Wildlife Tourism
challenges, opportunities and managing the future
Sustainable Tourism Cooperative Research Centre

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Sustainable Tourism Cooperative Research Centre (STCRC) is established under the Australian Government’s Cooperative Research Centres Program. STCRC is Australia’s largest dedicated tourism research organisation, with over $187 million invested in tourism research programs, commercialisation and education since 1997. The aim of STCRC research is to underpin the development of a dynamic, internationally competitive and sustainable tourism industry. STCRC is a not-for-profit company owned by its industry, government and university partners.

STCRC falls under the Commonwealth CRC program, which aims to turn Australia’s research and innovations into successful new products, services and technologies, making our industries more efficient, productive and competitive.

The program emphasises the importance of collaboration between business and researchers to maximise the benefits of research through an enhanced process of utilisation, commercialisation and technology transfer.

STCRC’s objectives are to enhance:

• the contribution of long-term scientific and technological research and innovation to Australia’s sustainable economic and social development
• the transfer of research outputs into outcomes of economic, environmental or social benefit to Australia
• the value of graduate researchers to Australia
• collaboration among researchers, between researchers and industry or other users
• efficiency in the use of intellectual and other research outcomes.

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Aim of the Research

The aim of this summary is to provide a ‘snapshot’ of Sustainable Tourism Cooperative Research Centre (STCRC) research that informs the wildlife – tourism relationship and its management. Thirty-five research reports are profiled in this snapshot, based on research by STCRC between 2001 and 2008. To access the full technical reports please refer to www.crctourism.com.au/bookshop. The individual research projects cover a variety of elements concerned with wildlife tourism and have been sectioned into the following five themes:

- Visitors
- Economics
- The Wildlife Experience
- Host Communities
- Wildlife Impacts and Management

The encounter between the visitor and the wildlife comprises the core of a wildlife tourism experience. This experience is a result of the interaction of elements relating to the natural resource base (wildlife and associated habitat), the visitor, the operator and host community, the economy and any management set in place. The consequences for the natural environment and for host communities can be positive, neutral or negative and all these elements depend, in turn, on the wider context in which the experience occurs. There will often be interdependencies between and within these elements. Thus in order to explain the various outcomes of wildlife tourism, and to manage it sustainably, we need to consider all of these elements in an integrated way.

“Wildlife tourism is defined as: tourism undertaken to view and/or encounter wildlife. It can take place in a range of settings, from captive, semi-captive, to in the wild, and it encompasses a variety of interactions from passive observation to feeding and/or touching the species viewed.”

Newsome et al., 2005

Interest Groups

The research has relevance to a broad range of industry and government stakeholders and those seeking a greater understanding of the concepts and fundamentals of wildlife tourism and its management. It is a useful reference document and resource for those working with tourism and wildlife.

The following audiences will find this research especially beneficial:

- tourism operators who are wishing to improve their wildlife based business, or seek new business opportunities
- local or regional host communities considering an expansion of a wildlife tourism resource
- environmental, state and national park government agencies
- tourism industry associations and members of the travel trade
- state and government tourism agencies
- non-government wildlife and conservation organisations, associations and membership based groups
- academic and education institutions and students

Wildlife Tourism Overview

The Wildlife Tourism Research Program

Sustainable Tourism Cooperative Research Centre (STCRC) has completed a major research program to identify and realise opportunities for wildlife tourism in Australia and to facilitate enhancement of its sustainability. After six years of research (1999–2005), the Wildlife Tourism Subprogram has built up an impressive array of publications and a wealth of collective knowledge, which are presented in this snapshot.

The program involved more than 40 researchers and 11 universities, and has generated over 35 research reports, 50 refereed academic publications and the most comprehensive reference book available on the subject internationally.

The Wildlife Tourism Subprogram represents the first attempt to systematically conduct research to inform sustainable development of wildlife tourism in Australia. Such research requires investigation of each of the components involved and of their interactions and thus requires an innovative and interdisciplinary approach bringing together biological, social, and economic perspectives on the visitors, host communities, tourism operators and the wildlife itself.

The first stage involved an assessment of the current status of wildlife tourism in Australia (the wildlife tourism status assessment project), including key issues and research priorities. The second and major research stage focused on detailed field research; in particular, case studies of various sub-sectors and at various scales to derive lessons for the future direction and management of wildlife tourism and for appropriate product development.

“Wildlife tourism is more than travel to enjoy or appreciate wildlife, it also includes contributions to conservation and community projects in developing countries, and environmental educations and awareness through the establishment of codes of conduct for wildlife tourists as well as the various components of the travel industry.”

Kutay, 1993

Wildlife Tourism Australia Inc.

