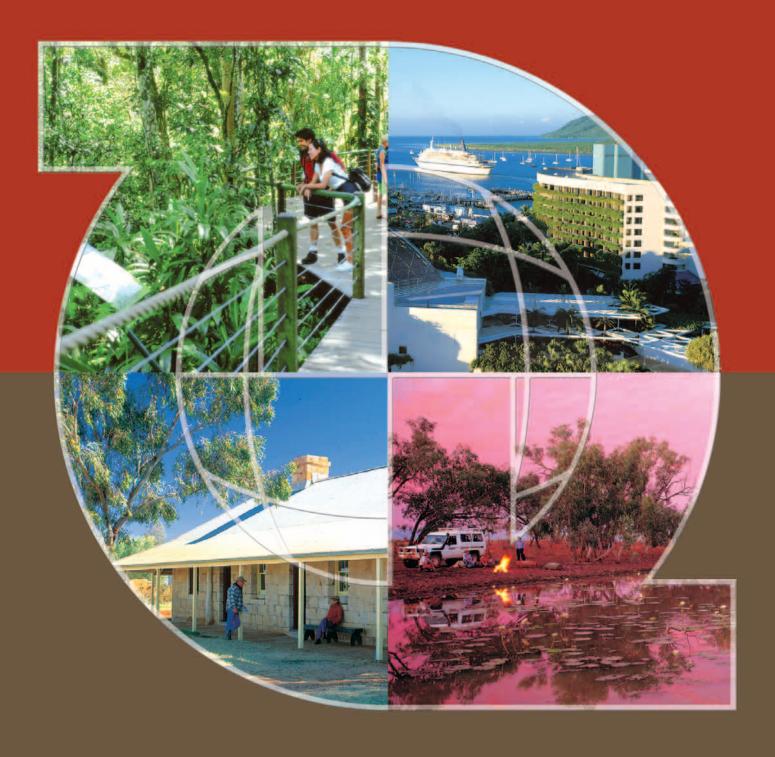# BEST PRACTICE INTERPRETATION RESEARCH FOR SUSTAINABLE TOURISM
Framework for a New Research Agenda

Stephen Wearing, David Archer, Gianna Moscardo and Stephen Schweinsberg

SUSTAINABLE
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Technical Reports

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ABSTRACT

This report outlines the development of a framework for a new interpretation research agenda relating to sustainable tourism. It proposes a classification system for evaluating research and includes selected case studies. Four main research areas – to mitigate visitor impacts, to enhance tourists' experiences and satisfaction, to encourage positive attitudes toward nature conservation, and to link outcomes to corporate/strategic objectives – have been identified and are accompanied by a number of questions and recommendations to direct future research.

ACKNOWLEDGEMENTS

SUMMARY

Objectives of Study

The objective of this research project was to develop a framework for a new agenda for interpretation research to aid in the sustainability of tourism in Australia's national parks and other protected areas.

Methodology

The study comprised a desktop review and collation of existing literature, research and knowledge. The report includes an examination of:
- the relevance of behavioural theory in interpretative research;
- objectives for interpretation, particularly in relation to sustainable tourism; and
- the relationship between interpretation and corporate and strategic planning.

  In developing the framework for a new research agenda, the authors:
- proposed a classification system for interpretation research;
- identified criteria for evaluating interpretation research; and
- applied this to case studies.

  The framework for a new research agenda is presented as a series of questions and recommendations to stimulate debate and provide direction for future research focusing on interpretation to facilitate sustainable tourism in protected areas.

Key Findings/ Opportunities for Future Research

A major role of researchers is to identify ways to minimise the negative affects of tourism in natural areas, such as national parks. To assist in this, it is necessary to develop interpretation strategies that are relevant to the organisational objectives of park management agencies. The authors have concluded that for this to occur studies should focus on:

- **Research on interpretation to mitigate visitor impacts** - Research on this topic could focus on cognitive responses (learning, knowledge acquisition or information processing) and behavioural responses (actions or inactions of target audiences).

- **Research on interpretation to enhance tourists' experiences and satisfaction** – Research in this area will likely focus on the effectiveness of various local, industry-based interpretation strategies in satisfying visitor expectations. A common topic of discussion concerns whether high satisfaction necessarily translates into a positive learning (interpretation) experience.

- **Research on interpretation to encourage positive attitudes toward nature conservation** – Research in this area will focus on the ability of interpretive programs to influence existing behavioural tendencies regarding nature conservation. Consideration must be given to the existing social norms regarding interaction with the environment and the appropriateness of interpretive strategies for influencing different groups in society.

- **Research on interpretation to link outcomes to corporate/strategic objectives** – Research in this area will focus on how interpretation (and education) is defined and used in corporate and strategic planning. This will involve research on the development of interpretive services, based on evaluation studies, which relate to organisational objectives.

Chapter 1

INTRODUCTION

The multiple frames of reference for determining the success of protected area management has led researchers to consider whether the three dimensions of sustainability (social, environmental and economic) are congruent or conflicting in a national park context (Herremans & Reid 2002). National park managers must seek to protect and conserve natural and cultural resources for future generations, whilst also providing high quality enjoyable experiences for people. These seemingly conflicting missions result in an uneasy relationship between conservation objectives and tourism (Shultis & Way 2006).

Those responsible for planning and managing tourism must:
- Understand the range and nature of tourism's environmental, social, cultural and economic impacts;
- Understand tourist values, knowledge, attitudes and behaviours as these influence:
  - Decisions to purchase a tourist experience,
  - Behaviour while participating in the experience,
  - Evaluation of the experience, and
  - Post trip choices and responses.
- Develop a variety of tools to:
  - Minimise or eliminate the negative impacts,
  - Create or enhance the positive impacts,
  - Enhance tourist experiences, and
  - Enhance tourist awareness of their linkages to the environment (Krippendorf 1987).

Given these challenges, this report aims to:
- Illustrate the value of interpretation as a management tool;
- Demonstrate the value of research in improving interpretation practice; and
- Identify gaps in the research that need to be addressed.

