UNDERSTANDING TRACK/TRAIL EXPERIENCES
IN NATIONAL PARKS

A review

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LIST OF ACRONYMS

* BMNP: Blue Mountains National Park
* CERRA: Central Eastern Rainforest Reserve
* IUSN: International Union for the Conservation of Nature
* KNP: Kosciusko National Park
* NP: National Park
* NPWS: National Park and Wildlife Service
* POM: Plan of Management
* STCRC: Sustainable Tourism Cooperative Research Centre

ABSTRACT

This desktop report aimed to draw attention to the various factors associated with track usage and visitor experience in national parks. A research classification spreadsheet was constructed in order to draw attention to the current state of academic research in this area. The main factors found to influence the track experience were congestion, interaction between trail user groups and environmental degradation. In addition to the classification of academic research this report also examined current management planning and visitor research conducted in three New South Wales national parks in order to provide examples of best practice that would be relevant to New South Wales stakeholders.

Acknowledgements

SUMMARY

Aim

This desktop project aimed to draw attention to the various factors associated with track usage and visitor experience in national parks. The results will help to inform park managers how best to develop a strategic position on tracks and trails based on visitor experiences. This advice will be of assistance in managers' ongoing work regarding visitation planning and policy. The Blue Mountains National Park (BMNP), Kosciuszko National Park (KNP), and the Central Eastern Rainforest Reserves (CERRA) are employed as case studies to examine best practice research into track/trail experiences.

Methodology

This is a scoping study and as such has sought to draw on prior research conducted in national parks in Australia and internationally. Material has been sourced through a desktop evaluation of existing track/trail research. Journal articles and reports conducted for government departments have been reviewed to understand the nature of prior research undertaken to learn about the experiences of track/trail users. A research classification spreadsheet was formulated to categorise research output and summarise the key themes presented in the literature. These themes were then applied to three separate case studies in NSW to establish the current level of primary research conducted on track/trail visitor experiences.

Key Findings

This report found that there is a general lack of academic research specifically focusing on the experiences of track/trail users. Only 26 papers were identified for the research classification spreadsheet (Table 2). The main points to consider from the spreadsheet are as follows:

- There is a lack of a set theoretical/ methodological approach for examining the notion of a track experience. A consistent theoretical approach would make it easier for park agencies to pursue work in this area.
- The three main factors found to influence the track experience were congestion, interaction between trail user groups and environmental degradation. There is little to no evidence that factors influencing experience will also affect level of usage.
- The literature does not investigate the relationship between track type/classifications and visitor experience. To some extent this has been achieved on an individual park level (refer to Chapter 3).
- The lack of attention that the literature seems to pay to the effects of visitor demographics on experience. The only issue remotely related to visitor demographic that we find affecting experience is visitor type. Some of the articles canvassed for this project draw attention to the potential for conflict between different users, which may affect experience.
- The majority of research on track/trail usage is North American in its focus.

Additionally, the three case studies in Chapter 3 note that empirical research by park agencies looking at the visitor experience on a park level exists but in-depth research aimed to assess the track/trail experience is limited. Data that does exist is concerned with the satisfaction with the choice and length of track, the condition of the track, the effect of crowding and visitor behaviour and the general condition of the environment. However, this data does not examine the extent to which these variables will affect future use. There is substantial evidence from these three case studies that visitors prefer the track to be as natural as possible and that short walks in national parks are more popular.

Future Action

This report has identified two principle opportunities for future research. These opportunities have their basis in perceived deficiencies in the scope of available literature. Firstly the authors have noted a lack of attention being afforded to track usage and visitor experience in state forests. With this in mind the following recommendation is offered:

>**Recommendation 1:** *National park and state forest management agencies should work to develop a consensus approach for understanding the nature of track usage and associated visitor experiences.*

Secondly, the authors found apparent deficiencies in the way that academia and parks agencies have approached the study of the track tourist experience. With these deficiencies in mind a second recommendation is offered:

>**Recommendation 2:** *That protected area agencies work to develop an adaptable research instrument, which can be applied to all national parks in NSW regardless of the type of track experiences that are common in the particular geographical area.*

Chapter 1

INTRODUCTION

In 2004 it was estimated that 25.9 million people participated in Australian based nature based tourism activities (Tourism Australia 2005)[1]. Approximately 54% of domestic overnight nature tourists and 45% of domestic day tourists participated in bushwalking/rainforest walks (Tourism Australia 2005). To date there has been a dearth of literature, which has considered the experiences of this important section of the Australian tourism market. The purpose of this report is to summarise the current state of track/trail experience research in national parks (NP) and to produce recommendations for ways in which future research in this area may be conducted[2]. Chapter 2 will present a breakdown of existing work on the nature of track/trail experience. Chapter 3 will then consider the approach to track/trail management in three NSW NPs. The chosen case studies are the Blue Mountains, Kosciusko and the Central Eastern Rainforest Reserves of Australia (CERRA). For each case reference is made to track/trail management approaches and issues that have been identified as effecting track/trail experiences. Chapter 4 will then conclude the report by recommending methodologies for undertaking field-work to refine understanding of demand for track/trail experiences, as well as commenting on strategic implications for NPs.

Track/Trail Experience Research Context

What is a national park?
Throughout Australia NPs are managed to ensure the sustainable utilisation of the nation's public forest estate. Sustainability is a subjective phenomenon, and as such, determinations about the appropriateness of different uses of tracks/trails will be made by particular park management agencies.

The International Union for the Conservation of Nature (IUCN) defines a NP as an 'area of land and/or sea, designated to a) protect the ecological integrity of one or more ecosystems for present and future generations, b) exclude exploitation or occupation inimical to the purposes of designation of the area, and c) provide a foundation for spiritual, scientific, educational, recreational, and visitor opportunities, all of which must be environmentally and culturally compatible' (Harmon 2003). In Australia, NPs are one of a variety of protected area designations, which are used by Commonwealth and state authorities. Other protected area designations include marine parks, nature reserves, indigenous protected areas and conservation reserves. The majority of Australia's protected areas are managed by state level agencies such as the NSW National Parks and Wildlife Service. However under the Environment Protection and Biodiversity Conservation Act 1999 the Governor General can declare an area of land as a Commonwealth Reserve (Department of the Environment Water Heritage and the Arts 2008).

Tourists have played a role in the development of the NP movement both in Australia and abroad. Early NPs such as Yellowstone were created 'as a public park or pleasuring ground for the benefit and enjoyment of the people' (Anon 2004)[3]. Similarly in Australia early NPs developed in response to concern in the community over overcrowding, high infant mortality rates and instances of disease in the 1870s in the nation's cities (Ovington 1980). Because of this, recreation became a primary focus of NP development (Boden & Baines 1981). The anthropocentric management approach to NPs started to shift towards more of a conservation focus in the years following World War II. It was this shift, which led to the creation of the NSW National Parks and Wildlife Service (NPWS) in 1967. Track/trail users and the associated tourism industries have played a role in the increasing focus on conservation in NPs. For instance in NSW the development/growth of bushwalking clubs

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[1] This figure is made up of domestic overnight visitors, domestic day visitors and international visitors (Tourism Australia 2005).

[2] The authors have identified the only piece of research that considers the experiences of tourists in state forests (see Chapman 1995). This report which was completed for state forests NSW makes no specific reference to track/trail users. The absence of any form of research base for studying track/trail experiences in state forests was the reason this report has focused on national parks. The experiences of track/trail users in state forests are viewed as an important area of future research. Because state forests are, like national parks, designed to ensure the sustainable utilisation of the nation's public forest estate; many of the observations that are made in Chapter four regarding implications for national park managers can be similarly applied to state forest settings.

[3] It is acknowledged that bushwalking groups and wilderness groups have also played a key part in the development of national parks and the design and construction of many of the tracks in these areas.

was a catalyst for the development of the modern conservation movement and the formulation in 1932 of the National Parks and Primitive Areas Council (Hall 1995). The close connection between track/trail users and the conservation focus of NPs evidences an important reason for understanding more about the experience preferences of this user group.

Experience patterns of national park visitors

Tourists have a variety of recreational opportunities and experiences available to them within a NP environment. While the later sections of this report will focus on track/trail users, it is important to contextualise this user group within a broader visitor base. So what are the characteristics of NP users in Australia?

Over recent years, Sustainable Tourism CRC has completed a variety of studies on the visitation patterns of NP users (e.g. Archer & Griffin 2004; 2005; Griffin & Archer 2005; Grubert & Kriwoken 2002). Similar studies have been completed for national forest areas in the United States (e.g. Watson, Williams, Roggenbuck & Daigle 1992) and in NSW state forests (Chapman 1995). A review of this literature illustrates the diversity of experiences and activities that are available to tourists in forest reserve areas. Outdoor recreationists typically participate in a variety of activities in the course of a visit to a protected area (Daigle, Watson & Haas 1994). To illustrate this, Chapman (1995) compiled a 28 item recreational activity preference list for state forests in NSW, finding that ten different activities (rest/relax; look at scenery; swim; short walks; bbq outdoors; picnic; camping; other games; bushwalking and sunbathing) were seen as possible recreational pursuits by the sampled ecotourists on a five point Likert Scale. Similarly there is evidence of a collection of experiences that can be had by tourists in NPs. Griffin and Vacaflores (2004) reviewed existing NP/reserve area visitor studies for the TTF Australia: Tourism and Transport Forum. As part of this study six categories of recreation experiences in protected areas were identified including natural experiences, iconic features and independent recreational experiences (Griffin & Vacaflores 2004). Other work has sought to provide a comprehensive breakdown of visitors in select NPs. This will be examined in detail in Chapter 3.

The idea that tourists can view forest landscapes in different ways squares with work from the US, which has investigated the complexities of the wilderness experience (Dawson, Newman & Watson 1998; Glaspell, Watson, Kneeshaw & Pendergrast 2003). It is also reflective of Cohen's (1979) work into the phenomenology of the tourist experience where it was proposed that tourists are not homogenous with respect to how they engage with host cultures and landscapes. The idea that tourists in NPs should not necessarily be seen as a homogenous user group raises the issue that there may be different types of track/trail users. But what exactly is a track/trail?

What are tracks and trails?

Throughout the published literature the terms 'track' and 'trail' are used somewhat interchangeably. The *Macquarie Concise Dictionary* defines a track as 'a road, pathway, or trail' (Delbridge & Bernard 1988). In North America there appears to be a focus on the use of the term 'trail'. This is evidenced by initiatives such as the US National Parks Service's *National Trails System* which was created under the *National Trails System Act 1968* (National Parks Service 2007b). In North America the term trail could apply to the full spectrum of pathway users, as is evidenced in the following definition from the National Parks Service:

> *a travel way established either through construction or use which is passable by at least one or more of the following, including but not limited to: foot traffic, stock, watercraft, bicycles, in-line skates, wheelchairs, cross-country skis, off-road recreation vehicles such as motorcycles, snowmobiles, ATVs, and 4WD vehicles (National Parks Service 2007a).*

The term trail has also been adopted in Australia. For instance, in January 2007 Tourism Tasmania published a project outline for the development of their *Trails Tasmania Strategy* (Tourism Tasmania 2007). This strategy was seen to be an extension of the *Tasmanian Walking Tracks Strategy and Marketing Plan* (see Tourism Tasmania, Tasmanian Parks and Wildlife Service & Forestry Tasmania 1997). The *Trails Tasmania Strategy* defined a recreational trail as 'a clearly marked and identifiable non-motorised, land or water based route used for recreational purposes' (Inspiring Place 2007). Generally in Australia the term track is more closely aligned to walkers. The *Walking Track Management Strategy for the Tasmanian Wilderness World Heritage Area* defined a track as 'a visibly trampled route with green vegetation removed from track surface' (Tasmanian Parks and Wildlife Service 1994b). Similarly the NSW NPWS has defined a walking track as being 'well defined and suitable for people of average fitness with some experience. The standard of construction will be minimal on level ground, but on tracks prone to erosion or susceptible to damage, the standard may be similar to a *walk*' (NSW NPWS 2002). For the purposes of this report, from here on, the term 'track' will be used unless specifically referred to by researchers or park authorities.