The Sustainable Wildlife Tourism Convention in Hobart, Australia in 2001, hosted jointly by Tourism Tasmania and STCRC, brought together a range of mainly Australian stakeholders to discuss diverse issues relating to sustainable development of wildlife tourism and its integration with conservation and generated recommendations. Planning began to create a national organisation to represent zoos, sanctuaries, wildlife parks and other wildlife operators around Australia to further the recommendations of the conference.

In 2003, the non-profit organisation Wildlife Tourism Australia (WTA) was formed with the mission ‘To promote the sustainable development of a diverse wildlife tourism industry that supports conservation’. Members include wildlife tourism operators, government land management and conservation agencies (state and federal), non-government conservation groups, researchers and members of the general public with an interest in wildlife. Since its inception, it has become firmly established as the key organisation representing the interests of sustainable wildlife tourism in Australia.

WTA’s major achievements to date include developing a website as a substantial information resource, running wildlife tourism cooperative marketing initiatives and providing input into government policy development. WTA is playing a key role in boosting the profile of wildlife tourism and encouraging improvements in product quality and marketing effectiveness. See www.wildlifetourism.org.au

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Visitors

Overview

Understanding the nature of visitors is an important but little researched element of wildlife tourism. While there are many references to the size and growth of this market in the existing literature, very little is known about the actual demand for non-consumptive wildlife tourism and what characterises tourists who desire wildlife encounters during their holidays.

Understanding the level of visitor demand for wildlife tourism experiences is important for two main reasons. Firstly, private sector tourism managers use estimates of demand for particular types or aspects of tourist activities to guide the development of services and facilities. Secondly, managers of the protected areas where wildlife are usually found use estimates of demand to develop plans which may include the development of infrastructure and decisions about permitted activities and levels of use. For both these reasons it is important that estimates of demand be reasonably accurate.

The management of wildlife tourism requires management of both the wildlife and the tourists. The management of tourists requires information on a number of aspects of these tourists. Firstly, it is important to understand levels of demand for different wildlife tourism activities. Judgements about the amount of infrastructure required to manage visitors at various sites, decisions about the number of staff required and awareness of possible pressures on the setting and the wildlife all require accurate measures of demand. Different visitors also have requirements or expectations for different types of management, so it is also necessary to understand levels of demand for particular types of experience. Much of the existing data on wildlife tourism demand is fragmented and relies heavily on data collected for quite specific settings or species. Wildlife tourism managers in both the public and private sector would benefit from more coordinated, systematic measures of demand for particular types of wildlife experience. Such measures should include both attendance and participation rates but also more broadly based surveys so that latent demand is incorporated into management decisions.¹

18.4% of international visitors were influenced in their decision to visit Australia by the opportunity ‘to experience native animals’ and 67.5% of international visitors said that they wanted to see ‘animals’ during their visit.²

Fredline and Faulkner, 2001


Liz Fredline

Objectives of Study
This report considers the role of wildlife tourism in the Australian domestic market through a study based on a survey of Australian residents. It aimed to:

- assess the role and significance of wildlife experiences within the Australian domestic tourism market;
- establish a typology of domestic wildlife tourists through market segmentation and to develop market profiles; and
- examine motivations for and satisfaction levels with wildlife encounters amongst domestic wildlife tourists.

Methodology
For the purposes of sampling, the Australian population was stratified on three variables: region of residence, age and gender. The survey was administered using Computer Assisted Telephone Interviewing (CATI). Where the respondent had taken a trip including an encounter with wildlife, the interview took 25 to 30 minutes to complete, while those where no relevant trip had been undertaken took 10 to 15 minutes. In total, 11,500 telephone numbers were selected, and of these, 1,864 could not be contacted. A very large number of those called refused to participate in the study (8,280) and the 1,356 completed responses therefore represented a response rate of around 14.1%. Of the 1356 people interviewed, 440 (32.4%) had taken a trip in the past 12 months which had brought them into contact with wildlife.

Key Findings
Queensland was the most common destination for these wildlife trips (32.4%) and most people were travelling for a holiday or to visit friends and relatives. The animals most commonly seen were members of the kangaroo family and birds and these were also commonly reported as the most enjoyed. To correct for the unequal number of sightings, a likability factor was calculated which divided the number of most enjoyed reports (where more than one animal was encountered) by the total number of encounters. Animals which rated highly on this factor included camels, echidnas, and dolphins.