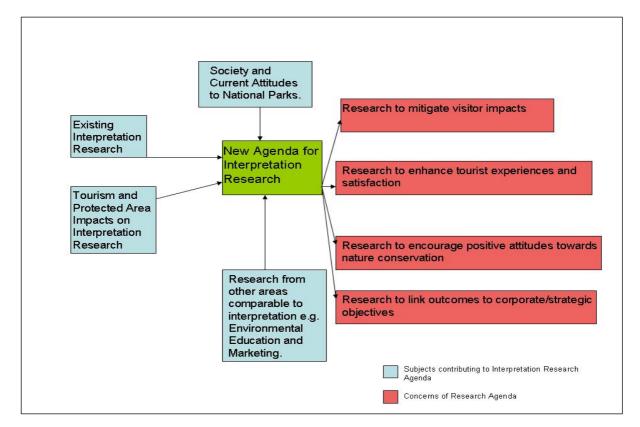Figure 1 shows the inputs that contributed to the development of this framework and the research areas identified.

Figure 1: Research Framework

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Chapter 2

BACKGROUND

National parks have become an important part of the Australian tourism landscape, particularly for the international tourism market. Figures from the 2004 National Visitor Survey indicated that 1.8 million people, or 64% of Australia's international tourists, visited a national park at least once over the course of their time in Australia (Tourism Australia 2005). Research has shown that tourism has the potential to negatively affect the biophysical environment of protected areas (Gee & Fayos-Sola 1997; Hammitt & Cole 1998; MacClaren 2006; Page & Dowling 2002). In 2005, the STCRC conducted Problem Identification Workshops to identify a range of visitor-induced management problems that local interpretation commentators felt were a priority in terrestrial parks and protected areas (Ham, Weiler, Brown & Curtis 2005; Hughes 2005; Ham & Hughes 2005).

Balancing conservation responsibilities and visitor expectations must increasingly be achieved within an economic rationalist ideology that has restricted national park agencies' research capabilities. Potential for the tourism industry to contribute to the sustainable management of national parks and protected areas has become a major topic for discussion in Australia. Research in this area includes the 2004 Tourism and Transport Forum (TTF) project entitled 'A Natural Partnership: Making National Parks a Tourism Priority' which explored *how the full potential of Australian Protected Areas as tourism attractions can be realised, while prioritising the protection of their conservation values* (TTF 2004: 4). The 'Green Paper', also recognised that:

> There is already a consultative framework which has been established to facilitate improved cooperation between national parks and tourism agencies. This could be built upon to improve communication and achieve outcomes which benefit both tourism and the environment (Australian Commonwealth Government 2003)

In recent years, national park authorities have shown signs of being more outwardly focussed and more responsive to community needs and expectations. Corporate plans reflect a more market-driven strategic direction involving partnerships with tourism bodies, more active promotion of recreation and tourism opportunities and a more conscious effort to set clear parameters for public use of natural areas.

Defining Sustainable Tourism

Although many researchers have used the term sustainable tourism there is substantial discussion over exactly what this term means, and it is important to begin any discussion with a definition. For the purposes of this report sustainable tourism is defined through two core principles (adapted from Moscardo 2003: 113-114):

1. *Quality.* Sustainable tourism should provide a *quality experience* for tourists, while contributing to improved *quality of life* for the host community, including maintaining and/or enhancing the *quality of the destination environment*.
2. *Continuity.* Sustainable tourism should be designed to ensure the *continuity of the natural and cultural resources* it uses, *continuity of support from host communities* while maintaining *continuity of tourist demand*.

Defining Interpretation

Enos Mills is credited with developing the concept of interpretation, as well as founding the nature guide profession (Kohl 2005). Freedman Tilden, another of the early architects of interpretation philosophy (Beck & Cable 2002), defined interpretation as *an educational activity which aims to reveal meanings and relationships through the use of original objects by first hand experience and by illustrative media, rather than simply to communicate factual information* (Tilden 1977: 8-9).

More recently, Interpretation Australia (2004) defined interpretation as a means of communicating ideas and feelings which help people understand more about themselves and their environment. The United States National Park Service defines interpretation as the process of helping each park visitor find an opportunity to personally connect with a place (2003a).

Objectives for Interpretation

Knudson, Cable and Beck (1995: 13) listed six objectives for interpretation, indicating the wide scope of activity inherent in the concept:

1. to increase the visitor's understanding, awareness and appreciation of nature, of heritage, and of site resource;
2. to communicate messages relating to nature and culture, including natural and historical processes, ecological relationships, and human roles in the environment;
3. to involve people in nature and history through first hand (personal) experience with the natural and cultural environment;
4. to affect the behaviour and attitudes of the public concerning the wise use of natural resources, the preservation of cultural and natural heritage, and the respect and concern for the natural and cultural environment;
5. to provide an enjoyable and meaningful experience; and
6. to increase the public understanding and support for an agency's role, its management objectives and its policies.

Behavioural Theory and Interpretation

Interpretation can be considered a form of learning that embraces the educational concept of communicating natural, physical, cultural and historical information; encompassing philosophy, psychology, sociology and educational theories to assist in building awareness and developing appropriate attitudes and behaviour patterns. Accordingly, interpretation is seen as being an important way of acquainting society with its life support system – the environment (Beckmann 1991).

Knudson et al. (1995) suggest that the primary motive of agencies and individual interpreters is to lead people to greater concern and intelligent action to sustain the natural and cultural environment in which they live. Achieving this, however, requires a thorough understanding of the psychological underpinnings of tourist motivation and satisfaction.

Tilden (1977 in Hwang et al. 2005: 144) notes that the first principle of interpretation *is to provide interpretation that relates to the visitor's life experiences*. Seminal theorists on the tourist experience such as Cohen have argued that *different kinds of people may desire different modes of tourist experiences* (1979: 80 in Uriely 2005: 205). Recognition of links to psychology and sociology is reflected in the realisation amongst interpreters in the United States that they require an understanding of park visitors' individually formulated belief systems (Chen, Wang & Larsen 1999). It is also reflective of work on the notion that sustainability and a human being's relationship with nature is fundamentally a state of mind, as opposed to a policy position (Bonnett 2002).

