Several important summary points were discussed and extracted from the core results. The differences amongst separate groups of visitors were not large, particularly in terms of overall interest areas. This starting point had some fundamental implications permitting the design of a center with a small core of common purposes rather than necessitating a multi-layered resource reaching substantially different audiences. The interest in seeing wildlife better was a dominant concern. The interest level in the local farming community and lifestyle was low. Signage and maps were seen to be a weak point in the general array of visitor services. As visitors became familiar with the area, as indicated by their post-visit responses, there was an enhanced interest in the management of the setting, as well as its geographical features. The range of topics for possible inclusion in visitor center interpretive displays was large and included the extinct megafauna and the archaeological sites relating to their discovery, fire management, feral animal control, and shipwrecks. There was some interest in indigenous history, but rather less in pastoral land use. The desire for more short walks within the park could also be applied to the area adjacent to the visitor center and raised the possibility of walks extending from, returning to, and linked into the center's interpretive effort. The researchers' interest in mindfulness and the need to

Question – Pre-Visit	Tour group visitors (%) (N = 171)	Independent visitors (%) (N = 174)	Total pre-visit sample (%) (N = 345)
Where do I find/see wildlife?	11	22	19
Are visitors careless?	14	17	16
Why was F.C. selected for a National Park?	4	14	11
How much does it cost to maintain the park?	2	8	6
What can I see/do there?	5	4	4
Question – Post-Visit	**Tour group visitors (%) (N = 142)**	**Independent visitors (%) (N = 223)**	**Total post-visit sample (%) (N = 365)**
Where do I find the wildlife – information on finding the wildlife?	27	16	19
When will the roads be sealed/completed?	7	18	14
Will there be more guided tours/presence of guides in the future?	2	10	7
How is wildlife/environment maintained with large visitor numbers?	7	5	5
Why was F.C. selected for a National Park – history/geography of the Park?	2	6	5

Table 3: Most Popular Questions Respondents Would Like to Ask About Flinders Chase National Park

design engaging exhibits was reflected in some of the visitor survey responses with one category of suggested improvements as reported in Table1 specifically mentioning interactive and high-quality visitor displays.

On the basis of the survey and the discussion of the survey responses with the park staff, a report was written in the year 2000 outlining several guiding principles pertaining to and targets for the interpretive space in the new center. These suggestions, built specifically around the summary points extracted from the survey and discussed previously, were put together with no specific consideration of budgets and spaces available. The recommendations could not be read as technical guidelines but rather as overarching concerns and blueprints for desirable content guided by a mindfulness-inducing directive for the design of the displays. The key project personnel then took these superordinate concerns and worked with interpretation design fabricators and artists to construct the final displays.

The 2004 Survey Method Details

Procedure

The 2004 survey was conducted by five university student volunteers who spent some time with the researchers developing their interviewing skills. Since it was important to access visitors who had been to the newly constructed center, the survey sites in the 2004 study were restricted to the park itself, the visitor center exit areas, and the adjacent car park area. An explicit instruction for the volunteers was to approach all available visitors exiting the park or visitor center car park, but a requirement of the study was that the visitors had to have completed both their time at the visitor center and the park before returning the survey. The researchers set quotas for the number of independent travellers and the number of visitors accessing the park using tour group companies. A total target sample was established as 200 independent travellers and 200 tour group visitors. In other respects the approach to the visitors followed that used in 1999, which was to remain in the vicinity while visitors completed the survey they had been asked to complete. A small exception to this procedure in 2004 was that some large tour groups took the surveys with them and promised to return a set of surveys to the research team using a drop-off box at a transport or ferry terminal node. The return rate for the surveys in 2004 was 89%, with some of the tour group visitors who accepted the survey forms apparently either not completing them or being unable to return them to the collection points. There were some visitors, as in 1999, who did not accept the surveys due to their expressed concerns about their English language skills. The surveying was conducted in the last week in September including a weekend and five days of school holidays. It was equivalent to the period in 1999.