In recognition of the diverse nature of the track user base, various track classification schemes have been introduced. An excellent breakdown of the different track classification schemes that have been developed by the various Commonwealth and state park managers can be found in Arias (2007a). In attempt to limit confusion amongst interstate and international visitors, Standards Australia moved in 2001 to develop an Australian Standards for walking tracks. These national standards focused on track classification, signage and infrastructure design (Standards Australia 2001a; 2001b). The objective of the standards was to 'provide managing authorities with guidance for walking track classification and signage in order to provide consistency of information to users of walking tracks. This is intended to minimise risk, preserve natural features and enhance recreation opportunities associated with the use of walking tracks' (Standards Australia 2001a). A simplified version of the Australian Standards for Walking Tracks is provided in Table 1 (overleaf). Table 1 shows that Standards Australia settled on a six category classification scheme. Track classifications ranged from wide tracks with solid surfaces and low gradients to sparsely marked routes through rugged and remote environments where the navigation skills of the walker need to be quite high (Type 6). In the course of developing the Australian Standards for walking tracks, Standards Australia drew attention to the connections that exist between track design and the 'provision of access for visitors to the quality of experience they seek' (Standards Australia 2001b).

Table 1 Australian standards for walking tracks (simplified version)[4]

Class	Conditions	Signage	Infrastructure	Terrain	Example
1	1.2m wide, hardened surface, suitable for wheelchairs	arrows at intersections and frequent interpretive signage	lookouts, seats, and barrier rails	no previous walking experience required, ramps required if steps present	access path in urban parkland
2	90cm wide, modified or hardened surface, few intrusions	arrows at intersections and frequent interpretive signage	lookouts, seats, and barrier rails	gradient usually less than 1:10, no previous walking experience required	nature circuit in urban park
3	Generally modified, sometimes hardened, less than 1.2m wide	signage and track markers for direction only, limited interpretive signage	specific safety/ environmental considerations only	gradient usually less than 1:10 but with some steep sections, some natural hazards (e.g. water crossings) potentially present	well-trodden walking track in major NP
4	Generally distinct but without substantial modification to the ground, fallen debris/obstacles likely	minimal signage for management and directional purposes	specific safety/ environmental considerations only	may require map/ compass skills, users to be self-reliant	walking track in NP
5	Limited modification, track may be indistinct in places	signage limited to management purposes	specific safety/ environmental considerations only	requires map/ compass and other specialised skills, users need to be self-reliant	less-used walking track in a distant area of a NP
6	No modification of the natural environment	not provided	not provided	requires high degree of competence in map/compass and other specialised skills, users need to be self-reliant	little-used path in a remote area

Source: Bush and Alpine Resources (2005)

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[4] A full version of the Australian Standards for walking tracks can be found in Arias (2007b)

Chapter 2

TRACK EXPERIENCES

Track User Experiences in Australian National Parks

There is no national consensus on visitor monitoring (Darcy, Griffin, Craig, Crilley & Moore 2007). This includes the collection of demographic characteristics, motivations and levels of satisfaction experienced by tourists who use tracks in NPs and state forests. Previously referenced data on the experiences of park and state forest visitors is of little value for researchers interested in track tourist experiences. There are two reasons for this:
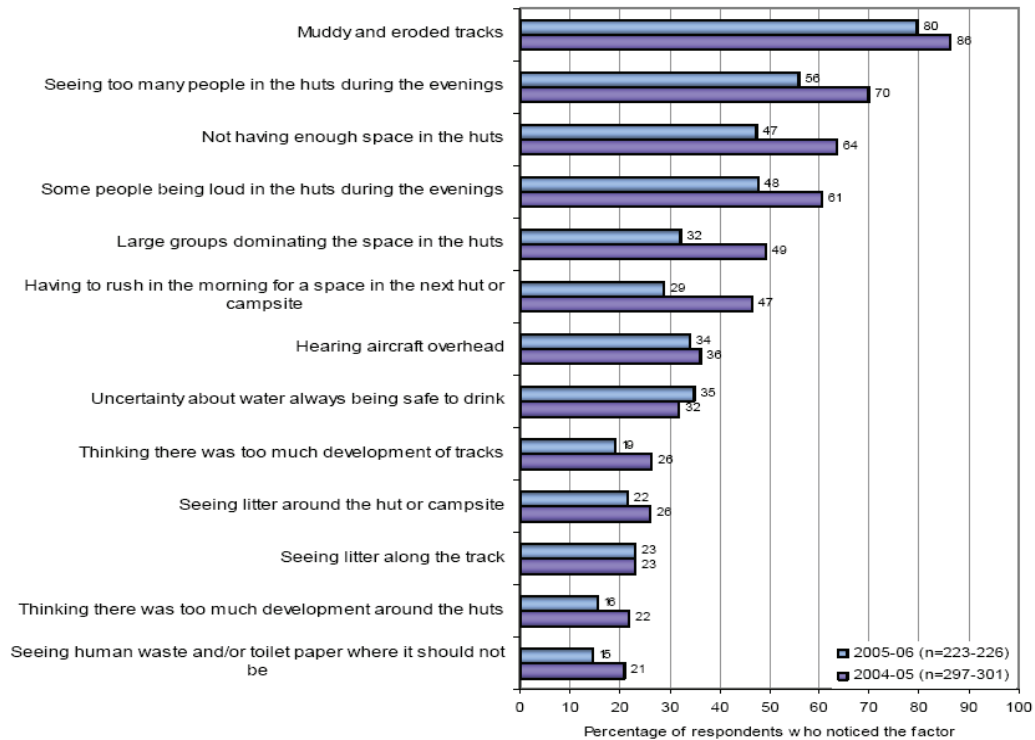
1. Visitors can take part in a number of recreational experiences during a visit to a protected area (Watson et al. 1992). Existing NP user studies have not attempted to isolate the experience of track users from the broader park user group. In fact, visitor monitoring in Australia has concentrated on the following aspects (Bushell & Griffin 2006, pp. 28–29):

   - visitor satisfaction, both overall and with specific park services, facilities and attributes
   - the importance of various park services, facilities and attributes in influencing the visitor's quality of experience
   - expectations of visitors with respect to park services and facilities
   - main reasons or motivations for visits
   - overall patterns and levels of NP visitation within the community
   - demographic profiling of visitors, to determine what types of people are using NPs
   - reasons for infrequent or non-visitation of parks amongst some sections of the community.

2. A visitor may have multiple tourist experiences in the course of a trek. Long distance treks such as the Overland Track (Tasmania) or sections of Appalachian Trail (USA) may frequently take days or months to complete. Such treks could be defined as a multi-phasic experience (see McIntyre & Roggenbuck 1998). Future research should consider methods for measuring these multi-stage experiences.

While there is no comprehensive national breakdown of track users in Australian NPs and reserve areas; it is possible to say that the literature in this area indicates that the four most common users of tracks are hikers/walkers (independent and guided), 4WD users, horseback riders and cyclists. Land managers throughout Australia such as the NSW NPWS have developed policies which govern the movement of said groups (Manager Strategic Policy Division 1989a; 1989b; 1989c).

Some local visitor studies have also been completed for specific tracks and track user groups. One example of this is work that has been done for the Three Capes walking track in the Tasman National Park (see Department of Tourism Arts and the Environment 2007). This particular study was commissioned with the aim of understanding more about the preferred experiences of people who would likely use the track if it received development approval. From surveys with 537 repeat bushwalkers a typology of bushwalkers was developed, which outlined basic demographic information, as well as desired experiences (Department of Tourism Arts and the Environment 2007). Over 72% of independent bushwalkers and bushwalkers on commercial tours placed some importance on the 'chance to explore a new area' when they were describing issues that were important for them in an overnight walk (Department of Tourism Arts and the Environment 2007).

The Tasmanian Parks and Wildlife Service has also conducted surveys of the Overland Track and Pine Valley walkers since 2004. The rationale for these surveys has been to monitor walker experiences prior to the establishment of new regulation systems, and to gauge the success of the vision for the Overland Track (Poll 2006; Rundle 2005). In addition to collecting basic demographic data, these reports also considered factors that were likely to effect experience on the track. Respondents were first asked to rate their awareness of a series of factors that were seen as likely to effect the experience. They were then asked to indicate the degree to which a factor was likely to affect their actual experience. Poll (2006) notes that generally the greater the proportion of people who noticed the factors, the greater the proportion of people who deemed that the factors would effect their tourist experience. That said, it is interesting to consider the top ranking factor 'muddy/eroded tracks' in Figures 1 and 2 (overleaf). In Figure 1 it can be seen that 80% of respondents noted that 'muddy/eroded' tracks are an issue on the Overland Track. At the same time though Figure 2 indicates that only 38% of respondents saw 'muddy/eroded tracks' as detracting form their tourist experience.

Figure 1 Percentage of respondents who noted factors which may influence experience

Factor	2005-06	2004-05
Muddy and eroded tracks	80	86
Seeing too many people in the huts during the evenings	56	70
Not having enough space in the huts	47	64
Some people being loud in the huts during the evenings	48	61
Large groups dominating the space in the huts	32	49
Having to rush in the morning for a space in the next hut or campsite	29	47
Hearing aircraft overhead	34	36
Uncertainty about water always being safe to drink	35	32
Thinking there was too much development of tracks	19	26
Seeing litter around the hut or campsite	22	26
Seeing litter along the track	23	23
Thinking there was too much development around the huts	16	22
Seeing human waste and/or toilet paper where it should not be	15	21

2005-06 (n=223-226)
2004-05 (n=297-301)

Percentage of respondents who noticed the factor

Source: Poll (2006)

Other commentators have used visitor employed photography exercises and a post-hike interview to examine the relationship between perception of track conditions and impact on experience (see for example Dorwart 2007). Ultimately the degree to which track conditions influence experience is affected partly by the tourist's pre-visit expectations. Returning to the afore mentioned *Australian Standards for Walking Tracks* it is possible to see that categories five and six both involve little or no alteration of the natural environment (see Table 1). Future research could seek to explore the correlation between tourists' experiences of tracks and their pre-trip expectations. This would be an important area of research focus because sustaining the visitor experience ultimately involves understanding expectations of tourists and working to meet them in the context of local environmental realities (McCool 2002).