In discussing how interpretation research may effectively focus on individual experience constructs, it should be noted that researchers have at their disposal a number of theories that acknowledge the range of factors that influence behaviour. Key theories used within the interpretation field have been summarised by Littlefair (2003), see Table 1.

Table 1: Selected theories of behavioural change

Theory or Model	Authors	Key Concepts
Model of Persuasion	Manfredo & Bright 1991	Behaviour is a function of message elaboration, which is measured by the number of thoughts generated, acquisition of new beliefs and changes in old beliefs.
Elaboration Likelihood Model	Petty & Cacioppo 1981 Petty & Cacioppo 1986 Petty et al. 1992	Motivation and ability to process arguments determines whether persuasion is via central or peripheral route. The central route involves high elaboration of message, whereas the peripheral route influences through cues tangential to message.
Theory of Planned Behaviour and Theory of Reasoned Action	Ajzen 1991 Ajzen & Fishbein 1980 Fishbein 1967 Fishbein & Ajzen 1975	Human behaviour, or at least behavioural intention, is consistent with attitudes, and these attitudes are consistent with beliefs. Behavioural intention is affected by attitude towards behaviour (behavioural beliefs and evaluation of those beliefs), subjective norm (normative beliefs and motivation to comply with those beliefs), and perceived behavioural control (control beliefs).

Norm Focus Theory	Cialdini et al. 1990 Festinger 1957 Reno et al. 1993	People behave according to how they think they should behave, based on social norms. Norms are either descriptive (what we think most people do) or injunctive (what we think is socially acceptable).
Mindfulness	Langer 1989a Langer 1989b Moscardo 1999b	In any situation a person can either be mindful or mindless. Mindfulness is influenced by setting factors (such as displays, signs, maps and walks) and visitor factors (such as familiarity with site, motivation and companions).
Model of Responsible Environmental Behaviour	Hines et al. 1986/87	Intention to act, and hence responsible environmental behaviour, is influenced by action skills, knowledge of action strategies, knowledge of issues and personality factors (including attitudes, locus of control and personal responsibility).
Conceptual Framework of Responsible Environmental Behaviour	Cottrell & Graefe 1997	Behaviour influenced by variables categorised into socio-demographic, experience, general environment, specific issue and situational factors.

(Source: Littlefair 2003 p. 31)

Because of the complexity of behavioural change, it is likely that more than one model or theory will continue to be used in interpretation research. The authors feel that in the future the Theory of Planned Behaviour, the Elaboration Likelihood Model and the Model of Responsible Environmental Behaviour should continue to form the basis for the theoretical understanding of how interpretation may influence behaviour within the context of sustainable tourism.

The prioritisation of these theories can be justified with respect to Weiler and Ham's (2006: 237) assertion that there are three overarching constructs of interest that interpretation may try to influence: cognition, affect and behaviour.

Wearing and Neil (1999) note one reason why interpretation is considered effective is that it works with, rather than against, the visitor in regulating and enforcing desirable behaviours and practices. However, this is only the case if an individual's desired experiences are commensurate to the aims of the park management agency. In New South Wales national parks Chapman (1995) noted that the desired experiences of bushland users were often connected to the tranquillity of nature, the solitude afforded to visitors and the desire to do things with family; as opposed to a desire for educational activities provided through guided walks, visitor centres and the like.

Interpretation Delivery and Techniques

Interpretation may be delivered off-site and on-site and be in either a 'personal' (e.g. guided walks) or 'non-personal' (e.g. brochures) form. Typical interpretive techniques and examples are shown in Table 2.

The purpose of on-site interpretation is to:
- enrich the visitor experience of parks and other assets under the management of national parks;
- assist people to develop a keen awareness, appreciation, and enjoyment of the value, features and issues of natural and wilderness areas; and
- educate visitors about appropriate behaviours to alter use patterns – attitude and value change.

Table 2: Interpretation techniques

Interpretation Technique	Selected Academic References	Common Approaches in National Parks	Australian National Park Examples
Visitors Centre/ Discovery Centre	Burke (2002), Evans (1999), Fallon & Kriwoken (2003), Heffernan (1998), Howard (1999/2000), Hughes and Morrison-Saunders (2005), Moscardo and Pearce (1997), Orams (1997), Prince (1982), Pearce	Visitor Centres typically act as the starting point for people looking to explore the park or take part in an organised ecotourism activity. They are a place where visitors can receive information about the park and the activities they can partake in. The relative remoteness of the park will often influence the level of facilities.	SkyRail Rainforest Cableway (QLD), Scenic Railway (NSW), Kurnell (Botany Bay NSW), Brambuk - The National Park & Cultural Centre (Grampians National