The characteristics of the wildlife tourists were compared with those of non-wildlife tourists and only a few demographic differences were found. The majority of encounters with wildlife were in national parks (44.3%) or in other natural settings (12.9%), with smaller proportions of visitors encountering wildlife in captive exhibits such as zoos (17.1%), wildlife parks (12.4%), theme parks (3.3%) and aquariums (2.4%). Wildlife and non-wildlife tourists were asked about their attitudes towards animals and also the environment more broadly. Wildlife tourists had slightly more positive orientations than those who had not had a wildlife encounter.

Finally, respondents were asked about how satisfied they were with their wildlife encounter, and the reported levels of satisfaction were high. There were no differences in the satisfaction scores of people who had had active versus passive encounters or free versus captive encounters.

Recommendations
A reasonable proportion of domestic trips in Australia involve some contact with wildlife but people taking these trips are not substantially different from others in terms of simple demographic and trip characteristic variables.

All respondents had fairly positive attitudes toward animals and these attitudes were not the important drivers of whether or not people engaged in a wildlife-based holiday or not. It is likely that other variables not measured in this study would explain the propensity for domestic tourists to engage in trips that involve wildlife encounters. They may be related to trends affecting domestic tourism more generally. There is increasing evidence of flat growth in domestic tourism, so wildlife tourism operators are likely to be facing increased competition from within their own sector and from other types of attraction. However, this is likely to affect remote operators more substantially than wildlife attractions close to large population bases that can draw on the local market engaging in day trips.

Liz Fredline and Bill Faulkner

Objectives of Study
This report presents the results of a wildlife tourism project aimed at providing information about the role of Australian native wildlife as a tourism product in the international visitor market. The main objectives of the research were:

- to assess the role and significance of wildlife based experiences in Australian tourism product within inbound markets;
- to establish a typology of wildlife tourists and develop market profiles; and
- to examine satisfaction levels with wildlife encounters.

Methodology
Data was collected via a 13 question supplement added to the International Visitor Survey (IVS), yielding a total sample size of 3,880 respondents. The population of interest comprised visitors to Australia, that live overseas, aged 15 years or over, and who stayed in Australia for less than 12 months. The survey was administered through personal interviews and conducted in the departure lounges of international airports as they left Australia, based on a quota for each country of residence group for each airport each month.

Key Findings
The role and significance of the wildlife tourism product

- 18.4% of visitors were influenced to come to Australia to experience native animals.
- 67.5% of tourists wanted to see animals during their visit, and 71.1% actually did see animals during their visit.
- More visitors wanted to see kangaroos (43.2%) and koalas (44%) than other animals, and little mention was given to any others with the next most desired animal encounter being with the wombat (4.4%).
- The animals that tourists actually did most commonly see were the kangaroo (59.6%) and koala (50%), but other animals were also seen with fairly high frequency including the parrot (38.3%), the emu (35.1%), the wombat (30.7%), and the lizard (30.4%).

A profile of wildlife tourists

- Wildlife tourists are likely to stay longer, visit more regions than other tourists and visit regions outside the international gateways.
- Wildlife tourists have lower daily expenditures but higher overall expenditures because of their longer stays.
- Wildlife tourists tend to be from Europe, Japan and Korea, be younger and are more likely to be travelling as couples or with friends.
- They are generally on their first visit to Australia travelling for a holiday rather than for business or to visit friends and relatives.
- Males were more likely to want to see non-unique animals (e.g. crocodile, shark, snake, parrot, penguin, lizard, fish, turtle, seal).
- Visitors on their first trip were more likely to want to see iconic marsupials (kangaroo and koala), while visitors on a return visit were more likely to want to see other types of animals.

Satisfaction levels with wildlife encounters
The success rate for each animal was calculated by matching the animals each visitor wanted to see with those they actually did see during their stay. The following points were observed:

- Most animals had success rates higher than 50%.
- The highest success rates were for the parrot (81.8%), the kangaroo (81.1%) and the koala (74.7%).
- The lowest success rates were for the platypus (44.3%) and the whale (17.1%), however the latter result is no doubt affected by the timing of the survey, which was not within the whale watching season.
- Overall, 81.4% of the sample was either satisfied or very satisfied with their wildlife experiences and 98.4% indicated that they were satisfied or very satisfied with their overall visit to Australia.
Recommendations

The following recommendations were made:

- Wildlife operators should forge appropriate linkages with other types of attractions in an effort to maximise exposure.
- First time visitors tend to be focused on seeing kangaroos and koalas, but repeat visitors often seek encounters with other types of animals. Given the strong relationship between success in seeing animals and satisfaction, it is important that any shift in emphasis from captive to free encounters not result in a substantial decline in success rates.
- It is also important that visitors have realistic expectations about where and when they will be able to see various animals to avoid disappointment.
- Future research needs to examine the benefits people seek in a wildlife encounter and the ways in which they prioritise different aspects of experiences.
- Pictures of kangaroos may be useful to include in ads for Australia when those ads are targeted at market segments with an interest in wildlife tourism. When kangaroos are mentioned in the text of an ad for Australia, there should be no photos of people in the ad.
- When kangaroos are pictured, the impact will be enhanced if the imagery is supported by mentioning kangaroos in the text.
- Negative contexts (e.g. road signs) should not be the basis for presenting kangaroos.
- When used, kangaroo images should include more contextual information (i.e. more detail regarding the image and its setting) in order to more readily capture consumer interest.
Brad Hill, Trevor Arthurson and Laurence Chalip

Objectives of Study
This research examines the uses and effects of kangaroo related imagery and text in tourism advertising. The study focused on the American market, with some extension into the United Kingdom market. The research consisted of three components:

- Study 1 examined how well the kangaroo is recognised by Americans as an Australian icon.
- Study 2 measured the impact of kangaroo references in a print advertisement.
- Study 3 evaluated current print travel brochure advertising that utilises kangaroo references.

Methodology
- Study 1 looked at the recognition of kangaroos using 21 icons in total. The study tested recognition among a random sample of Americans on the East Coast of the United States, resulting in a total of 127 usable surveys, a response rate of 95.7%.
- Study 2 examined the impact of kangaroo imagery, text mentioning kangaroos, and text mentioning wildlife tourism in advertisements for Australia. Mock-ads were constructed and tested on a sample of 285 Americans.
- Study 3 evaluated the presence of kangaroo imagery and text in 41 Australian travel brochures used by the USA and the UK. The study was informed by the literature on effective advertising as well as the findings from Studies 1 and 2.

Key Findings

Study 1
- The kangaroo was correctly recognised as Australian by 98.3% of the sample. The only better recognised icon was the Statue of Liberty, which 100% of the Americans recognised as American. The kangaroo outscored such standard tourism icons as the Eiffel Tower (94.9% correct), the koala (91.0% correct), the Leaning Tower of Pisa (80.8% correct), and the kiwi (6.2% correct).

Study 2
- The mention of kangaroos in ad text led to a higher perception of safety in a trip to Australia and of greater sightseeing opportunities. However, when there was a person in the picture in the ad (whether or not a kangaroo was in the picture), this effect was washed out.
- The mention of kangaroos in ad text led to a perception of greater novelty in a trip to Australia. However, when there was a person in the picture in the ad (whether or not the kangaroo was in the picture), the effect was washed out, but only for those with no interest in wildlife tourism. For those who were interested in wildlife tourism, there was no washout effect.
- A picture of a kangaroo in the ad enhanced the perception of value for a trip to Australia, but only for those who had an interest in wildlife tourism. The pairing of a kangaroo and a person in the picture caused those with no interest in wildlife tourism to perceive less value in a trip to Australia than was perceived if neither was pictured.

Study 3
- Kangaroo imagery is rarely used, and is used less frequently than imagery of other Australian icons, such as the Sydney Opera House, Ayres Rock, and the koala. Existing kangaroo imagery typically lacked any support by mention of kangaroos in the text.
- The most frequent pictorial representation of kangaroos was on road signs, which created a negative context for presentation.

Recommendations
The recommendations from the three studies combined are:
- The kangaroo can be a useful image to use in marketing when there is a need to communicate immediately and quickly about Australia. This might be the case in particularly cluttered environments, such as trade shows or multi-destination brochures.
- When kangaroos are mentioned in the text of an ad for Australia, there should be no photos of people in the ad.
- When kangaroos are pictured, the impact will be enhanced if the imagery is supported by mentioning kangaroos in the text.
- Negative contexts (e.g. road signs) should not be the basis for presenting kangaroos.
- When used, kangaroo images should include more contextual information (i.e. more detail regarding the image and its setting) in order to more readily capture consumer interest.
Wildlife Tourism

CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE

Gianna Moscardo and Rebecca Saltzer

Objectives of Study
The main aim of this report is to present findings from a wildlife tourism visitor database, in order to address the topics of:
• understanding and profiling wildlife tourism markets
• describing the impacts of wildlife tourism on visitors
• exploring visitor responses to aspects of the tour operation and/or site management
• measuring visitor related outcomes of wildlife tourism such as satisfaction and changes in conservation attitudes.

Methodology
The results described in this report are based on questionnaire data collected between October 2000 and December 2002 from 4,915 visitors participating in wildlife tourism experiences in Australia and New Zealand. Fifteen case studies, representing a wide range of settings and types of wildlife interaction opportunities, were completed as part of the study.