Figure 2 Percentage of respondents who were 'bothered little' or 'bothered a lot' by factors that affect the quality of walker experiences
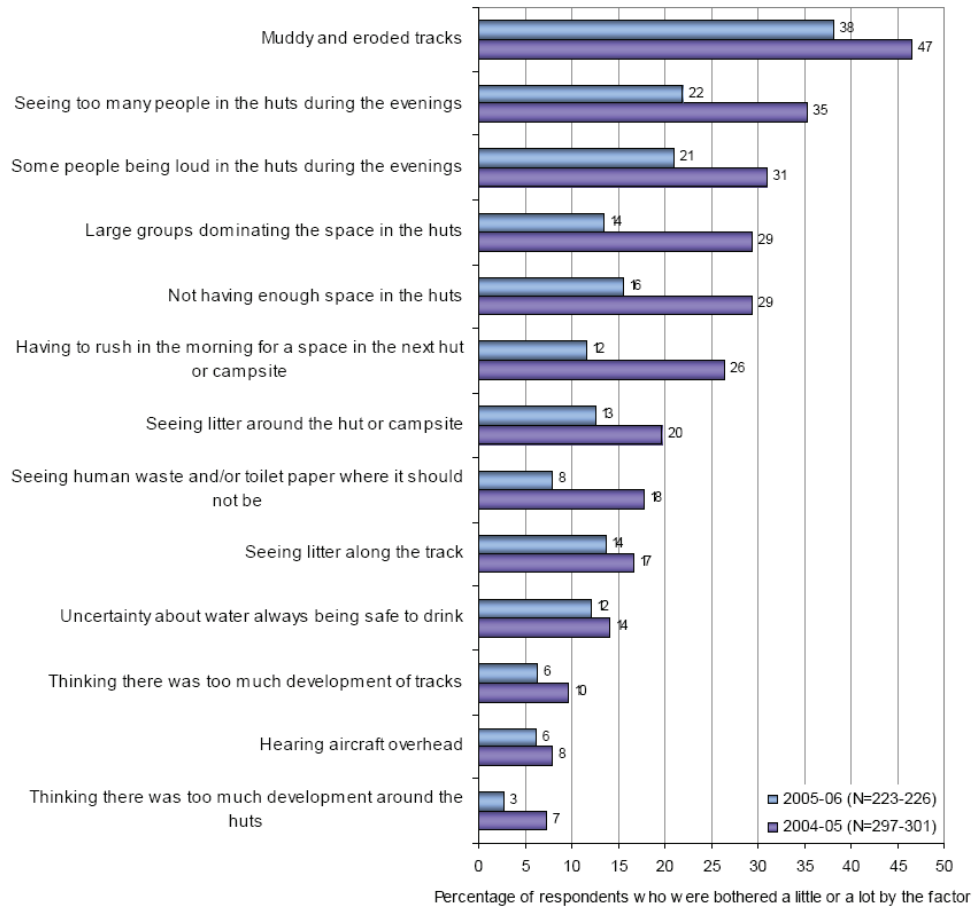
Source: Poll (2006)

The State of the Academic Literature on Track Experiences

Work that has been completed on the state of track experiences in Australian NPs is sporadic. For this reason this report will also consider the state of academic research into the nature of track experience. The authors have identified 26 academic papers, which focus on various aspects of the track tourist experience. These academic papers are summarised in Table 2 (page 9).

From Table 2 it can be observed that a number of common factors were seen as influencing the experiences of track users. The first of these issues is conflict between different track users. Conflict between track users is largely the result of multiple tourist groups using the same physical space (Carothers, Vaske & Donnelly 2001; Lynn & Brown 2003). Conflict between different track users has been a recognised problem in track environments for some time. The US President's Commission on Americans Outdoors noted that an increased focus on mechanised recreation had the potential to cause conflict between each of the four main types of track users (hikers, horseback riders, bicycle riders and motorcycle riders) (Krumpe & Lucas 1986). Even before this Edward Abbey who was a National Park Service Employee and a critic of motoring groups and the tourism industry noted:

> *No more cars in national parks. Let people walk. Or ride horses, bicycles, mules, wild pigs—anything—but keep the automobiles and the motorcycles and all their motorized relatives out. We have agreed not to ride our automobiles into cathedrals, concert halls, museums ... we should treat national parks with the same deference, for they too, are holy places. An increasingly pagan and hedonistic people (thank God!) we are learning finally that the forests and mountains and desert canyons are holier than our churches. Therefore let us behave accordingly (Abbey 1968, p. 60 in Herremans & Reid 2006)*

For such interpersonal user conflict to develop, one track user must believe that the presence of another user group is interfering with their own recreation goals (Carothers et al. 2001). Hearne & Salinas (2002) have illustrated this with respect to international tourists in Costa Rica. They note that 72% of foreign ecotourists to the Poas Volcano in the Braulio Carrillo National Park expressed concern that congestion on tracks reduced the quality of their experiences. Studies of the interaction between hikers and horse riders have also drawn the attention of tourism academics and researchers from the National Park Service (Beeton 1999; 2006; Watson et al. 1992). These studies have tended to find that often conflict between different user groups have developed as a result of confusion over the operating permit requirements placed on horse riders and concern over manure and general track damage. Interestingly Beeton (1999) noted that negative perceptions of horse riders amongst hikers was often not connected to people actually having seen a horse whilst hiking. Beeton (1999) notes that this creates a 'disjunction between apparent and real experience'. It also illustrates the distinction between social values conflict and interpersonal conflict as an influence on experience. Carothers et al. (2001) note that social values conflict occurs when a track user objects to another forest user (e.g. a hunter) without ever actually seeing one. Hunting is now permissible in 180 state forest areas throughout NSW (NSW Department of Primary Industries 2005). Whilst accreditation programs exist to govern this industry, the potential for negative effects on local forest based tourism industries is seen as significant in many quarters. Other forms of conflict that are related to congestion include conflict between hikers and air tourism (Herremans 2006) and between walkers and bike riders (Carothers et al. 2001; Cessford 2003).

Pollution was also identified as having an effect on the nature of track experiences in NPs and other reserve areas. This pollution can take two broad forms. In the first instance there is the pollution from the tourism industry itself. Pollution can take a variety of forms including human waste (Parkin & Parkin 2001) and rubbish (Hillery, Nancarrow, Griffin & Syme 2001; Noe, Hammitt & Bixler 1997). There appears to be debate in the published literature as to the effect of pollution on track experiences. Lynn and Brown (2003) in a survey of 99 hikers on the Starkey Hill Interpretive Trail (Canada) noted that recreational use impacts (litter, trail erosion etc.) had an impact on the tourists' perception of the naturalness of an area. In contrast, the aforementioned Tasmanian Parks and Wildlife Service survey of Overland Track and Pine Valley walkers found that 17% of respondents viewed litter as being a significant factor affecting their experiences (Poll 2006). Another form of pollution relates to the negative environmental effects of other industries which often have to coexist with track users. Seldom are track users the only group which benefits from the existence of track infrastructure in multi-use state forest jurisdictions. One of the principle examples of another stakeholder group is the logging industry. Logging has the potential to negatively affect forest based tourism in multi-use state forests both on a visual amenity level and a shared infrastructure level. This second issue is particularly prevalent in an environment like the NSW south coast where 94% of visitors use private automobiles to access forest sites by means of logging tracks (Bureau of Transport and Rural Economics 2000). The authors have not found any evidence of literature which has considered the effects of primary forest industries on the track experiences of tourists. This will be an important area of future research focus.

Before moving on to consider track users experience in three NSW NPs it is appropriate to mention the deficiencies that can be observed in the current track experience. Firstly it can be said that there appears to be a disparity between the number of studies into track experiences in NPs and the large number of works that have been completed on the nature of the tourist experience in natural areas over the last 20 years (see Borrie & Birzell 2001; Dawson et al. 1998; Glaspell et al. 2003; Godfrey-Smith 1979; Hochtl, Lehringer & Konold 2005; Lynn & Brown 2003; Patterson, Watson, Williams & Roggenbuck 1998; Scherl 1988; Stewart & Cole 1999; United States Department of Agriculture, Forest Service & Station 2001; Watson & Roggenbuck 1999; Watson, Roggenbuck & Williams 1991). Research by STCRC has tended to fit into this broader nature experience category, examining visitor demographic characteristics and satisfaction levels in selected NPs (Archer & Griffin 2004; 2005; Armstrong & Weiler 2003; Grubert & Kriwoken 2002). On this issue the authors advocate that academics continue to pursue the track tourist experience. Academics are in an ideal position to incorporate consideration of the psychological nature of the tourist experience into management discussions (Cohen 1979; Mannell & Iso-Ahola 1987; Ryan 2002). Recognition of the psychological underpinnings of experience appears to be absent from the majority of track management plans that have been produced by the various state government park authorities.

Secondly, it has been recognised that there is a lack of comprehensive literature reviews of track users and their experience patterns. State of play literature review articles, which focus on a particular discipline provide researchers with a reference guide to the context, method and focus of previous studies (Pike 2002). They also may serve to set an agenda for future research endeavours. In 1986 an agenda for track experience research was set as part of the *President's Commission on American Outdoors* (Krumpe & Lucas 1986). This report identified the following issues as being worthy of future research:

- Do the users of trails near population concentrations differ from users of more remote backcountry trails?
- How do poor trail design and maintenance affect trail users' experiences?
- What are the human benefits derived from trail use?[5]
- To what extent should existing trails be relocated to more durable sites and how should managers decide whether to reconstruct or relocate?
- What are the most effective techniques to rehabilitate damaged trails and trail sites?
- How can incompatible users be effectively separated?
- How can more trails be made available near population concentrations?
- What information would be most useful to trail users and how and when should it be made available?
- How do trails and trail users affect wildlife?
- What are the long term trends in trail use?[6]
- What are the barriers to providing more public trails? (How can trail opportunities be provided where public lands are scarce?)
- What are the barriers to public participation and use of trails?

Many of these issues have been addressed in subsequent research (see Table 2). What has, we feel, not been adequately considered is the true complexity of the tourist experience idea, as it relates to track users. The tourist experience is fundamental to every issue outlined above. The variable/psychological nature of the experience concept has, however, meant that there are multiple ways that the topic can be approached. The studies outlined in Table 2 have used a variety of theoretical orientations to consider issues relating to experience including: social norms and theory of planned behaviour (Beeton 1999; 2006), conflict literature (Carothers et al. 2001) and place attachment/behavioural loyalty (Kyle, Graefe, Manning & Bacon 2004). All of the above are appropriate theoretical orientations for each respective paper. What is now needed is one comprehensive work which can draw together the various strands of experience research and offer observations as to how best to direct track experience literature over the next 20 years. It is also appropriate that this audit of track tourist experience research integrates academic literature in with industry reports and government management plans. The authors have observed a lack of synthesis between these different research hubs.