	(2004), Staiff, Bushell and Kennedy (2002), Stewart et al. (1998), Tubb (2003)	Not all national parks in Australia have formal centres.	Park), Cradle Mountain National Park Visitor Centre (TAS)
Guided Tours/Walks	Armstrong & Weiler (2003), Beaumont (2001), Black and Weiler (2003), Chen et al. (1999), Hendricks et al. (2001), Howard (1999/2000), Hughes (1991), Luck (2003) Madin & Fenton (2004), Moscardo and Pearce (1997), Orams (1997), Roggenbuck & Berrier (1982) Ryan & Dewar (1995), Stoep & Gramann (1987)	Guided tours of national parks are typically offered by the local park authority with the aim of educating visitors about native flora and fauna. Independent nature tourism companies are also prominent, as are Aboriginal tours. Some nature tourism tours have a specific educational/interpretive focus, others are simply sightseeing based.	Bald Rock National Park (Woollool Woollool Aboriginal Culture Tours), Ben Boyd National Park (Green Cape Light station Tours)
Signage/ Bulletin Boards	Ballantyne & Hughes (2003), Beaumont (2001), Cole et al. (1997), Hughes & Morrison-Saunders (2005), Mallick & Driessen (2003), Smith-Jackson & Hall (2002), Winter et al. (2000)	Signage forms one of the most cost efficient forms of management advertising in national park environments. Evidence of comprehensive strategies for using signs as an interpretation tool is limited. Individual national parks have however made an effort in this regard over the last five years. Signage in national parks is often limited to the provision of travel information, i.e. the facilitation of easy movement of park visitors. In some cases signage is particularly focussed on visitor safety.	Fraser Island (Great Sandy National Park), Dorrigo National Park (NSW), Tree Top Walk (Valley of the Giants Western Australia), Cradle Mountain National Park (Tasmania), Mount Kaputar National Park (NSW), Kakadu National Park (NT)
Brochures	Bass et al. (1989), Beaumont (2001), Lawton & Page (1997), Lawton & Page (1997), Moscardo and Pearce (1997), Moscardo (1999a), Parkin & Parkin (2001), Roggenbuck and Berrier (1982), Parkin and Parkin (2001), Winter et al. (2000), Young and Witter (1994)	Visitor brochures are produced by most park management agencies with examples available on line and through visitor centres. Brochures may focus on the education of tourists regarding their impacts on the environment, outline how tourists may enhance their experiences in the national park and educate tourists re: sustainability management activities being undertaken by park agencies. The ability of brochures to be cheaply translated into foreign languages makes them a useful tool for educating international visitors.	*Protecting Biodiversity*, Great Barrier Reef Marine Park Authority, *Cycling in Victoria's Parks*, Parks Victoria, *Land for Wildlife*, NSW National Parks and Wildlife Service
Media **(Television, Videos, Radio, Books)	Moscardo and Pearce (1997), Smith-Jackson & Hall (2002), Stewart et al. (1998)	Often seen as an adjunct to the education of tourists in visitor centres. The use of visual and audio aids can have the effect of acquainting visitors with the characteristics of the natural environment and threats to this environment prior to entering the park proper.	SkyRail Rainforest Cableway, Queensland (video, interactive computer displays, touch tables, exhibits), Scenic Railway (NSW)

Notes:

* In the case of the Great Sandy National Park on Fraser Island, signage is often focussed on educating visitors about the dangers of interaction with dingoes. Signs advise people to be mindful of small children and outline what people should do if threatened.

** This can also be achieved by visitors viewing park agency websites, which commonly contain material on different types of parks and the activities permissible, e.g. www.nationalparks.nsw.giv.au/parks.nfs/WebMgt/

The purpose of off-site interpretation is to:
- Pre-visit:
  - inform prospective visitors of existence of site and its resources.
  - ensure visitors' expectations are realistic, that images portrayed are relevant and aligned with park management's views.
  - ensure that visitors have an understanding of the natural resource.
- Post-visit:
  - provide material to extend visitor's on-site experience.

Chapter 3

INTERPRETATION PLANNING

Interpretation and Strategic Planning

Education and interpretation are recognised components of the 'Commonwealth Ecotourism Strategy', the 'National Competency Standards for Ecotour Guides', the 'Nature and Ecotourism Accreditation Program' and the 'EcoGuide Certification Program' (Armstrong & Weiler 2003). In the United States, the National Association for Interpretation (ND) has produced a multi-scale certification program for people engaged in interpretive activities and initiatives of the US National Park Service (2003b) include the development of training curriculum materials and an interpretive development program.

The United States, 'Leave No Trace' strategy has been developed since 1990 to *provide a unified educational response to resource and experiential impacts* (Marion & Reid 2007: 7). In Australia, the 2005 'Tasmanian Thematic Interpretation Planning Manual' was developed *to assist the Tasmanian tourism industry with the adoption of thematic interpretation as part of the Tasmanian Experience Strategy* (Ham, Housego & Weiler 2005: 1).

Globally, a hierarchy of interpretation plans/strategies exist. Parks Canada (1997) revised its interpretive planning process to focus on three levels: regional interpretive systems, park plans and interpretive management units. Park specific plans e.g. 'The Grand Canyon National Park Comprehensive Interpretive Plan' (National Park Service 2002) is one of approximately 18 'Long Range Interpretive Plans' prepared by the US National Park Service (Harpers Ferry Centre 2007).

In Australia, many agencies produce strategic documents focussing on interpretation and visitor services e.g:

- Brisbane City Council (1997) *Natural Areas Communication Strategy*, unpublished document.
- Centennial Park and Moore Park Trust (1996) Interpretation Strategy 1996–1998, unpublished document.
- Environment ACT (1998) Tidbinbilla Nature Reserve Interpretation Strategy, unpublished document.
- Jill Sheppard Heritage Consultants (2003) Kosciuszko National Park Currango Historic Precinct: Conservation Management & Interpretation Plan (Executive Summary Draft), National Parks and Wildlife Service, Sydney.
- Phillip Island Nature Park (1998) Interpretation Plan Development – The Visitor Experience, unpublished document.
- Queensland Department of Environment and Heritage (1998) Strategic Plan for Public Contact in the Division of Conservation 1998–2000, unpublished document.
- Shire of Roebourne (ND) Jarman Island Cultural Interpretation Plan [http://www.roebourne.wa.gov.au/ pdf/Jarman_Island_Interpretation_Plan.pdf].

In addition to North America and Australia, interpretation work specific to individual national parks has been completed in countries such as Venezuela (Blanco 2002).

Interpretation and Park Agency Corporate Planning

Most protected area agencies and tourism industry partners consider interpretation to be a core function of protected area management (cf. Earthlines Consortium 1999). For example, a key function of the NSW National Parks and Wildlife Service is to *promote community awareness, understanding and appreciation of the conservation of nature and our cultural heritage* (National Parks and Wildlife Service 2005). To date, however, this has not translated into a broad commitment to research programs. There is no existing legislative basis for park interpretation plans and the percentage of budget allocated to research and programs in this area is small (Bolwell 1996; Department of Natural Resources and Environment Victoria 1999).