Key Findings
The database findings indicate that there exists a high level of interest for wildlife tourism experiences. Overall:
• Only 1% said that they were either not interested in or avoided wildlife while on holidays.
• 51% said that opportunity to view wildlife is included as part of their travel decisions.
• 20% said that the opportunity to view wildlife is one of the most important factors in their travel decisions. These visitors were more likely to be Asian or North American, travelling with an organised tour group, prefer to view wildlife in an untouched natural environment and learnt more about wildlife during their visit than those people who don’t consider wildlife in travel decisions.
• Seeing wildlife in its natural environment, seeing wildlife behaving naturally and seeing rare, unique or unusual wildlife were the three most important features sought in a wildlife tourism experience. Being able to touch/handle wildlife was least important.
• The importance of interpretation was reflected in visitors' suggestions for improvement. Importantly the study also found that a strong positive correlation exists between how much visitors learn about animals and their overall satisfaction.
• The wildlife visitors were expecting or hoping to see differed greatly depending on the type of setting, however, there were preferences for large, cute and furry and non-threatening species. Similarly, when asked of the most memorable animal, visitors provided a mix of very different animals, but again highlighting the importance of 'cute and cuddly' and size.
• Overall satisfaction with the wildlife experiences was high, with the majority of those surveyed giving their experience a rating of 8 or more out of 10 and stating that they would recommend a visit to others.
• Factors contributing to satisfaction with a wildlife experience included how much the visitor felt they learnt about wildlife and visitor ratings of the excitement and naturalness of the encounter. Satisfaction scores were also higher for visitors who place greater importance on seeing wildlife on holidays, are tour participants, are female, desire wildlife encounters in natural environments, desire wildlife encounters with knowledgeable guides or staff present, touched wildlife or saw an animal for the first time in real life.

Recommendations
Findings from the study provided evidence that effective interpretation can enhance overall satisfaction. More information, could, therefore, be developed as part of existing wildlife tourism activities. This finding was also supported by a visitor survey question: “What could be improved about this wildlife experience?” Visitors in all of the case studies made suggestions for the provision of more information and/or to improve the information or guides at the site. Some other common themes that were found included:
• to see more wildlife—number, variety and different aspects of
• to have more time / improve the timing and logistics of tours
• to have more interaction with wildlife
• to improve visitor management—in particular, to have fewer visitors/smaller groups.
Gianna Moscardo, Barbara Woods and Tanya Greenwood

Objectives of Study
The focus of this report is on the role of the visitor in wildlife tourism and aims to:
• identify and describe key features of wildlife tourism situations that influence visitor behaviour, satisfaction and attitudes
• review the current status of knowledge about these key features
• recommend further research to enhance the sustainability of wildlife tourism in Australia
• explore the possibility of making recommendations to improve current wildlife tourism practices.

Methodology
This report reviewed the current state of knowledge about visitor perspectives by using the following methodologies:
• face-to-face, telephone and email conversations with key informants in state tourism marketing organisations, appropriate natural resource agencies, tour operators and relevant tourism associations such as the Queensland Wildlife Parks Association
• a review of reports on wildlife tourism visitor numbers, wildlife tourism markets and wildlife tourist satisfaction
• analyses of data, this included the AGB McNair PTAMS surveys conducted for the USTTA and Tourism Canada
• a review of existing published studies and papers on human animal interaction and wildlife tourism.

Key Findings

• Nature of demand for wildlife tourism—Opportunities to see wildlife are very important to international and domestic tourists, wildlife is either one factor amongst many others in travel decisions, or an added bonus rather than the sole reason for choosing a destination.

• Nature of wildlife tourism markets—Highly specialised wildlife activity participants tend to be a minority group. For the bulk of participants, there is a more general interest in nature and a range of wildlife.

• Factors associated with satisfaction—Visitor satisfaction may be influenced by features of the species such as rarity, size, symbolic characteristics, endangered status, variety of species that are seen or encountered and the comfort, beauty and scenery of the setting. Education and interpretation, and the level and quality of services and facilities also influence visitor satisfaction.

• Role of interpretation—Visitors expect interpretation to be a part of their wildlife experiences and good quality interpretation is a major contributor to satisfaction. There is also some evidence that effective interpretation in association with wildlife interaction or viewing opportunities can result in more positive attitudes towards wildlife conservation.

• Responses to management actions—Visitors can be supportive of restrictions to their activities and access to wildlife, especially if supported by an effective interpretation program. There is a major gap in our understanding of visitor perceptions of wildlife feeding.

• Discussions with key informants identified five key issues or challenges facing wildlife tourism in Australia. These were: (1) whether or not current experiences were satisfying visitor expectations, (2) ongoing tensions between public and private sector managers and operators, (3) handling and feeding wildlife, (4) confusion over demand for wildlife tourism experiences and (5) concerns over the quality and quantity of available interpretation.