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[5] Some research on this issue has been completed by the Parks Victoria as part of their Healthy Parks Health People project (see http://www.parkweb.vic.gov.au/1process_content.cfm?section=99&page=16)

[6] Some research on this issue has been completed by the Parks Victoria as part of their Victorian Trails Strategy (see http://www.dse.vic.gov.au/CA256F310024B628/0/94860F40554428CACA2570AD001CC1FD/$File/FINAL+Trails+Strategy+220305.pdf)

Table 2 Track experience literature

Author(s)	Date of Publication	Aim of Paper	Population Sampled/ Location of Study	Outcomes Measured	Factors Identified as Influencing Track Usage or experience
Beeton	1999 2006	* To ascertain levels of attitudinal conflict between walkers and horseback tour groups. * To recommend techniques in relation to the management of multiple-use environments.	People bush walking in the Alpine National Park in Victoria, Australia/ Bogong Unit of the Alpine National Park and Mount Buffalo National Park	Social conflict was not as great as anticipated, there were high levels of misinformation regarding the operating permit requirements placed on horseback tours. Also many of the survey respondents who had negative attitudes towards horseback groups had not actually encountered any themselves.	Interaction between trail user groups
Bradford & McIntyre	2007	* To assess the effects of signs on mitigating social trail use on two of the park islands. * To examine the effectiveness of message text, and location in reducing the amount of social trail use by visitors.	Kayakers, canoeists and sailors/St. Lawrence Islands National Park, Ontario, Canada	An attribution message was more effective than a plea message at eliciting desired behaviours. Furthermore, when signs were posted at social trailheads, use of the social trail was reduced significantly compared to no messages, or messages located at points of entry to the islands.	Interpretation Messages
Carothers, Vaske, & Donnelly	2001	To examine the extent to which interpersonal conflict and social values conflict exists between hikers and mountain bikers.	Hikers and Mountain bikers/ Jefferson County Open Space trail system, west of Denver, Colorado	Less conflict was reported for hiking than for mountain biking. To the extent that conflict did exist for hiking, mountain bikers and dual-sport participants were more likely than hikers to report unacceptable behaviours. When evaluating mountain biking behaviour, hikers were more likely than mountain bikers to experience conflict. Perceptions of conflict reported by dual-sport participants fell in between these two extremes. For all behaviours evaluated for both hikers and mountain bikers, all three groups reported mostly interpersonal as opposed to social values conflict. Providing separate trails for hikers and mountain bikers may help to alleviate some of this conflict. As an alternative to closing trails to specific user groups, such conflicts may be addressed more effectively through a combination of increased law enforcement, expanded education programs, and the posting of signs.	Interaction between trail user groups
Cessford	2002	To explore the perceptions that walkers have of the social and environmental impacts of mountain bikers in a shared trail environment.	Bushwalkers/ New Zealand	Bushwalker opinions on mountain bikers were found to be more positive where the walkers in question had had personal contact with mountain bikers. Results draw attention to the distinction between perception of a stakeholder conflict and the actual outcome from an experience.	Interaction between trail user groups
Cessford	2003	To explore some of the impact issues that managers face in providing such shared biking/walking tracks, and report on a recent survey of walker perceptions of biking on this track.	Not stated/Queen Charlotte Track NZ	The perceptions and realities of impacts can sometimes be quite different, and greater awareness and experience can lead to a reduction in problem perceptions.	Interaction between trail user groups

Author(s)	Date of Publication	Aim of Paper	Population Sampled/ Location of Study	Outcomes Measured	Factors Identified as Influencing Track Usage or experience
Chhetri, Arrowsmith & Jackson	2004	* To attempt to identify the underlying dimensions influencing visitor experiences through natural landscapes. * To determine the factors that influence the nature, magnitude and characteristics of visitor experience in natural landscapes.	Bushwalkers/ Pinnacle walking track in the Grampians Nation Park in Western Victoria (loop track)	Through multi-dimensional scaling analysis and principle components analysis a number of underlying dimensions of experience were identified. These included 'social experiences', which related to isolation and crowding and 'impelling experiences', which related to a desire to learn more about the trekking environment.	* Personal psychological factors such as apprehension * Congestion * Education opportunities
Dorwart, Leung, & Moore Dorwart	2004 2007	To understand park visitors' perceptions of elements of the trail environment within one NP and to how these perceptions affected the visitors' outdoor recreation experiences.	Hikers who planned to hike out and back along the entire 2.9 mile study area of the Appalachian Trail/Great Smoky Mountains National Park	* Visitors are noticing various elements along the trail, such as nature-oriented details, scenic values, management influences, the presence of others, and depreciative behaviour. * Perceiving positive elements of the trail environment may have enhanced the quality of the participants' overall experiences. Yet, noticing negative elements did not detract significantly from visitors' overall experiences. * Elements of the trail environment included sights and sounds on and along the trail, smells, trail surfaces, views, and characteristics or patterns of the trail that may have had negative and positive effects on the visitor's experience.	* Natural features of the trail environment * Congestion
Hearne & Salinas	2002	To present the use of choice experiments as a mechanism to analyse preferences of national and international tourists in relation to the development of Barva Volcano Area in Costa Rica.	All park visitors/ Poas Volcano of the Braulio Carrillo National Park in Costa Rica	Visitors preferred improved information as well as aerial trams and observation towers. Both modern and semi-rustic infrastructure was preferred to rustic infrastructure. In general, the survey respondents demonstrated a preference for site development, with efforts to provide more information, better views, and more modern infrastructure. Seventy-two per cent of foreign tourists expressed concern that congestion did reduce the quality of their visit, but it is consistent with the indifference that Costa Rican visitors expressed to congestion effects. It may be difficult for NP managers to develop use restrictions that address the concerns of foreign tourists it may be acceptable for park managers to limit access to certain trails during the week, to allow for some isolated nature appreciation, and to allow unlimited access during weekends when crowds require more space.	Congestion
Hull, Stewart & Young	1992	To examine the properties of hiker experience patterns to determine whether they are worthy of future theoretical and empirical study.	Hikers/White River National Forest, Colorado	*Relaxation decreased for uphill hikers. *Satisfaction couldn't be split between up and down hill hikers but uphill hikers' satisfaction was dependent on the quality of the setting. *A recreation experience is dynamic and fluctuates over the course of the engagement.	N/A

Author(s)	Date of Publication	Aim of Paper	Population Sampled/ Location of Study	Outcomes Measured	Factors Identified as Influencing Track Usage or experience
Jackson, Haider & Elliot	2003	To provide a quality winter outdoor recreation experience for a diverse visitor base. Increasing knowledge about what motivates individuals, what factors increase or decrease satisfaction, and testing the effectiveness of conflict management strategies will contribute to resolving inter-group recreation conflict.	Not stated/Chilkoot Trail National Historic Site, Canada	On restricted weekends, non-motorised users had sole access to the park without the presence of snowmobiles. This restriction did increase skier satisfaction, both overall and even more so on restricted weekends, by reducing the negative effects of inter-group encounters experienced by non-motorised users. The primary difference between motorised and non-motorised visitors is the strength of the nature-based component for non-motorised users.	Interaction between trail user groups
Kyle, Graefe, Manning & Bacon	2004	To provide an empirical examination of the first order structural relations among involvement, commitment, resistance to change and behavioural loyalty for hikers.	Hikers/ Appalachian Trail	Involvement does predict commitment which in turn predicts loyalty.	N/A
Lawson, Roggenbuck Hall & Moldovanyi	2006	To extend existing applications of stated preference methods to wilderness management by examining whether there are differences in wilderness setting preferences among day and overnight visitors to the Okefenokee Wilderness (water trails).	Boaters/ Okefenokee National Wildlife Refuge	Understanding the wilderness setting preferences of different subgroups of visitors, for example: crowding while travelling by boat on the water trails of Okefenokee Wilderness may not have been a problem for most visitors at the time of the study currently only overnight visitors are charged an entrance fee—there will be opposition from day users if a fee was imposed on them.	N/A
Lynn & Brown	2003	To measure the effect of recreational use impacts (trail erosion, extension and widening, muddiness, tree and plant damage, fire rings and littering) on the hiking experiences of individuals (dimensions of solitude, remoteness, naturalness and artifactualism).	Hikers/Starkey Hill Interpretive Trail 100kms west of Toronto, Canada	Recreational use impacts negatively affected hiking experiences in natural areas. Litter, tree and plant damage, fire rings, trail extension and widening and trail erosion had a negative effect on perceptions of artifactualism, remoteness, naturalness, and to a lesser degree solitude. All the experience indicators greatly contributed to the overall satisfaction of hikers.	Trail erosion, extension and widening, muddiness, tree and plant damage, fire rings and littering, solitude, remoteness, naturalness and artifactualism
McCool & Cole	2000	To consider which sections of a track/ trail visitor market respond to minimum impact messages posted on a bulletin board located along a heavily used trail.	All track users/ Selway-Bitterroot Wilderness (Montana)	The results indicated that the bulletin board was most effective for hikers and overnight users. Personal utility of the messages posted on the bulletin board was one reason that such users, rather than horse riders or day users may attend to them.	N/A

Author(s)	Date of Publication	Aim of Paper	Population Sampled/ Location of Study	Outcomes Measured	Factors Identified as Influencing Track Usage or experience
Morey, Buchannan & Waldman	2002	Project developed from recognition of the need for managers to monitor the interaction between mountain bike riders and other track users. In order to estimate the impact of management approaches, the paper develops a model that predicts the effects of changes in trail characteristics and introduction of access fees, and correlates these with biker preference on trail selection.	Mountain bikers/ Portland Bike Show (Oregon)	The mountain bike sample group illustrated a preference for more single-tracks and the banning other users from track environments. Fees, by themselves, would be unwelcome. Trail difficulty is appreciated, but only up to a point. The consumer surplus estimates varied across bikers quite plausibly in terms of household budget, gender and interest in mountain biking. Willingness to pay is a function of income and interest in mountain biking. The results suggest that significant numbers of bikers would be willing to pay an access fee for improved conditions; the amount would depend on the number of substitute sites and the trail characteristics and fees, if any, at those sites.	* Interaction between trail user groups * Usage fee
Mills	2005	To determine the extent to which 'flow' experiences occur among thru-hikers on the Appalachian Trail (AT).	Thru hikers/ Appalachian Trail	* Flow experiences occurred for approximately three out of every five thru-hikers. * The activities that were specified as most often providing a flow experience for thru-hikers was 'walking/hiking alone' and 'looking at a view'.	* Level of social interaction * Natural features of trail environment
Newman, Manning, Dennis & McKonly	2005	To evaluate how visitors to Yosemite National Park wilderness make tradeoffs among indicators of quality that represent social, ecological and managerial dimensions of the recreation experience.	National Park visitors/Yosemite National Park	Six attributes with 3 levels: signs of human use at campsites, numbers encountered per day while hiking, encountering stock or signs of stock use, regulation of camping, chance visitors have of receiving a permit, opportunity to camp out of sight and sound of other groups. Visitors support some degree of management over where and how many visitors may camp and also support visitor use limits.	N/A
Sang-Oh Kim & Shelby	2006	To examine the comparability of onsite and offsite methods for measuring norms for trail impacts using photo/survey techniques.	Hikers/Mudeung-Mountain Provincial Park, Korea	There were no substantial differences in maximum acceptable impacts between onsite (onsite-visitor group surveyed at the actual trail points and onsite-II departing visitor group surveyed at the exit area) and offsite (students surveyed in a laboratory setting) groups for the two norm measurement alternatives.	Environmental degradation
Taylor & Knight	2003	* To understand how backcountry trail users view the effects of their recreational activities on local wildlife. * To examine the responses of bison (Bison bison), mule deer (Odocoileus hemionus), and pronghorn antelope (Antilocapra americana) to hikers and mountain bikers at Antelope Island State Park.	Backcountry trail users/Antelope Island located in the southeast corner of the Great Salt Lake (Syracuse, Utah)	* Within a species, wildlife did not respond differently to mountain biking vs. hiking, but there was a negative relationship between wildlife body size and response. The authors calculated the area around existing trails on Antelope Island that may be impacted by recreationists on those trails. Based on a 200m 'area of influence' 8.0km (7%) of the island was potentially unsuitable for wildlife due to disturbance from recreation. * Approximately 50% of recreationists felt that recreation was not having a negative effect on wildlife. In general, survey respondents perceived that it was acceptable to approach wildlife more closely than our empirical data indicated wildlife would allow. Recreationists also tended to blame other user groups for stress to wildlife rather than holding themselves responsible.	N/A