The 'Best Practice in Park Interpretation and Education' (Department of Natural Resources and Environment Victoria 1999) suggested that there have been improvements in the last decade in the use of interpretation in specific aspects of park management. Nonetheless they maintained that the translation of policy into action is often not systematic or integrated. No agency surveyed by the Department of Natural Resources and Environment Victoria (1999) indicated the presence of a clear and comprehensive system that aligns interpretation activities with corporate objectives; develops programs methodically and evaluates the factors critical to their success. Dutton (1992) similarly noted that much interpretive planning is not conducted systematically by using clear objectives and policies. Reasons for this include the fact that interpretation is not always integrated with other communication and visitor management functions. This has been particularly

obvious in the area of marketing, which is often considered a separate function within agencies.

Environmental Education and Marketing

As visitor expectations affect what they do and how they behave on-site, there is a powerful argument for park managers to prioritise the links between environmental education and marketing. Archer and Wearing (2002) note that park managers have only sporadically considered the issue of marketing:

> The larger interests of the community and environment are at risk of being overwhelmed by market-place and commercial interests associated with the private sector. Furthermore marketing expertise within Australian park management agencies at the planning and policy levels has historically been either non-existent or sparingly applied, and political and resource realities have also been factors in the reluctance to subsume marketing strategies within park management (Archer & Wearing 2002: 33-34).

Environmental education has been a concern of the United States National Park Service since 1917 when the first National Park Service Office of Education was established (Ernst & Stanek 2006). Ham (1997), however, referred to the need for closer links between the environmental education sector and the promotion of environmental ideologies in the United States. To achieve this Ham (1997: 2) proposed that environmental education be perceived as a marketing strategy, *in which key audiences are identified because of the ways in which they contribute or could potentially contribute to specific environmental problems.*

The centrality of target audiences both to marketing strategies and environmental education shows the value in linking these subjects in research work.

Evaluating Interpretation

In September 1994, the Australian and New Zealand Environment Conservation Council (ANZECC 2006) Standing Committee on Conservation agreed to establish a Best Practice Program to be developed by the Working Group on National Parks and Protected Area Management. The report 'Best Practice Guidelines for Park Interpretation and Management' from 1998 is one of a number of national projects initiated under the Best Practice Program.

This latter report details how public organisations typically have assessed their performance in terms of process (e.g. compliance with legislation) or activity (e.g. dollars spent, numbers employed, etc). The other method of assessing performance is on the basis of outcomes (e.g. goals achieved, success of services, etc). This latter method, while commonplace in the management of commercial organisations, is a relatively new concept for many government agencies including Australian national parks authorities.

Outcome-based reporting is based on:

- goals (specific, issue-based);
- standards (outcomes, clear relationship to goals);
- performance indicators (measurable outcomes);
- reporting; and
- feedback into management.

The benefit of applying this model to national parks is that it clearly relates to the multiple goals of protected area management in the Australian context. Further it encourages the development of the interpretation profession in Australia via benchmarking and best practice sharing.

Chapter 4

A CLASSIFICATION SYSTEM FOR INTERPRETATION RESEARCH

When evaluating the current research on interpretation, four major research areas have been identified for effective interpretation. While there will inevitably be some form of overlap, interpretation research may be classified as:

1. **Research on interpretation to mitigate visitor impacts** – Research on this topic might focus on cognitive responses (learning, knowledge acquisition or information processing) and behavioural responses (actions or inactions of target audience).
2. **Research on interpretation to enhance tourists' experiences and satisfaction** – Research in this area will likely focus on the effectiveness of various local, industry-based interpretation strategies in satisfying visitor expectations. A common topic of discussion concerns whether high satisfaction necessarily translates into a positive learning (interpretation) experience.
3. **Research on interpretation to encourage positive attitudes toward nature conservation** – Research in this area will focus on the ability of interpretive programs to influence existing behavioural tendencies regarding nature conservation. Consideration must be given to the existing social norms regarding interaction with the environment and the appropriateness of interpretive strategies for influencing different groups in society.
4. **Research on interpretation to link outcomes to corporate/strategic objectives** – Research in this area will focus on how interpretation (and education) is defined and used in corporate and strategic planning. This will involve research on the development of interpretive services, based on evaluation studies, which relate to organisational objectives.

Table 3 demonstrates how interpretation research may be classified according to its role.

Table 3: Research Areas and Study Examples

Research Area	Selected Interpretive
Research on interpretation to enhance tourists' experiences and satisfaction	Armstrong and Weiler (2003); Hughes (1991); Kuo (2002); Luck (2003); Moscardo and Pearce (1997); Moscardo (2002); Hwang et al. (2005)
Research on interpretation to encourage positive attitudes toward nature conservation	Appleby (2005); Armstrong and Weiler (2003); Beaumont (2001); Cole et al. (1997); Howard (1999/2000); Lackey and Ham (2003), Littlefair (2003); Luck (2003); Madin and Fenton (2004); Moscardo et al. (1996); Moscardo (2003); Orams (1995); Parkin and Morris (2005); Parkin and Parkin (2001); Reiling et al. (1988); Roggenbuck and Williams (1991); Stewart et al. (1998); Winter et al. (2000); Woods and Moscardo (2005)
Research on interpretation to link outcomes to corporate/strategic objectives	Armstrong and Weiler (2003); Ballantyne and Hughes (2003); Bass et al. (1989); Chen et al. (1999); Cole et al. (1997); Evans (1999); Heffernan (1998); Hendricks et al. (2001); Hughes and Morrison-Saunders (2005); Kuo (2002); Madin and Fenton (2004); Mallick and Driessen (2003); Moscardo (1999b); Moscardo, Woods and Pearce (1997); Orams (1995); Orams (1997); Papageorgiou (2001); Pearce (2004); Reiling et al. (1988); Roggenbuck and Berrier (1982); Roggenbuck and Williams (1991); Ryan and Dewar (1995); Smith-Jackson and Hall (2002); Winter et al. (2000).
Research on interpretation to mitigate visitor impacts	Parkin and Parkin (2001); Stoep and Gramman (1987)
Other research	Ballantyne and Uzzell (1999); Bolwell (1996); Ham (1986); Moscardo (2003); Moscardo (1995); Staiff et al. (2002); Taylor & Caldarelli (2004).