Recommendations
A series of recommendations was made:
• It would benefit all stakeholders if various visitor surveys (e.g. International and National Visitor Surveys) could incorporate a standard set of questions which assessed level of interest in wildlife in general and in types of wildlife experiences in particular.
• Careful attention should be paid to promotional images of wildlife tourism experiences to ensure accuracy in terms of numbers of wildlife likely to be seen and types of activities offered. In addition, preparation of visitors before arrival is also recommended in order to reinforce accurate expectations, describe the likely conditions, and explain any rules and guidelines for minimal impact behaviours.
• Interpretation programs should be upgraded to meet international best practice and continued staff training is recommended.
• It is recommended that managers in both the private and public sectors work to develop alternative ways and new technologies to view and interact with wildlife.
Economics
Economics

Overview

Economics has a variety of applications to wildlife tourism. Issues covered in the economics of wildlife tourism include estimates of expenditure by wildlife tourists on incomes and employment, consideration of the economic value of wildlife for satisfying human wants for tourism and other purposes, and the implications of these values for the optimal economic management of wildlife. Economics can also provide a basis for predicting or forecasting the demand for wildlife tourism (useful for planning purposes), and can be used to assess economic aspects of environmental change arising from such tourism.

"Wildlife-related tourism appears to account for some 20 to 40% of international tourism and national economic impacts ranging from US$47 billion to US$155 billion." Filion et al., 1994

The economic value derived from wildlife tourism is an economic use value. Tourism use of wildlife may be consumptive, as in the case of recreational fishing or hunting, or it may be non-consumptive, as in the case of whale watching or in the viewing of wildlife generally. Often tourism use of wildlife is not marketed or priced, as in many national parks or protected areas where entry is free, or it is underpriced. This can result in the false conclusion that the wildlife concerned has little or no economic value and in turn, can result in inappropriate social decisions about wildlife conservation.

Because wildlife provides monetary benefits from tourism and creates employment, governments or states have an incentive to conserve wildlife even though all the benefits cannot be estimated or may not remain in the areas or regions where wildlife is viewed. Monetary benefits from wildlife usually provide an important incentive for government intervention in conserving wildlife because the overall benefits from wildlife tourism are positive (despite some leakages abroad), although all of these benefits may not accrue to local areas or communities where wildlife tourism occurs. In the absence of wildlife for viewing or wildlife tourism, some groups of tourists may bypass the country or spend fewer days in a region or country.

The potential for developing new ventures in wildlife tourism exists, but because of the various economic values of wildlife, commercial developers of land should weigh all options before deciding on the appropriate use of land. It may well be that wildlife tourism can be more profitable than producing agricultural commodities, especially in the long term. It is also important for conservation managers and wildlife tourism operators to consider the non-use values of wildlife which in some species, as was shown, exceed the use values. Furthermore, wildlife tourism can influence the non-use values individuals place on species. All this could increase the economic value of wildlife tourism and ensure positive outcomes for wildlife conservation.

"The economic value of wildlife to international tourism in Australia is estimated in the range AUD$1.8 to AUD$3.5 billion per year." Hundloe and Hamilton, 1997

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WILDLIFE Tourism
CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE

Clem Tisdell and Clevo Wilson

Objectives of Study
The centrepiece of this research is a case study undertaken at the Mon Repos Conservation Park located near the town of Bundaberg, Queensland. Each year from mid-November to end of March, thousands of visitors visit Mon Repos Conservation Park to view sea turtles either nesting on the one kilometre stretch of beach or to see hatchlings emerge from their nests and march to the sea or both. As a result of this activity there are considerable economic benefits to the Bundaberg region during the sea turtle season. The main objectives of this study were to:
- determine the economic, educational and conservation values of sea turtle-based tourism
- determine how much visitors are willing to pay for sea turtle conservation in Australia
- determine the recreational value of sea turtle viewing
- examine the potential and further development of sea turtle-based ecotourism in Australia and elsewhere
- examine the non-consumptive use appeal of sea turtle viewing and demonstrate the potential that exists for nature-based tourism in Australia.

Methodology
In order to determine the above objectives a detailed questionnaire was developed. The survey was conducted from December 1999 to end of March 2000 and forms were distributed by volunteers and rangers of the QPWS attached to Mon Repos. During the 4-month survey period, 1200 questionnaires were distributed, out of which 519 usable responses were received for the analysis in this report.