Author(s)	Date of Publication	Aim of Paper	Population Sampled/ Location of Study	Outcomes Measured	Factors Identified as Influencing Track Usage or experience
Torbidoni, Grau & Camps	2005	To study the relationship between recreational supply (trails) and demand (visitor characteristics).	All park visitors/ Aigüestortes i Estany de Sant Maurici National Park, (Pyrenees) Spain	* Age, sex, professional status, education, accessibility, lodgings, time spent in the park, visit frequency, type of group, motivation. * Trails clustered into: Short trails (8), Long trails (20) and, Trails ending on a mountaintop (9)	* Accessibility of trail * Trail difficulty * Popularity of the trail * Natural scenery * Recommendations from other users
Walker	2003	To discover the degree to which mountain bikers and hikers focus in the environment and to identify the key environmental elements and cognitive processes relevant to creating the mode of experience and underlying conflict. Visitor Employed Photography, VEP, and follow-up interviews were combined to explore mountain bikers' and hikers' perceptual experiences.	Mountain bikers and hikers/East Loop Trail at Lake Bryan in Bryan, Texas	Findings indicate that mountain bikers tend to concentrate on trail corridor elements while forming or creating their path/line to travel, while hikers tend to look around, scan, or take in full views of wildlife, vegetation, and noises. Combined analyses suggest that mountain bikers photograph on-trail tread-specific and path/line perceptions, while hikers photograph Off/Off distant views of vegetation and noises. Consensus existed among both for photographing on distant at trail corridor elements down the path/line; on distant at trail corridor elements panoramic forward; and at the edge of specific vegetation elements. Interview findings indicate that participants rely on complex cognitive processes that involve focusing on many areas of the trail at one time. The participants' cue formation processes, foreground/background formation, goals, sequencing, and dynamic movement also influence their mode of experience.	Interaction between trail user groups (conflict)
Watson, Niccolucci & Williams	1993	To examine the interaction between hikers and recreational livestock and identify some of the factors contributing to conflict between hikers and horse users.	Hikers and Stock users/John Muir Wilderness, Sequoia-Kings Canyon National Parks Wilderness & Charles C. Deam Wilderness	'Not all hikers dislike encountering horses in wilderness. Based on values hikers have for wilderness and their perceptions of horse users, models developed during the study can predict with more than 80% success (87% at the Deam Wilderness) whether hikers will experience conflict when they encounter horses. Twenty per cent of Deam hikers who encountered horses on their visit enjoyed meeting them. About half of all hikers who encountered horses reported they did not mind meeting them in the wilderness. From 25–40% of hikers at these three wildernesses did not encounter horses on their trips. Whether this occurred by chance or is evidence they tried to avoid meeting horses is not known. At the Deam Wilderness nearly one-fourth of hikers and horse riders disliked encountering groups with dogs. At this wilderness, the only one where we asked visitors whether they liked encountering dogs, the social conflict related to such encounters equals or exceeds that of hikers encountering horses.'	Interaction between trail user groups (concern over inappropriateness of horse use in wilderness, differences in perceptions of visitors' status related to horse use, differences in the strength of attachment to the wilderness, and the value placed on opportunities for solitude).

Author(s)	Date of Publication	Aim of Paper	Population Sampled/ Location of Study	Outcomes Measured	Factors Identified as Influencing Track Usage or experience
Watson, Williams, Roggenbuck & Daigle	1992	To understand some of the contributors to the conflict between hikers and horse users.	Permit holders and randomly sampled drivers/ John Muir Wilderness, Sequoia-Kings Canyon National Parks Wilderness, Charles C. Deam Wilderness USA	Three conflict-related measures were used (e.g. was there anything that interfered with the quality of the experience). Seventeen potential conflict predictors consisted of multiple-item scales, principally two types of summative scales. About half the hikers indicated that the behaviours of others interfered with their wilderness experiences, though only about half of those identified horse groups as interfering. The problems commonly evaluated as most severe by hikers were those related to horses, specifically impacts to trails, horse manure on the trails, and vegetation damaged by horses. Litter and crowding were also big problems for hikers. Stock users rated litter and human damage to vegetation as the most severe problems, but horse impacts to trails also received negative evaluations. Hikers at all areas placed more importance than stock users on solitude and on the number of encounters with other groups than stock users	* Interaction between trail user groups * Level of social interaction
Wood, Lawson & Marion	2006	To integrate measures of resource impacts with information about visitor use and behaviour obtained through direct observation to provide park managers with a more informed basis for developing resource protection strategies.	Hikers/Little Stony Man Cliffs USA	* Impact indicators assessed at cliff-top and cliff-bottom recreation sites and campsites included area of disturbance, vegetation loss, exposed soil, tree damage, tree stumps, root exposure, number of informal (visitor-created) trails, and expansion potential. * Five types of visitor use information were collected through direct observation, including the number of people at one time in each of the three observation zones; occurrences of soil/vegetation trampling (behaviour observations); total daily use of the cliff top; visitors' length of stay on the cliff top; and supplemental observations concerning visitor use and behaviour	N/A

Chapter 3

CURRENT PRACTICE IN NSW NATIONAL PARKS

Introduction

The previous chapter explored empirical research that has been conducted on the management of track experiences. This research is primarily from North America with limited Australian data. In New South Wales the management of track experiences has been left up to individual park authorities resulting in a lack of consistency in track design. The NSW Department of Environment and Climate Change (DECC) (Formerly the Department of Conservation) found that short walking (under an hour) was undertaken by 43% of visitors to the NSW NPs (NSW DEC 2005). The most popular activities were 'Rest and Relax' (62%) followed by 'Socialise with family and friends' (45%) and 'Picnic/barbeque' (43%). These figures vary from park to park. For this reason three of these NPs; Blue Mountains, Kosciusko and the Central Eastern Rainforest Reserves of Australia (CERRA), will be presented as separate case studies below. They have been chosen due to their extensive track systems and popularity with domestic and international visitors.

Blue Mountains National Park

Blue Mountains National Park (BMNP) is located 100 kilometres to the west of Sydney and covers an area just over 247 000 hectares (Figure 3 overleaf) (NSW NPWS 2001). It is an area rich in native flora and fauna and due to its diverse natural and cultural heritage was inscribed on the World Heritage List in 2000 (UNESCO 2008). The diverse environments and history attract a large number of domestic and international visitors which are estimated to reach three million annually (NSW NPWS 2001). Another feature which attracts these visitors is the extensive network of tracks linking the historic townships to the NP.

Management of tracks and trails

The BMNP contains over 140 kilometres of walking tracks (NSW NPWS 2006b). Most of these tracks are over 100 years old and due to the vast network, budgetary constraints and conflicting expenditure priorities, some tracks have been closed or fallen into disrepair (Jephcott & Smith 2001). The management of these tracks is governed by the NSW NPWS who are committed to providing quality walking tracks.

> *The NPWS walking track design standards and the Blue Mountains Walking Track Strategy will provide the basis for a standardised park information sign system, which will be progressively implemented as signs need replacing or as the need for signs arises. Multilingual signs will be included consistent with projected increases in international visitors (NSW DEC 2005, p. 54).*

Research conducted by the Central Branch of the NSW NPWS in 2004/2005 (NSW DEC 2005) found that the three most popular activities undertaken by visitors to the BMNP were sightseeing/scenic driving, short walks and medium walks (Figure 4 overleaf). As they are a key attraction for visitors to the region, 79% of people go walking in the BMNP (NSW NPWS 2006b), there has been a renewed interest by NSW NPWS to improve the walking tracks and facilities. This has been supported by a $7 million project: 'The Blue Mountains National Park Walking Project' (2005−2009) which aims to increase visitor enjoyment (NSW NPWS 2006b). In 2005/06 major upgrades of popular tracks in the park were undertaken. Since then there have been frequent community reference group meetings to discuss the course of the project (NSW NPWS 2006b).

Figure 3 Map of the Blue Mountains National Park
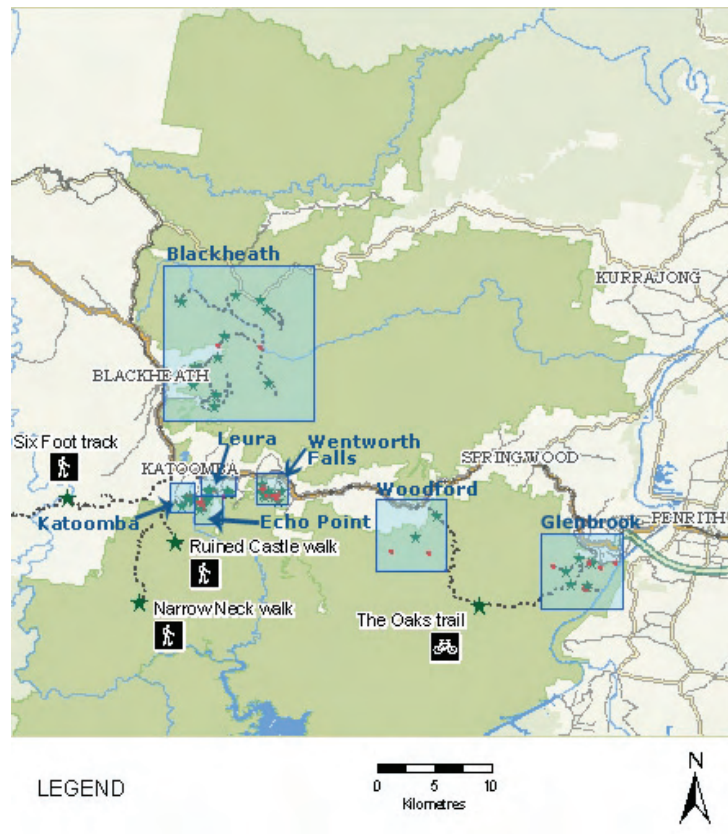
Source: NSW DEC (ND)