The focus of this report is on how interpretation may contribute to sustainable tourism. Not all interpretation research is concerned with this. For example Staiff et al. (2002) questioned the content of conservation messages

in the Minnamurra Rainforest Centre in New South Wales. This particular research focussed on the involvement of traditional indigenous communities in the provision of information to protected area visitors and the way that interpretation practices have historically been dominated by Western-based scientific thinking.

Criteria for Evaluating Interpretation Research

Table 4 provides criteria for evaluating research on interpretation. While this may seem logical, there are many practical challenges involved in achieving the specific aims of interpretive activities. These challenges can be seen as falling into two main categories.

1. Limited evidence on the effectiveness of specific interpretive activities in particular locations. Much interpretation is conducted without being evaluated and so this is a field where knowledge on effective practice is fragmented and limited.
2. Gaps between research and practice. This is also a field where there are few systematic and formal processes for translating the results of the research into a form that practitioners can actually use.

Table 4: Evaluation Criteria

Criteria	Variables
Time/Date of Publication	By year
Interpretive Techniques Researched	Guided Walks, Single in situ panels/signs, Exhibits in wayside displays/shelters, Formal talks, Slide program, Dramatisation, Demonstrations, Information brochures, Audio tours, Interactive computer programs etc.
Sample Size	As is described in text
Population Sampled	Guided Tour Participants, Visitor Centre Attendees, Tour Groups, Independent Visitors, School groups, Multiple visitor groups, Not specified
Location of Study (Country)	As specified in text
Location of Study (State/ Province)	As specified in text
Setting	Rainforest, Marine/Reef/ Urban, Coastal, Forest, Historic Site, Visitor Centre, Wilderness, Desert, Alpine, Island
Type of Study	Deductive, Formative, Surmisable, General
Data Collection Methods	Focus Group, Participant Observation, Semi-structured Interview, Onsite Survey – administered by staff or self-complete, Postal Survey, Telephone Survey
Outcomes Measured	Factual Knowledge, Behaviour, Attitudes, Values, Visitor Satisfaction, Conceptual Knowledge, Perceived Knowledge, Time Spent, Decision to Stop, Motivations
Design, Concept, Theory Framework underpinning the Interpretive Product or Service under Investigation	As stated in the text. Examines whether the researchers developed an interpretive technique that was then tested in the research.
Concept, Theory or Framework Underpinning the Research	As stated in the text. Recognises that researchers can come into a setting with an idea or concept that they wanted to test or explore.
Interpretation Principles Supported	Relevance, Varied Experiences, Clear/Easy to Follow, Thematic, Involvement, Understand/Respect Audience what does this mean?
Type of Publication	Journal Article, Book, Book Chapter, Thesis, Report, Website, Conference Proceedings/Abstract

Case Studies

In identifying the following best practice case studies the authors reviewed a large body of interpretive material. This material was organised according to the above criteria and is available from the lead author. Tables 5 to 8 show how the criteria can be applied to an interpretive text from each of the four broad research areas.

Table 5: Research on interpretation to enhance tourists' experiences and satisfaction

Criteria	Details and Evaluation
Time/Date of Publication	1997 (Field study undertaken from March to May 1996)
InterpretiveTechniques Researched	Visitor satisfaction with respect to guided tours by rangers, information brochures distributed with Skyrail tickets, signs on rainforest boardwalks and displays at rainforest interpretive centre. Researchers were interested in the contribution of the above interpretation methods to visitor knowledge of rainforest environments. Increased Rainforest knowledge is noted as being a feature of sustainable tourism.
Sample Size (+ who was researched)	937 English speaking visitors to the Skyrail Rainforest Cableway in far north Queensland. The sample included a balance of domestic and international tourists; as well as local residents. Both pre and post visit samples were taken.
Location of the Study	Skyrail Rainforest Cableway in far north Queensland Australia, Atherton Tablelands near Cairns?
General Type of Study	Surmisable
Methods used to collect the data	Questionnaires distributed by Cairns-based tourism students from James Cook University. Questionnaires were distributed to visitors both prior to and after rainforest experiences. Participant observation of visitors to the Red Peak and Barron Falls. Research assistants noted the characteristics of the visitors to various interpretive areas (i.e. lookouts, signs, touch tables, videos etc). Observers noted various demographic characteristics of visitors and whether any interaction occurred with the interpretation vehicle.
Outcomes Measured	Respondent satisfaction with Skyrail experience, rainforest knowledge, ability of interpretation mediums to hold respondent attention.
What if any, concept, theory or framework informs the design of the interpretive product or service being researched?	None evident.
What if any, concept, theory or framework informs the research?	None evident
Which interpretive best practice principle does the research demonstrate or support?	Relevance to visitors: *The two most important measures obtained from the observation study were measures of the ability of a sign, touch table or exhibit to attract and hold visitor attention' Varied Experience for visitors: 'In addition to increasing visitors' rainforest knowledge, the results also supported the argument that Sky Rail offers a positive rainforest experience that can replace the desire for other rainforest activities.' Increase visitor understanding: 'Both the observation and survey data highlighted the effects of interpretive components which offered an opportunity for visitors to interact with the information available and to make choices which allowed them to personalise their experiences.*
Place of publication	Report on a project conducted by CRC-TREM Projects 5.1 and 5.2; add ref details

Source: Moscardo and Pearce (1997)

Table 6: Research on interpretation to link outcomes to corporate/strategic objectives