Key Findings
In addition to determining the economic, educational and conservation values of sea turtle-based ecotourism, the study provided background material on non-consumptive recreational values of wildlife resources with comparisons, sea turtles as an asset for tourism, the Australian status of turtles, threats to their populations globally and general aspects of the problems associated with the sustainability of non-consumptive wildlife tourism, especially sea turtle-based tourism. The key findings were:

Economic values
- Sea turtle-based ecotourism at Mon Repos provided significant economic benefits to the Bundaberg region. If not for the presence of sea turtles at Mon Repos, the loss of income to the region (within a 60 km radius) is close to A$0.8 million dollars a year. The income generated is significant considering the short sea turtle season and the scarcity of the wildlife that is being viewed. Sea turtle viewing at Mon Repos is, therefore, one of the most important economic activities in the region.

Educational values
- Of the surveyed respondents, 99% thought that the sea turtle viewing was informative and educational. Apart from educating the visitors on the threats facing sea turtles, respondents said that their experience at Mon Repos would influence them to be more careful in the disposing of plastics, fishing gear, switching off lights near beaches, while overseas refraining from buying/consuming tortoiseshell products, eggs, meat, soups, and using beaches used by nesting sea turtles.

Conservation values
- The majority of respondents (98%) thought that more action should be taken to minimise threats to sea turtles and that the desire to protect sea turtles increased after visiting Mon Repos. It was also found that after the experience at Mon Repos, visitors were more likely to report sightings of sea turtles, injured, poaching or mistreatment of sea turtles.
- The study also revealed that a considerable percentage of responding visitors said that their visit to Mon Repos would influence them to contribute more money for sea turtle conservation than before. Visitors to Mon Repos involved in sea turtle viewing would be prepared to pay at least $250,000 per year to protect sea turtles in Australia. This can also be expected to translate into political support for state programs for the conservation of marine turtles.
Recreational values

- The study also showed that the recreational value to visitors from sea turtle viewing is high. The surveyed visitors’ willingness to pay ex post to view sea turtles was found to be greater than the existing entrance fee charged to view wild sea turtles. The high level of recreational surplus shows the level of positive satisfaction obtained by those viewing sea turtles at Mon Repos. This is further reflected by the fact that the majority of the respondents (85%) wanted to return to Mon Repos.

Recommendations

- The economic value of sea turtle-based ecotourism provides a strong argument for intergovernmental efforts to curb the large scale harvesting of eggs, meat and tortoiseshell trade in neighbouring countries.
- The economic benefits of sea turtle viewing may be used to help justify the mandatory use of sea turtle excluder-devices in prawn trawls, reduced boat speeds, imposition of fines on the unsafe disposal of fishing gear and plastic, and support the creation of safe sea turtle zones (especially during the nesting season) and sanctuaries.
- Sea turtle ecotourism may have economic potential for expansion and development in other parts of Australia where sea turtles are found, especially in the Northern Territory and Western Australia. Sea turtle-based ecotourism can be complemented with Aboriginal and Torres Strait Islander cultural attractions in some areas.
WILDLIFE Tourism
CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE

Clem Tisdell and Clevo Wilson

Objectives of Study
Three very different case studies have been used to illustrate the economic value and economic impact of tourism utilising non-captive wildlife in natural environments. Case Study 1 involving Lamington National Park, focused on the importance of birds as a tourist attraction; the Antarctic study (Case Study 2) concentrated on mammals and birds, for example penguins, as a tourist attraction, and insects were the centre of attention in Case Study 3 of tourism utilising the glow worm colony at the Natural Bridge site. The main objectives were:

- to outline and assess the role that economics can play in the valuation and management of wildlife-based tourism;
- to undertake three case studies to highlight the value of economics and its limits in assessing wildlife tourism in each case;
- given the importance of nature conservation for sustainable tourism, including for the sustainability of its economic value, take into account relevant environmental issues involved in wildlife tourism; and
- to make recommendations on the basis of these studies that will help managers of wildlife tourism to sustain and/or increase its commercial or economic value.

Methodology

- Case Study 1—Visitors to the O’Reilly’s/Green Mountains site were surveyed in the period October 2001 to March 2002.
- Case Study 2—The ship ‘Akademik Loffe’ was the focus of our surveys of Antarctic tourists. Passengers on this ship were on Peregrine’s Antarctic Explorer trip involving a return journey of 10 nights from Argentina to the Antarctic Peninsula. The survey was administered on two voyages of this ship in January 2003.
- Case Study 3—In this study, only independent travellers who were visiting Natural Bridge for the purpose of watching glow worms were surveyed during the period of January 2003 to February 2004.