Figure 4 Activities undertaken in BMNP during current visit
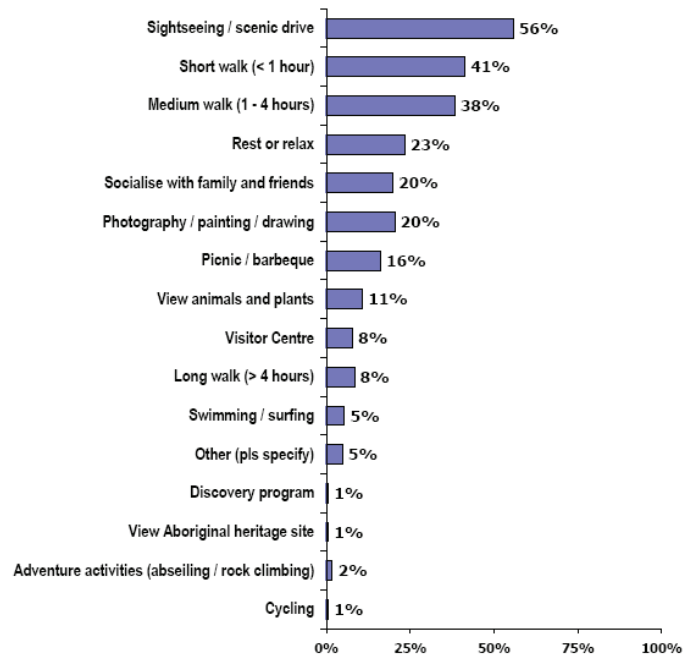
Question 11: What activities did you participate in or do you plan to participate in during this visit to the park?
Base: n=168 (432 responses)   Source: (NSW DEC 2005, p. 127)

Factors affecting track usage and experiences

In the most recent study conducted by the NSW NPWS on visitors' experiences with tracks to the BMNP, a number of aspects (Table 3) were considered to be more than important to visitors (NSW DEC 2005). These included the 'condition of walking tracks', 'behaviour of other visitors' and 'condition of the environment'. To analyse the experience visitors had with these aspects, their mean responses were plotted against the mean satisfaction. 'Results indicate that the walking tracks in BMNP are generally meeting visitor needs and/or expectations' (NSW DEC 2005, p. 149). This was due to satisfaction of the several aspects tested either outscoring or being quite similar to the importance of these aspects to the visitor. This is shown in Table 3.

Table 3 The importance and satisfaction of factors affecting the BMNP track experience

Factor	Importance*	Satisfaction*	Experience
Availability of guided tours	2.8	3.4	Positive
Number of people on walking tracks	3.5	3.6	Slightly positive
Challenging walks	3.7	4.0	Slightly positive
Availability of easy walks	3.9	4.0	Slightly positive
Condition of roads	3.9	3.9	Neutral
Presence and availability of rangers	3.4	3.2	Slightly negative
Sightings of wildlife	4.1	3.4	Slightly negative
Condition of walking tracks	4.2	4.0	Slightly negative
Behaviour of other visitors	4.3	4.0	Slightly negative
Amount of litter/rubbish	4.5	4.1	Slightly negative
Condition of the environment	4.6	4.3	Slightly negative

* The scale extends from 1= Very Unimportant/Very Unsatisfied to 5= Very important/Very satisfied

Table created from data provided in NSW DEC (2005 pp. 128–153)

As a result of the negative experiences shown in Table 3, a number of recommendations were made. These included: ongoing management and monitoring of the environment, amount of rubbish/litter, condition of walking tracks and visitor behaviour; attending to visitors' expectations of wildlife sightings and; monitoring visitor satisfaction 'to ensure that these aspects continue to meet visitor needs and/or expectations' (NSW DEC 2005, p. 149). To add to these, in their pilot study to obtain visitor attitudes and perceptions about track class in the BMNP, Wearing and Nelson (2000) found that there was a strong preference for tracks which retained their natural character. Again, factors that affected the experience were litter and overcrowding.

Visitors were asked to suggest improvements to the BMNP (NSW DEC 2005, p. 4). While 36% found this difficult the remaining 64% noted the following improvements:
- more and/or updated facilities (toilets, seat, bins, bubblers) (17%)
- more and/or better signposting (12%)
- keeping park maintained (including waterways) (10%)
- easier access such as wider roads and bridges and/or better road surfaces (10%)
- more or cheaper parking (8%)
- more or better pathways (7%).

Although these suggestions are not specific to walking tracks in the BMNP, it is apparent that interpretation techniques (like signposting) and the quality of the pathways would affect the track experience. The BMNP recognises the affect that signposting plays in the track experience. One policy they have outlined in their Plan of Management (POM) (NSW NPWS 2001, p. 53) is 'information signs at track heads and other visitor focal points will continue to be used as an important means of presenting park and safety information to visitors'.

The results of these two studies suggest that generally visitors to the BMNP are happy with the choice of tracks on offer. There are still several issues that need management and planning in order to enhance the experience of the track users in BMNP. The priorities appear to be management of the environment and expectations of the tourists.

Kosciuszko National Park

The Australian Alpine region on the border between New South Wales and Victoria, and extending into the ACT, is made up of several NPs and reserves and the tallest mountain in Australia, Mount Kosciuszko (Figure

5). On the NSW side, Kosciuszko National Park (KNP) is the largest in Australia and as a recreational destination attracts close to one million visitors per year (NSW NPWS 2006a).

Figure 5 Map of Kosciuszko National Park and its surrounds
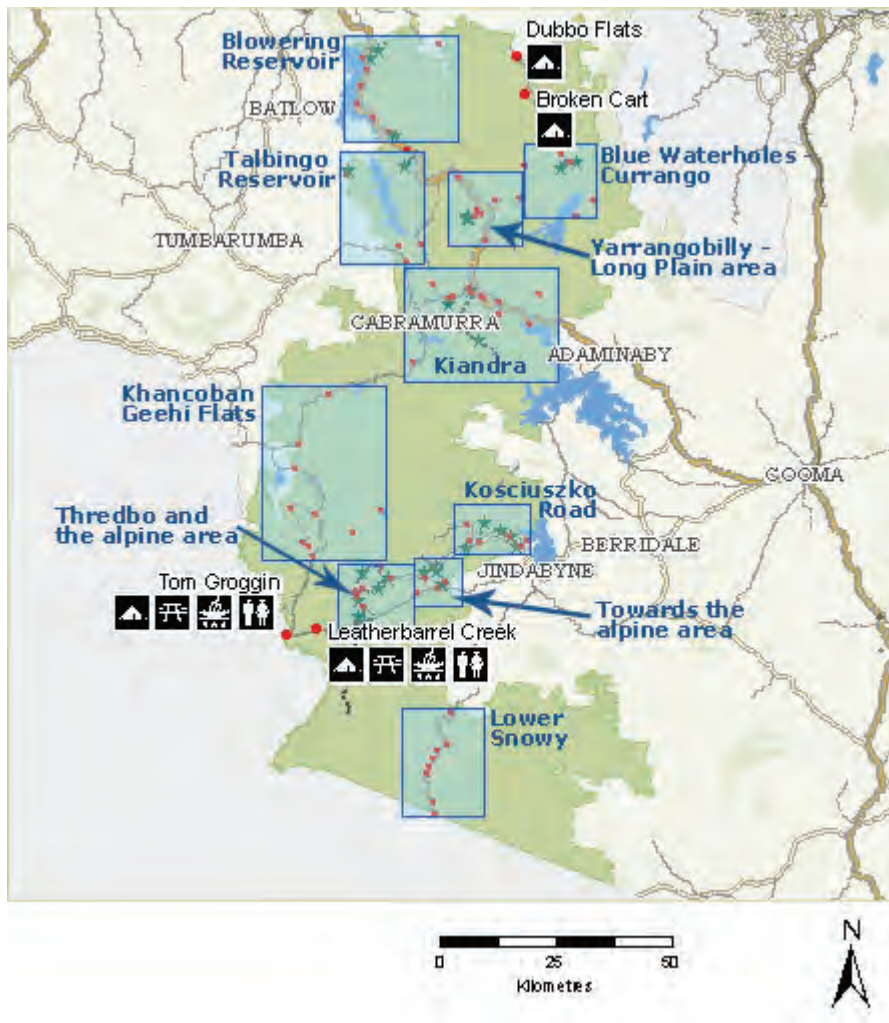
Source: NSW DEC (ND)

Management of tracks and trails

The KNP is managed by the NSW National Parks and Wildlife Act 1974 and is also informed by the World Commission on Protected Areas (part of the World Conservation Union or IUCN) and the Australian Alps Cooperative Management Program[7]. Along with several stakeholders including an independent scientific committee, community forum (representing local industry, tourism authorities and local government), an Aboriginal Working Group and the public, The Kosciuszko National Park POM (2006a) was prepared to distinguish the natural heritage, cultural heritage and recreational value on offer. The recreational desired outcomes of the POM are that:

- visitor experiences are enhanced through the availability of a greater variety of recreational opportunities and facilities across a broad spectrum of settings, particularly for visitors with special needs
- recreational activities and facilities are managed in accordance with the park zoning standards and conditions
- all NPWS visitor facilities reflect a consistent 'signature' appearance and construction, showcasing excellence in environmental design, sitting and performance
- visitor facilities are provided in an integrated manner along particular road corridors, within particular parts of the park, and across the entire park
- impacts associated with particular recreational activities and facilities are managed within disturbance thresholds
- monitoring programs form an integral component of recreation management.

It is the first outcome that is of interest to the researchers. Understanding visitor track experiences will aid in the planning and management of facilities and services available to visitors.

Although the KNP is considered a winter destination popular for skiers and people who want to see the snow for the first time, the NSW NPWS (2006a) estimates that one third of annual visitors travel to the park during summer while other authors debate that this figure is closer to 50% (see for example Worboys & Pickering 2004). The most popular activity by far during this period is walking (both short and long walks) accounting for 78.8% of visitors (Johnston & Growcock 2005). The KNP has identified that as the most popular non-winter activity, 'walking provides visitors with one of the best ways to appreciate those values of the park that can only be experienced outside the confines of their motor vehicles' (NSW NPWS 2006a, p. 118). Their main concerns with walking are:

- the increased erosion of soil and the spread of weeds
- human waste disposal and accumulation of rubbish
- the displacement of walkers seeking more challenging and less-developed walks
- crowding.

They see the main solution to these concerns is to increase the choice of tracks available, particularly short walks and accessible to wheel chairs (there is currently only one). One objective set to achieve this aim is to prepare a Walking Track Management Strategy specifically for the park which provides for all types of walkers (NSW NPWS 2006a). There is currently a strategy for the Australian Alps Walking Track (AAWT) (Australian Alps Liaison Committee 2005) designed to ensure states and territory work cooperatively in planning and management of the AAWT. A second objective set in the POM is to manage the behaviour of visitors through the provision of information at track heads and in all huts along the tracks. These are just two small ways that the KNP can manage the visitor experience.

Factors affecting track usage and experiences

Johnston & Pickering (2001) noted that prior to 2000 there was a problem with inadequate data and information about tourist use of the KNP. In fact only three intensive surveys of visitor numbers had been conducted[8]. Since then, the STCRC project guided by Johnston and Growcock (2005) aimed to identify track level use, visitor demographics and more importantly, discover visitor satisfaction levels and attitudes towards the alpine area and

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[7] 'The program, which is based upon a memorandum of understanding initially signed in 1986 by the NSW, Victorian, ACT and Commonwealth Ministers responsible for protected areas, aims to promote inter-governmental cooperative management to protect the nationally important values of the Australian Alp' (NSW NPWS 2006a).