Survey Questions

The format of the 2004 survey followed the style of the 1999 survey form. The participation of the practitioners was again important in checking and reviewing the questions, thus ensuring that all parties were confident that the necessary array of information to make an assessment of the visitor center interpretation was collected. There was a mix of open-ended and closed questions with a variety of response scales to maintain participant attention to the task. In the 2004 survey, participants were asked for their responses to questions concerning their motivation for visiting the Flinders Chase National Park, wildlife viewing experiences, time spent in the park and areas visited, the importance of a range of visitor

Motivation	Percent rating as important	
	1999	2004
See wildlife	69	68
Get close to nature	61	59
Experience wilderness	56	56
Visit scenic spots	40	51
Learning experience	33	29
Get away from others	21	17
Rest and relaxation	31	27
Be physically active	18	21
Someone else wanted to come	17	13
Visit historic site	23	24
Spend time with family/friends	37	27

Table 4: Comparison of the motivational profiles of the 1999 (N = 710) and 2004 (N = 450) samples

center services (six closed questions), an estimate of the time spent at the interpretive displays, the most enjoyable features of the center, their perceptions of what they thought they had learned and the extent of this learning, further questions they would like to ask about the park, their satisfaction with the park overall (0 to 10 scale), their wildlife experience (0 to 10 scale), and items pertaining to their satisfaction with features of Flinders Chase National Park (1 to 4 scale). There was an identical list of questions recording visitor demographics and trip characteristics as in the 1999 survey. The survey was only provided to potential respondents in English.

Respondents

A total of 450 respondents were surveyed in the allocated time period. The number of independent travellers surveyed was 239 and the number of tour group passengers was 211. These figures exceeded the set targets for the study. It was agreed with the practitioners and based on sample survey statistical design that a total of 400 respondents overall would permit a good comparison with the 1999 data, since there was less pressure to assess detailed sub-divisions of the data on this occasion (Nardi, 2003).

Feature	% of Sample who reported the feature as most enjoyable*
Fossils	18%
Touch table	10%
Whole Center	8%
Animal skins	8%
Touch screens	7%
Information on animals	6%
Prehistoric animal paintings & information	5%
Historical information	5%
Aboriginal story	4%
Hands on/interactive display	3%

*Only one response per visitor

Table 5: Most Enjoyable Feature of Flinders Chase National Park Visitor Center (N=450)

Time	% of Sample
No time at all spent at interpretive displays	24%
10 minutes or less	22%
11-20 minutes	26%
21-30 minutes	21%
31-60 minutes	4%
>60 minutes	3%
For all visitors who actually used the display area, mean time spent at interpretive displays was estimated as 22 minutes.	

Table 6: Visitors estimates of the time spent at interpretive displays at Flinders Chase National Park Visitor Center (N=450)

Outcome	Percent of the sample who spent time in the interpretive center
How much they thought they learnt	
Not much	4%
A little	22%
Some	47%
A lot	27%
Main things learnt	
Information about wildlife	18%
Formation of the island/geology	14%
History of the area (general)	8%
Aboriginal history	5%
Conservation issues	5%
Mega fauna	4%
Flora	1.5%
Shipwrecks	1.5%

Table 7: Visitor perception of their learning from interpretive displays in the Flinders Chase National Park Visitor Center (N=342)

Topic area	Learnt not much / a little (N=89)*	Learnt some (N=161)	Learnt a lot (N=92)
Wildlife	61%	86%	74%
Geology	39%	34%	48%
General History	19%	21%	23%
Aboriginal History	16%	8%	11%
Conservation	3%	1%	5%
Mega fauna	3%	1%	2%
Flora	3%	5%	2%
Shipwrecks	-	3%	7%
Park Activities	3%	1%	5%

*Percentage figures refer to columns and multiple responses allowed in terms of indicating topics where visitors felt they had learned certain amounts.