Criteria for Classifying	Explanation
Time/date of publication	2004 (Field study undertaken September/October 2000)
Interpretive techniques researched	Included marine biology slide show, snorkelling (independent and guided), helicopter flights guided by a marine biologist
Sample size (+ who was researched)	Visitors in the Whitsunday Islands who were travelling to the Great Barrier Reef as part of a large tourist vessel Pilot Study 218 visitors – Main study 443 visitors (includes separate prior and post visit samples)
Location of the study	The Whitsunday Islands in the Great Barrier Reef Marine Park sector of the Queensland coast
General type of study	Surmisable
Methods used to collect the data	Two quantitative questionnaires
Outcomes measured	Respondent knowledge of the Great Barrier Reef environment (including basic ecology, human impacts and tourism)
What if any, concept, theory or framework informs the design of the interpretive product or service being researched?	Not stated
What if any, concept, theory or framework informs the research?	Deductive approaches were employed to develop 'a sound and reliable method of interpretive program evaluation'
Which interpretive best practice principle does the research demonstrate or support?	Educational value of interpretation program to visitors with respect to knowledge of the reef environment
Place of publication	Refereed Journal Article add in reference

Source: Madin and Fenton (2004)

Table 7: Research on interpretation to mitigate visitor impacts

Criteria	Details and Evaluation
Time/date of publication	2001
Interpretive techniques researched	Brochures, pamphlets, displays and posters – some reference to guides as part of the discussions on possible future action
Sample size (+ who was researched)	Not stated – some reference to percentage of respondents with regards to how far toilets should be from campsites and watercourses
Location of the study	Bunya Mountains, Queensland, Australia
General type of study	Surmisable
Methods used to collect the data	Survey – not specified whether participant or researcher completed
Outcomes measured	Visitor knowledge on minimising impacts on the environment and public health of going to the toilet in the bush
What if any, concept, theory or framework informs the design of the interpretive product or service being researched?	Minimal impact: *a code of practice for users of natural areas* …[which aims] *to minimise recreational impacts through development of awareness, knowledge and skill amongst visitors*
What if any, concept, theory or framework informs the research?	Minimal impact (as above)
Which interpretive best practice principle does the research demonstrate or support?	Clear, easy to follow: *the take home message should be simple – simple messages are processed and stored and more likely to be remembered; Involvement: 'try running an interpretive program that involves taking participants to a problem area' and 'find a way to make the provision of information interesting and fun, while still educational*
Place of publication	Industry focussed journal, include publication name

Source: Parkin and Parkin (2001)

Table 8: Research on interpretation to encourage positive attitudes toward nature conservation

Criteria	Details and Evaluation
Time/date of publication	2003 (Fieldwork 2000 to 2002)
Interpretive techniques Researched	Guided Walks
Sample size (+ who was researched)	41 guided walks – 390 completed visitor surveys
Location of the study	Lamington National Park, South East Queensland
General type of study	Formative
Methods used to collect the data	Survey – participant completed
Outcomes measured	Visitor behaviour whilst on bushwalks. Indicators of inappropriate behaviour included: cutting corners, not picking up litter already on the track, and high noise levels. ↓ Five unique interpretive programs were then created in order to determine whether interpretation programs universally applied across the 41 guided walks effected visitor attitude to conservation.
What if any, concept, theory or framework informs the design of the interpretive product or service being researched?	Not Stated
What if any, concept, theory or framework informs the research?	The three most prominent theories used in interpretation have been reviewed for this study: the Theory of Planned Behaviour, the Elaboration Likelihood Model, and the Model of Responsible Environmental Behaviour. The key factors identified by the theories as influencing behaviour are listed here: attitude towards behaviour, subjective norm, perceived behavioural control, message strength and relevance, credibility of source, action skills, knowledge of action strategies, knowledge of issues and personality factors.
Which interpretive best practice principle does the research demonstrate or support?	Easy to Follow
Place of publication	Doctoral Thesis. include name

Source: Littlefair (2003)

Chapter 5

BEST PRACTICE INTERPRETATION

A major role of tourism researchers is to provide protected area managers and operators with tools to develop strategies to minimise the negative effects of tourism activities. Best practice in interpretation is one way this can be achieved without necessarily taking unpopular decisions to limit tourist access to national parks.

Interpretation strategies need to be relevant to organisational objectives. This is a deficiency in much existing interpretation scholarship (Weiler & Ham 2006). To this end the Interpretation Association of Australia (IAA) is one association that could facilitate the development of an interpretation agenda for the STCRC. The IAA was established to raise the profile of interpretation as a profession, improve professional standards and act as a coordinating body for interpretation professionals, primarily based in Australia. The goals of the association (as outlined in their strategic plan) are to *support, encourage and monitor research in interpretation in Australia* (Interpretation Association of Australia 2000).

The STCRC in association with IAA and the tourism industry could develop a research agenda that assists in the planning and implementation of interpretation. It is not, however, the intention of this report to discuss models of research or outline the benefits of research. The widely distributed document 'An Australian Leisure Research Agenda' (Lynch & Brown 1995) has done this adequately and could be used as a model for developing an interpretation research agenda.

Framework for a New Interpretation Research Agenda

Research on interpretation to mitigate visitor impacts

- Does interpretation need to be tailored to suit the Australian context in order to mitigate visitor impacts?
- Are different forms of interpretation required to those of Britain, North America and other cultures with an established history of interpretation?
- Should tourism interpretation include Aboriginal, agricultural, industrial, ecological and/or social perspectives?

Research on interpretation to enhance tourists' experiences and satisfaction

- Is interpretation losing its intrinsic value in stimulating awareness and appreciation of the environment and enriching the visitor experience?

When examining what tourists (visitors) want from national park interpretation one should be concerned with the following:

- Do forms of interpretation detract from enjoyment of national parks? How is it possible to find a balance between interpretation and 'spiritual claustrophobia'?
- To what extent is it possible to interpret 'wilderness' locations?
- What are visitor needs in relation to interpretation? Do particular types of interpretation satisfy visitor needs more than others?
- Should interpretation recognise masculine and feminine understanding and perspectives of the tourists' national park experience?
- Given that different tourist groups attach their own meanings and values to an experience, how does this affect the types of interpretation suitable for national parks, especially in relation to international visitation?
- Can interpretation result in the de-commodification of tourists' experience of nature?