[8] The three earlier studies on visitor numbers were: Worboys, G. (1978). 'The Mount Kosciusko Outstanding Natural Area Plan. A Supplementary Specific Plan to the Kosciusko National Park Plan of Management', New South Wales National Parks and Wildlife Service Report, Jindabyne, NSW; Murphy, P.J. (1985). 'Recreation impact on Blue Lake Kosciusko National Park', BSc (Hons) thesis, University of New South Wales, NSW and; Virtanen, S. (1993). 'Toward conservation and recreation management of the Kosciusko Alpine Area', New South Wales National Parks and Wildlife Service Report, Jindabyne, NSW.

its management. The results of the study indicated that the short alpine walks were far more popular than the long ones accounting for 31.2% of those surveyed from Crackenback chairlift and 46% of those surveyed from Charlotte Pass opting for the five minute 'Snow Gums Walk'[9].

Generally visitors were quite happy with the facilities provided and quality of experience. Walking tracks, the summit area, toilets and revegetation programs all scored an above average rating by visitors. However, visitors were unhappy with the choice of track they had. The NSW NPWS (2006a) found that crowding is an issue as there is only a limited number of tracks available to KNP visitors. This causes visitors to go off track and create their own tracks and therefore cause further damage to the natural environment. This is noted by respondents when asked what they wanted in a walking track in the KNP (Johnston & Growcock 2005, p. 15). The results were:

- as natural as possible (52%)
- comfortable walking surface (48%)
- interesting scenery and destination points (42%)
- reasonable walking grades—good design (28%)
- environmentally friendly (28%)
- less crowding—design/choice (27%)
- well maintained (25%).

When asked about the type of tracks they wanted included (Johnston & Growcock 2005, p. 15) the most popular comments were:

- more choice (63%)
- loop walks (41%)
- educational walks (32%)
- short walks to vista points (such as the Snow Gums walk at Charlotte Pass) (25%).

Loop walks and short walks to vista points were mostly popular with the elderly and family groups. This is the only study found and presented in this report that has looked at what visitors prefer in the type of track.

Although signage was rated quite highly, Johnston and Growcock (2005) cite an undergraduate study by McMaster[10] about interpretation in the KNP. The study found that although 68% of visitors found the signage to be excellent, 71% still made recommendations. Some of these suggestions are the inclusion of information outlining rules, safety, interpretation (on landscape and native flora and fauna), management issues and directional signage.

Dickson and Dolnicar's (2006) study is the most recent to explore the characteristics of hikers to the KNP. They surveyed 542 hikers on the Easter weekend, 2005 and were able to segment them by motivational factors. Six segments were found: 'Outdoor lovers', 'Along for the ride', 'Unmotivated', 'Passionate Soloists', 'Solitude', 'Hedonists' and 'Personal Achievers'. Each group displayed high and low levels of motivation and satisfaction for certain factors. The largest segment, 'Hedonists' (118) had a strong motive for enjoying the outdoors, climb mount Kosciuszko, get away and relax while they were not motivated at all by solitude. They also had the 'lowest satisfaction with completely achieving the motivator of learning about the local flora and fauna (6%)' (Dickson & Dolnicar 2006, p. 11). The results of this study suggest that there are several types of hikers based on motivation and satisfaction. In order to manage the track experience for each group of users, these segments need to be identified for each individual park.

The results of the two studies presented in this case study suggest that there is a large amount of data missing. Although the results show experience of visitors to the KNP, they fail to address whether these experiences have been negatively affected by certain factors (for example the quality of signage and toilets and the length and type of track) and if so, will this affect future usage patterns. These are crucial aspects for management to consider.

Central Eastern Rainforest Reserves of Australia

Central Eastern Australia is home to thousands of hectares of rainforests, NPs and State Forests (Figure 6). The Central Eastern Rainforest Reserves of Australia (CERRA) is a World Heritage listed region scattered through north-eastern New South Wales and south-eastern Queensland comprising of 50 reserves covering a total area of

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[9] The two survey sites in the Johnston and Growcock (2005) study considered the main entry points to the KNP to be Thredbo (Crackenback chairlift), 67.5% and Charlotte Pass, 32.5%.
[10] The undergraduate honours study is: McMaster, K. (2000). 'Interpretation for summer recreation in the Kosciuszko alpine area', BSc (Hons) thesis, Australian National University, Canberra.

366 514 hectares (Chester & Bushnell 2005). An estimated 2 million visitors visit the region annually (Chester & Bushnell 2005) however, because of the geographical spread of the area administered by government agencies in Queensland (QLD) and NSW in collaboration with NSW NPWS and Queensland Parks (QP) as well as the federal agency, marketing and management practices and accurate recording of visitor numbers to the region has been fragmented (Mackellar & Derrett 2006).

Figure 6 Map of the CERRA World Heritage Area

Source: (Lismore Council 2008)

Management of tracks and trails

CERRA comprises major regional tourist attractions such as Mount Warning National Park, Border Ranges National Park in NSW and Lamington National Park and Springbrook National Park in QLD. All of these contain walking tracks, waterfalls and scenic lookouts (Mackellar & Derrett 2006). A report prepared for the Department of Environment and Conservation's Parks and Wildlife Division (Calkin and Associates & Tourism Strategy Development Services 2006) found that the second most popular activity between 1998 and 2005 undertaken in the Northern Branch of NSW was 'Outdoor or Nature Activities'. Twenty per cent of domestic overnight visitors went bushwalking or visited a NP compared to 9% of domestic day visitors. International visitors to the region are more likely to want an outdoor experience (95%) with more than 200 000 visiting NPs and 180 000 going on a bushwalk. This suggests that the management of tracks is crucial.

Some of the CERRA parks and reserves are overcrowded leading to land erosion and negatively affecting local species, while others lack effective marketing and are being underutilised (Mackellar & Derrett 2006). For this reason a number of stakeholders (including those mentioned above as well as State Forestry departments, industry groups, tourism organisations and university research centres) have collaborated under a project called 'The Rainforest Way' to create a sustainable touring route between the CERRA parks and reserves (see orange route in Figure 6) (Lee, Scott & Moore 2002).

The Rainforest Way project was the outcome of the 1994 Northern Rivers Nature Based and Ecotourism Plan (Manides Roberts 1994) which identified the need for a touring route. The project had the following objectives (Lismore Council 2008, p. 5):

1. identify potential markets and match to high quality products that satisfy visitor needs
2. identify appropriate marketing themes that will encourage greater visitation and extended length of stay
3. refine and map an appropriate primary touring route and a series of associated loops and trails that will enhance visitor experiences and provide benefits for regional operators
4. develop and implement a marketing plan that will maximise the potential of the project
5. develop and implement a management committee which will oversee the efficient implementation of the marketing plan and other management initiatives such as sourcing funding
6. ensure ongoing management and marketing is performed by a self-funded management committee
7. evaluate the impacts of the Rainforest Way on visitation, natural resources, tourist businesses and the wider community.

Factors affecting track usage and experiences

The first extensive surveying of visitor experiences in northern NSW was undertaken in 1999/2000 by Griffin and Archer (2005) and commissioned by the Northern Directorate of NSW NPWS and Sustainable Tourism CRC. Research was completed for seven northern NSW NPs, four of which form part of the CERRA estate (Gibraltar, Washpool, Border Ranges & Nightcap). Apart from demographic data and visitation patterns, the research looked at visitor attitudes, preferences and satisfaction with certain attributes of the NPs. Although this was a broad study about visitation to NPs, some of the results relate directly to track experiences.

The most popular activities that respondents participated in are shown in Table 4. Walking is an activity commonly undertaken by visitors to NPs in northern NSW. The popularity of the activity varies from park to park with two of the CERRA parks; Gibraltar and Washpool, being far more attractive to walkers (70% and 58% medium walks respectively).

Table 4 Ten most popular activities in northern NSW national parks

Activity	Respondents (%)
Relaxing/getting away from it all	81
Appreciation of plants and wildlife	69
Sightseeing	59
Taking a short walk	54
Socialising with friends and family	52
Taking a medium walk	48
Visiting a unique, special site	48
Picnicking	41
Photography	38
Appreciation of history/culture	35

Source: (Griffin & Archer 2005)

Asked about the importance of park attributes and facilities to the visitor's enjoyment, the highest rating items were the 'pristine condition of the environment', 'beautiful scenery and views', 'unique natural features' and 'directional signage'. The range of short walks and long walks were ninth and fifteenth in a list of 21 items. The satisfaction with the range of short and long walks matched the level of importance and was above average. Visitor satisfaction with the general condition of walking tracks was also above average. The attributes deemed important by the authors for track users (discussed in Chapter 2) were compared across the four CERRA NPs and varied slightly from park to park (Table 5).

Table 5 Importance of track aspects across four CERRA parks

Attribute	All Parks (rank)	Gibraltar NP (rank)	Washpool NP (rank)	Border Ranges NP (rank)	Nightcap NP (rank)
Pristine condition of environment	1	1	1	1	1
Directional signs in park	4	4	5	4	2
Opportunities to get away from others	8	9	6	8	9
Range of short walks	9	8	11	9	7
Information signs on natural environment	11	10	16	10	11
Range of long walks	15	16	9	13	14

Source: Adapted from Griffin and Archer (2005)

Additionally, the satisfaction of several aspects was compared between the four CERRA parks (Table 6). The results shown in table x indicate that respondents at the four CERRA parks are generally more satisfied.

Table 6 Satisfaction of track aspects across four CERRA parks

Attribute	All Parks (rank)	Gibraltar NP (rank)	Washpool NP (rank)	Border Ranges NP (rank)	Nightcap NP (rank)
Natural environment	2	4	2	2	3
Amount of rubbish and litter	3	5	3	3	2
Condition of walking tracks	7	14	14	14	16
Behaviour of other visitors	9	11	15	11	11
Level of crowding	12	12	11	20	7
Range of short walks	13	8	8	12	9
Range of long walks	14	9	12	15	10
Information signs on environment	18	16	6	13	19
Directional signs in park	19	15	9	17	17

Source: Adapted from Griffin and Archer (2005)

Upon comparing the mean scores for importance and satisfaction with the several factors listed in Tables 5 and 6 above, there were several items that rated poorly (that is, the satisfaction was less than the importance placed on it). These were the condition of the natural environment, level of crowding, and directional signage. CERRA parks were split as to the quality of signage on the natural environment and range of short walks while the range of long walks was deemed positive across all the four parks.

An open-ended question was asked to nominate the most enjoyable aspects of their visit. The most frequently mentioned responses were 'outstanding views and scenery' (32%) and 'the range and quality of walking tracks'. This was the most common response in all CERRA parks with the exception of the Nightcap NP. On the flip side, when asked to nominate aspects that were disappointing, the quality of walking tracks was not in the top ten responses. Aspects that were disappointing which are related to the track experience were the behaviour of other visitors, general lack of information and the amount of rubbish and litter. The main factors found to spoil visitors' experiences were due to the behaviour of other visitors rather than the management of the park itself however the presence of rubbish is important and definitely manageable (Table 7 overleaf).

Finally, visitors were asked to indicate their preference for lower versus higher level facilities in terms of electric/wood fireplaces, sealed/unsealed roads, hot/cold showers, flushing/pit toilets or paved/natural walking tracks. It was found that 'the majority of visitors expressed preferences for lower rather than higher level facilities' (Griffin & Archer 2005, p. 51). The most distinct of these preferences was for natural walking tracks. Park managers need to understand the demand for these types of facilities in order to cater to the market.