Table 8: Topic areas in the visitor center and visitors' self-reported amount learnt (N=342)

The 1999 and 2004 samples are broadly comparable, especially in terms of previous experience, and the number of intrastate visitors (23% and 25%) and age (means of 48 years and 45 years) although there are more international visitors proportionately (45% to 26%) and more families in the 2004 data (57% to 22%). The major motivational and wildlife viewing differences that emerged in the comparison of the two groups are reported in Table 4.

The motivational profiles as featured in Table 4, even more than the demographic profiles, confirm the strong similarities for the two samples, as the rankings and percentage agreements are closely aligned.

Results

The key results from the 2004 survey can be used to define the perceptions of the interpretation at the newly constructed Flinders Chase National Park Visitor Center. The value and the importance of the visitor center and its attributes were assessed, and from

the structured response set, five items were described as very important by a high percentage of visitors in their responses to the new center. The three interpretive items of most interest were information to improve and plan my visit experience (rated as very important by 50% of the respondents), how to find my way around the park (rated as very important by 38% of respondents), and detailed information on wildlife viewing (rated as very important by 28% of the respondents). Two functional items (the toilets and the café) were also rated as very important features by 55% and 18% of respondents respectively.

Additionally a number of measures were recorded which assist in commenting on the visitors' responses to the interpretation from the 2004 survey. Information on the time reported as being spent at the visitor center and the features of the center seen as most enjoyable are presented in Tables 5 and 6.

The results reported in Table 5 and Table 6 together show that there is a spread of interest in the themes of the visitor center interpretive materials and that this interest occupies visitors for a reported average of over 20 minutes. In Table 7 and Table 8 the visitors self-reported learning also provides a positive appraisal of the interpretive efforts. Only 4% of respondents report that they learned not much while 75% of visitors said they learned quite a lot or a lot.

It can also be seen in Table 8 as a positive feature of the interpretive displays that there is a widespread distribution of the main things which visitors felt they learned. This spread of the main things learned can be seen as resulting from the provision of information to suit many interest areas. Further, in the 1999 data as already reported, visitors indicated that they most wanted wildlife information. It is noteworthy therefore that almost one fifth of the 2004 visitors thought that information about wildlife was the main thing they had learned from the center.

There are also results from the 2004 survey that provide findings that visitors to Flinders Chase National Park are very satisfied with their experience. An independent t test comparing the 1999 mean (8.0) and the 2004 mean (8.9) was statistically significant: $t = 21.56$, $p<.01$. Previous research undertaken by the research team in other Australian settings has demonstrated, using the same kinds of scales, that this 2004 score of 8.9 is equivalent to the very best reef and rainforest visit satisfaction scores obtained from visitors in Queensland and above visitor satisfaction scores with wildlife in the well publicized wildlife sites at New Zealand's Otago Peninsula It is possible to interpret the scale of satisfaction as above 8.5 being equivalent to outstanding, 8.2 to 8.4 very good, 8.0 to 8.2 as good, 7.5 to 7.9 as sound, below 7.5 as moderate, and below 7.0 as requiring attention and definite improvement (cf. Noe, 1999).

Additionally this very high level of satisfaction is consistently manifested throughout the component parts of the experience which were measured on the 0 to 4 scale, where 3.5 is outstanding, 3.0 to 3.4 very good, 2.6 to 2.1 good, and below 2.1 is sound. In the 2004 results, all the component scores were over 3.0, which indicated no weak links or trouble spots in the site specific satisfaction scores. This finding is supported by high intention-to-return scores and by a broad distribution of the best features of the FCNP experience. No one feature dominated, indicating that there was not a single reliance on one site for the overall satisfaction score. In 2004, in the open-ended questions on what visitors would like to ask park staff, there is a decline in the overall information requested with only 7% seeking wildlife-based information compared to 19% reporting such questions in 1999. Satisfaction

with wildlife viewing rises significantly from 7.9 in 1999 to 8.4 in 2004 (independent t test: $t=14.56$, $p<.01$).