Research on interpretation to encourage positive attitudes towards nature conservation

The ability of park managers and the like to use interpretation to encourage positive attitudes to nature conservation will, to a large part, be dependent on the type of interpretive strategies employed. To assess whether interpretation is capable of changing people's attitudes; and whether this results in behavioural change and hence a reduction in negative impacts requires that interpretation be linked to specific organisational objectives (Weiler & Ham 2006), i.e:

- What is the best form of interpretation to reflect particular management goals?
- Can the value of interpretation be examined through cost and staffing levels?
- Is interpretation more effective than rules and regulations as a management tool to minimise negative impacts?
- What role is played by on-site and off-site forms of interpretation in satisfying often conflicting management objectives?
- Is the trend towards the high-tech visitor centre form of interpretation justified? Does this result in satisfying other objectives apart from economic rationalisation, i.e. visitor satisfaction, appreciation of the environment?
- Who is providing interpretation? Parks personnel or private sector guides? Who controls interpretation provided by the private sector? Does it match park management goals?
- How appropriate is cost-benefit analysis when deciding on forms of interpretation?
- What role is played by interpretation during the pre-visit, on-site and post-visit stages?
- Is off-site interpretation a valid form of interpretation or does it fall into the realm of marketing?
- Why is interpretation subsumed into general management activities?
- Should interpretation be considered as a discrete expense in budgets as is the case for other park activities? Would this encourage its use as a management tool for behavioural control?
- To what extent should park authorities be responsible for financing interpretation, when it is seen as an activity to promote the general goals of environmental awareness and appreciation?
- Do national parks have sufficient funds to finance this, or should they concentrate on interpretation as a management tool to control behaviour and view other favourable outcomes as a by-product?
- To what extent is corporate sponsorship of national parks and interpretation desirable and appropriate?
- Is formal evaluation necessary or is it sufficient to simply observe good results/receive good feedback?

Research on interpretation to link outcomes to corporate/strategic objectives

The process of linking interpretation to management needs in park environments has raised several questions which the authors believe are worthy of further examination. While this section of the report is framed largely from an academic perspective, the issues raised may also function as recommendations for protected area agencies and tourism industry organisations wishing to undertake more effective research on interpretation.

Defining interpretation

- Research to review all of the agencies involved in interpretation should be undertaken. The review should establish how interpretation (and education) is defined and used in protected area agency mission statements, corporate plans and/or strategic frameworks. It should also examine how this is subsequently applied (and if not, why not) to broad operational goals for interpretation (and education) services. Is it a failure of the definition or the relationship between interpretation and the conservation functions of the agencies?
- More specifically research should identify and evaluate (with a view to improving) the fit of interpretation under the new operating environment (resulting from increased engagement with the tourism industry) in relation to business practice and the defined functions of protected area management.
- Research is needed into the definitional relationships between interpretation and marketing. This research would enable a customer classification framework such as market segmentation to distinguish types of visitors and their profiles to ensure end users of interpretation (and education) services can be appropriately catered for.

Developing interpretation services

The development stage of any interpretation service is a key factor in its success and the following should be targeted:

- Research that establishes a distinctive interpretation planning process. Research that demonstrates how to translate broad interpretation (and education) goals into tangible operational outcomes that are related to organisational goals.
- Research that identifies and analyses the priority needs of the various market segments that use or do not use parks and in what form interpretation can be provided to meet these needs.
- Research that establishes the form of specific messages which most effectively communicate to identified audiences/market segments.

- Research that establishes the basic performance standards for all interpretation (and education) services, delivered by the public and private sectors.
- Research that identifies the principal feedback mechanisms for monitoring service delivery.
- Research that establishes the mechanisms for data and knowledge collection and the limitations of systems used to ensure relevance and efficiency in gathering key planning information for interpretation (and education) product and message development.
- Research into visitor health and safety risk management issues which could be addressed through interpretive (and education) services.

Delivering interpretation

Effectively delivering the final 'product' to the visitor is difficult to achieve without appropriate knowledge and understanding of issues relating to policy/ visitor interaction. The following areas of research are essential:

- Research into organisational structures to establish mechanisms to allow better delivery of interpretation, particularly in relation to monitoring and reporting.
- Research on communication strategies to ensure interpretation objectives, targets and programs are effectively and efficiently communicated to, and understood by, all stakeholders and providers (e.g. staff, suppliers, contractors, volunteers, tour operators, visitors).
- Research that enables and promotes an understanding of interpretation policies, objectives, targets and programs throughout the organisation and to relevant external suppliers and stakeholders.
- Research that utilises behavioural theory in communication strategies.
- Research that develops operational criteria and performance standards for communication strategies.
- Research that ascertains the extent to which tourism organisations are aware of park agency goals and objectives and local community concerns, so that unrealistic industry expectations are avoided.

Evaluating interpretation

The constant and ongoing evaluation of any management program is essential to its success. Research should:

- Develop key performance standards for interpretation services and subsequently key performance indicators. Performance indicators for interpretation should relate to the agency's key corporate objectives and performance standards.
- Identify Critical Success Factors for interpretation (or generic tools to assist agencies to do this).
- Investigate mechanisms to measure visitor preferences and perceptions of interpretation programs, e.g. through visitor satisfaction surveys.
- Develop criteria to determine levels of services, pricing mechanisms and when to outsource to ensure key messages are delivered to key audiences.

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The Sustainable Tourism Cooperative Research Centre (STCRC) is established under the Australian Government's Cooperative Research Centres Program. STCRC is the world's leading scientific institution delivering research to support the sustainability of travel and tourism - one of the world's largest and fastest growing industries.

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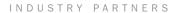
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