Table 7 Ranked mean spoiling ratings

Factor	Mean* rating
Unruly behaviour of other visitors	3.6
Litter/rubbish	3.3
Noisy people/activities	3.1
Dirty toilets	3.1
Close proximity of other campers	2.5
Large numbers of people on walking tracks	2.3
Large numbers of people in picnic areas	2.2
Rough dirt roads	1.5

*1= would not worry me at all, 2= would affect my enjoyment slightly, 3= would affect my enjoyment quite a lot,
4= would ruin my visit to the park.

Source: (Griffin & Archer 2005, p. 38)

Summary

The three case studies presented in this chapter have produced similar results. That is, empirical research by park agencies looking at the visitor experience on a park level exists but in-depth research aimed to assess the track experience is limited. Data that does exist is concerned with the satisfaction with the choice and length of track, the condition of the track, the affect of crowding and visitor behaviour and the general condition of the environment. However, this data does not examine the extent to which these variables will affect future use. There is substantial evidence (from the KNP and CERRA case studies) that visitors prefer the track to be as natural as possible and that short walks in NPs are more popular. However, with the exception of the KNP, research has not explored the preferred type of track (for example looped tracks). These are important factors to examine when assessing the track experience of visitors to NPs.

Chapter 4

IMPLICATIONS FOR NATIONAL PARK MANAGERS

All tracks managers have three management goals; to maintain user safety, protect natural resources, and to provide high-quality user experiences (Moore 1994). Various Commonwealth and state government agencies have considered track usage in the context of park management plans (e.g. Booderee National Park Board of Management & Director of National Parks 2002; NSW National Parks and Wildlife Service 2000). Some of these plans seem to be lacking in that there is a preoccupation with track access issues, to the exclusion of consideration of the tourist experience.

The purpose of this chapter is to consider the implications for NP managers from the current state of track experience research. This chapter will explore two ways that track experience can be optimised through visitor research and interpretation. The chapter will also canvas opportunities for future research.

Strategies for Optimising Track Experiences in National Parks

Visitor research as a management tool

Park management groups are conscious of the importance of marketing a track to a particular user group. For instance the authors of the *Australian Alps Walking Track Strategy* noted that they were seeking to develop a walk that would provide a 'remote natural experience' for visitors (Australian Alps Liaison Committee 2005). In spite of this, only rarely have protected area managers factored desired track experiences of visitors into track management plans in a systematic manner (e.g. Department of Tourism Arts and the Environment 2007). Some track plans do make specific reference to the tourist experience (e.g. Overland Track Steering Committee 2004). The literature review completed for the *Walking Track Management Strategy for the Tasmanian Wilderness World Heritage Area* for instance drew attention to various issues related to crowding, a trip perception amongst wilderness users (Tasmanian Parks and Wildlife Service 1994a). In spite of this, from the authors' analysis of the literature and case studies there appears to be a gap between the development of management plans and the systematic canvassing of visitors as to their desired track experiences. Griffin and Vacaflores (2004) have previously noted that the design of walking tracks in a particular area must be guided, in part, by user preferences.

This report found that there is a general lack of academic research specifically focusing on the experiences of track users. Only 26 papers were identified for the research classification spreadsheet (Table 2). The main points to consider from the spreadsheet are:

- there is a lack of a set theoretical/methodological approach for examining the notion of a track experience. A consistent theoretical approach would make it easier for park agencies to pursue work in this area
- the three main factors found to influence the track experience were congestion, interaction between track user groups and environmental degradation. There is little to no evidence that factors influencing experience will also affect level of usage
- the literature has not comprehensively investigated the relationship between track classifications and visitor experience. Exceptions to this include work that has been achieved on an individual park level (see Chapter 3) and by the Victorian Department of Sustainability and the Environment as part of their recent *Walking Trails Classification System* (see: http://www.dse.vic.gov.au/DSE/nrenrt.nsf/LinkView/D3EB770FE7869AD3CA25722E0000208EE251 BEF72F258AB04A2567BD00271F6B)
- the lack of attention that the literature seems to pay to the affects of visitor demographics on experience. The only issue remotely related to visitor demographic that we find affecting experience is visitor type. Some of the articles canvassed for this project draw attention to the potential for conflict between different users, which may affect experience
- the majority of research on track usage is North American in its focus.

In addition to these findings, the research conducted for NPs in NSW (as identified in Chapter 3) to identify the type of track experiences being sought lacks consistency and depth. There is accordingly an opportunity for future researchers to consider the experiences of track users in relation to the track experiences proposed by management groups. Future research in this area would:

- illustrate to protected area agencies whether their marketing and track design strategies are appropriate for the current user population
- provide a structure for researchers to begin to research the nature of the track experience in Australian NPs and other protected areas.

Interpretation

Interpretation is one means by which the provision of high-quality experiences and tourist opportunities on tracks may be achieved. Interpretation refers to the means of communicating ideas and feelings which help people understand more about themselves and their environment (Interpretation Australia 2004). A body of material has already been produced by the STCRC and other agencies on track interpretation processes in NPs and other protected areas (Archer & Wearing 2002; Armstrong & Weiler 2003; Beckmann 1991; Kohl 2005; Littlefair 2003; Phillip Island Nature Park 1998). Protected area agencies that are looking at ways of facilitating better tourists' track experiences would be advised to tap into this interpretation literature when they are considering appropriate management strategies.

Enos Mills is credited with developing the concept of interpretation, as well as founding the nature guide profession (Kohl 2005). Interpretation in NP/protected areas is commonly seen as a suite of communication options open to managers for liaising with visitors (Munro & Morrison-Saunders 2005). Knudson, Cable and Beck (1995) 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
6. to increase the public understanding and support for an agency's role, its management objectives and its policies.

The authors of this report have previously developed a classification for interpretation techniques which indicate how various interpretation techniques have been applied in Australian NPs (see Wearing, Archer, Moscardo & Schweinsberg 2006).

Various interpretation techniques including signage and tour guides have the potential to influence experience. Signage/bulletin boards are the most prevalent form of interpretation that is canvassed in the track user experiences literature (Bradford & McIntyre 2007; Cole 1998; McCool & Cole 2000). The South Australian Department for Environment and Heritage (2007) have similarly noted that track design decisions have the potential to influence the way a visitor perceives a track or site. Signs and bulletin boards are one aspect of track design. McCool and Cole (2000) note that personal utility with track side bulletin boards meant that their interpretive messages were most relevant to hikers and overnight users, as opposed to horse riders. Tour guides have the potential to limit the negative environmental impacts that may flow from tourists leaving designated tracks in NPs. Tour guides interviewed as part of Armstrong and Weiler's (2003) study of Victorian nature-based tour operators who held a current permit issued by Parks Victoria to conduct tours in protected areas noted that:

> *The most frequently delivered message to participants was about keeping themselves and, on some occasions, their horses to the track. Sometimes the guide would simply ask the visitors to '... try to walk in single file, and don't go off the track ...' Other guides would give a reason for the request 'I would ask that you please do at all times stay on the tracks, these are National Park regulations and it's also a fragile environment so it can be damaged easily ...' and '... it's always important to try and stick to the track ... it protects the environment ...' and '... please don't step on the vegetation, it already gets a bit of a hammering because there's lots of people come here so make sure you stand well away from that ...' (Armstrong & Weiler 2003)*

Limitations and Opportunities for Future Research

The aim of this report has been to draw attention to the various factors associated with track usage and visitor experience in Australian NPs. The research classification spreadsheet and case study material provided in this report are intended to form the basis for the development of a more comprehensive research agenda for understanding track usage and visitor experiences in Australian protected areas.

Two principle limitations have been identified in this report, which the authors feel are reflective of deficiencies in the scope of available literature. Firstly the authors have noted a lack of attention being afforded by academic and protected area agencies to track usage and visitor experience in state forests. State forests exist in each state of Australia, often bordering directly with NP reserve areas. In spite of this the authors have identified no studies that specifically canvas track based tourist experiences in state forests. With this in mind the following recommendation is offered:

> **Recommendation 1:** *NP and state forest management agencies could work to develop a consensus approach for understanding the nature of track usage and associated visitor experiences.*

The second limitation evident in this paper relates to deficiencies in the scope of academic and industry literature. In the case of the academic literature base, 26 papers on track experiences in NPs were identified. Deficiencies that were evident in the canvassed academic literature related to the lack of a set theoretical/methodological approach for understanding track experience. In the case of the industry literature, research deficiencies were often related to a lack of foundation visitor management models. This limited the type of results that were presented particularly for the CERRA case study which reported on the results of only one study undertaken by Griffin and Archer (2005). With these deficiencies in mind a second recommendation is offered:

> **Recommendation 2:** *That protected area agencies work to develop an adaptable research instrument, which can be applied to all NPs in NSW regardless of the type of track experiences that are common in the particular geographical area.*

To fulfil this recommendation the following factors need to be considered by NP managers when developing research tools:
- visitor demographics
- different reasons for track usage
- visitor expectations of track experiences prior to travel
- track difficulty
- environmental degradation.

Table 8 illustrates why these five factors are important to understand in the broader study of visitor experiences. They need to be considered by park managers while planning positive track experiences for visitors to NPs. This knowledge will stem from an evaluative research tool which will aim to understand the five factors presented and plan the track experience around these factors.

Table 8 Variables to consider in the development of a research tool

Factors Affecting Track Usage/Visitor Experience	Issues to be considered
Visitor demographics	There may be a relationship between demographics and track usage/ experience.
Different reasons for track usage	Is the experience different for various users of the track? Will there be a relationship between the reason for visit and satisfaction levels? Can a list of all potential users of tracks in NSW be constructed? Needs to be mindful of the differentiation between track users and the broader national park visitor base when examining issues relating to the tourist experience. This research should consider the idea that multiple experiences exist in park environments. A visitor may have multiple tourist experiences in the course of a trek. Long distance treks may frequently take days or months to complete. Such treks could be defined as a multi-phasic experience (see McIntyre & Roggenbuck 1998). Future research should consider methods for measuring these multi stage experiences.
Visitor expectations of track experiences prior to travel	In the event that park managers understand the expectations of their visitors to tracks, they will able to appropriately plan for their visitors. Therefore, future research needs to develop ways of measuring tourist expectations and ensuring the results of such research are employed by park managers. Future research should also investigate the features that attract visitors to particular tracks. This form of market analysis needs to be linked to the relevant track classification systems employed in each state.
Track difficulty	Protected area stakeholders need to develop a universally applicable Australian classification system for track difficulty. Market analysis needs to consider the experiences had by users of all levels of classified tracks.
Environmental degradation.	It was discovered that the quality of the natural environment affected the visitor experience in several publications. Therefore a research tool needs to examine the extent to which visitors are influenced by various levels of environmental degradation. Future research should also aim at developing standards of appropriate environmental care of tracks.

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STCRC was established in July 2003 under the Commonwealth Government's CRC program and is an extension of the previous Tourism CRC, which operated from 1997 to 2003.

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The Commonwealth CRC program aims to turn research outcomes into successful new products, services and technologies. This enables Australian industries to be more efficient, productive and competitive.

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- the value of graduate researchers to Australia;

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