Discussion

Much has changed in the world, in the world of tourism, and in the presentation of Flinders Chase National Park since 1999. The global tourism environment has seen terrorism and security threats that have been far-reaching in scope (Jafari, 2005). Tourist demand for certain kinds of tourism products has been changing with a notable increase in an emphasis on time spent with friends and family in secure settings (South Australian Tourism Commission, 2004). The standard of interpretive facilities and customer care in international settings continues to expand and improve and the Flinders Chase National Park Visitor Center is an excellent local example of this upgrading of facilities to enhance visitor experience and promote sustainable tourism.

The 2004 visitor survey provides, in overall terms, a very positive appraisal of the management of the Flinders Chase National Park tourism experience and the center that serves that aim. It endorses comprehensively the effectiveness of the recently constructed interpretation at the visitor center in terms of visitor self-reported learning and satisfaction. In a modest way these positive outcomes support the action research model pursued in this study and endorse the application of the mindfulness model as a guiding set of ideas in setting up the display materials.

A distinctive feature of the survey results is the high level of motivation for viewing wildlife. Compared to other Australian settings where wildlife is present, the results still stand out as a dominant interest. This motivational background is important in interpreting the findings, as such high expectations might be difficult to satisfy. To be more specific, the visitor evaluation of the visitor center itself is very positive. The enjoyment of the visitor displays is very good (3.2) on the structured four-point scale, there is considerable variety in the most enjoyable feature reported, again indicating no single reliance on any one outstanding exhibit, and the mean time spent by those visiting the interpretive displays was estimated to be 22 minutes. Mean scores can be somewhat misleading in terms of skewed distributions, with a few very long times raising the average. Such distortions are not evident in Table 6, with 28% of visitors spending more than 20 minutes in experiencing the exhibits. This time refers only to displays in and around the building.

Additionally, it can be strongly argued that the overall satisfaction score with viewing wildlife (8.4 on a 0 to 10 scale in 2004) can be interpreted as a very good satisfaction score and is a reflection in part of the success of the interpretive center. This link is confirmed by the change in question asking from the 1999 to the 2004 survey. In the 1999 survey, the dominant question asked was how to see wildlife 19%, whereas in 2004 it had declined to 7%. At the same time the assistance for seeing wildlife and the cues provided in the center can be seen to underlie the improvement in satisfaction with wildlife viewing (7.9 in 1999 and 8.4 in 2004, t test $=14.56$, $p<.01$). This increase in wildlife viewing satisfaction mirrors a statistically significant total increase in satisfaction with the FCNP experience which also rises from 8.0 in 1999 to 8.9 in 2004. This is a large and important jump, taking the qualitative meaning of the total assessment from good to outstanding (c.f. Pearce, 2006). It is a clear result of enhanced visitor satisfaction across the time span considered.

This detailed study of one visitor center, albeit one representing an expensive effort at interpretation should not be seen simply as a locally relevant example of action-oriented

interpretation research. Instead, the value of the study lies in the cycle of action research and practitioner-researcher interaction which underlies this study and which in the larger view finds the effects of research induced change to be successful. It is very common in the research literature in tourism interpretation and leisure studies to note in the final remarks of a paper that managers should pay attention to the research that has just been presented. The research reviewed here is an actual instance of managers paying attention to such research. The study suggests there is promise in an action-research approach to interpretation studies. There is, of course, always more to do in evaluating interpretive efforts and actions. In the case of the visitor center studied here, recommendations for future studies to maintain the rapport between the researchers and the South Australian National Parks and Wildlife Service could include the pursuit of several agendas. Visitor-based studies with tour groups of different types may unearth some specific issues with certain operations. Non-English-speaking visitors could be assessed with appropriately translated surveys and may represent a hidden group of visitors needing more attention. A check on the satisfaction scores in a different season could assess the year-round adequacy of the interpretive information and visitor center functions. A wider approach to the evaluation of the center that includes administrative, community, and tour operation perspectives would add to the highly positive visitor appraisal conducted in this study. Further work can also be recommended and returning in another two to three years for a second visitor center evaluation could indicate the success of maintaining the quality and provision of the services. Finally, parallel appraisals of other visitor centers and iconic sites in South Australia and beyond would provide important comparative information.

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