Key Findings

Case Study 1—Lamington National Park Birds
- After the rainforest, visitors rated the presence of birds as the most important attraction.
- In the absence of birds at this site, it was estimated that visits would fall by more than 40%. Given an estimated primary expenditure of AUS$15 million dollars annually, the absence of birds would reduce this expenditure by almost AUS$7 million.
- It is estimated that the primary tourist expenditure generated annually by Lamington National Park is at least AUS$35 million annually. Virtually all of that can be attributed to the presence of wildlife (in some form or other in the park).
- Different groups of visitors to the O’Reilly’s/Green Mountains site value different attributes of birds differently. There is social conflict between those who favour diversity of birds, the presence of rare birds, bird sounds and so on, and those who favour brightly coloured birds and physical or close contact with birds. The latter visitors often feed birds at this site.
- Several tourists mentioned environmental problems at this site such as congestion and inadequate amenities. However, the majority of Australians were against the introduction of an entry fee which might be used to limit visitor numbers. Overseas visitors were much less opposed to this. Nevertheless, Australians were more willing to accept such a fee if they could be sure it would be used to improve facilities and conservation at the site or in this park.

Case Study 2—Antarctic wildlife
- Most respondents rated the presence of Antarctic wildlife as a crucial factor in their decision to visit Antarctica, and following their visit, as an important influence on their enjoyment from their journey. Following their visit to Antarctica, 96% said that seeing Antarctic wildlife during their visit was important or very important to them.
- In a rating of various attributes or characteristics of Antarctica that visitors might value, its landscapes and seascapes were rated most highly by visiting tourists closely followed by the presence of Antarctic wildlife.
- In the absence of Antarctic wildlife, 30% of respondents said they would not visit Antarctica even if the cost was reduced. Primary expenditure on Antarctic tourism involving landings in 2002–03 is estimated to be at least AUS$200 million. Hence, in the absence of Antarctic wildlife, expenditure on Antarctic tourism in that year would have been reduced by at least AUS$60 million.
The Antarctic tourists surveyed raised serious environmental concerns about Antarctica, including concerns about the possible environmental impact of an increasing number of tourist visits to Antarctica. Opinion was divided about whether the number of tourists visiting Antarctica should be restricted. However, the majority favoured no increase in the number of visits.

Present management of Antarctica’s environment seems to be inadequate but the voluntary code of conduct adopted by the International Association of Antarctic Tour Operators (IAATO) is a positive contribution to sustaining the Antarctic’s natural environment.

Case Study 3—Glow worms at Natural Bridge

The presence of glow worms at Natural Bridge in Springbrook National Park generates regional economic impacts and economic benefits that would not be obtained in their absence.

On average, around 80% of visitors to Natural Bridge coming to view glow worms come on conducted tours, and most of these are foreigners. Of the 20% of independent visitors, the majority are Australians. They constituted 84% of the visitors in the sample used for this case study which restricted itself to independent visitors.

The economic impact of the independent visitors is relatively small. Primary expenditure by independent visitors is estimated to be just under AUS$100,000 annually. Only a very small proportion of that expenditure is made in the local community.

Respondents on average reported a significant net economic benefit from their visit to see glow worms at Natural Bridge as measured by the willingness to incur extra costs to visit the site. Independent visitors’ economic surplus in aggregate is estimated to be at the very least AUS$46,000 per year but it is probably in excess of AUS$100,000 annually. This is an economic benefit even though independent visitors pay no entry fee.

There was some demand amongst independent visitors for a booklet about glow worms and for an interpretative centre. A substantial proportion of respondents indicated that they would purchase such a booklet at a moderate price and would be willing to pay to visit an interpretative centre. The economic viability of an interpretation centre at Natural Bridge would seem to depend on the willingness of visitors from bus tours to visit it and pay.

General observations

On average those in the Antarctic sample have the highest income, the highest levels of education and are the oldest.

It might be noted that overseas visitors are very well represented in the Lamington National park sample. Birds at the O’Reilly’s/Green Mountains site help to earn Australia significant amounts of foreign exchange. The same can be said of glow worms at Natural Bridge, when visits from bus tours are taken into account.

The two Australian-based case studies suggest that economic value and potential of Australian birds and insects as tourist attractions have been under rated.

In all three cases, significant environmental concerns, arising in part from rising visitor numbers, were mentioned by respondents.

Recommendations

There should be greater recognition of the economic importance of wildlife as a tourist attraction in Australia, particularly the actual and potential economic importance of Australian birds and insects as tourist attractions.

Although most Australians oppose fees for entry to national parks (where they may view or interact with wildlife), they are less likely to object to these if they can be assured that revenue collected will be used for improving amenities and conservation where the fees are paid. Political acceptability of fees required them to be linked to packages of this nature.

There is much less objection to paying for optional extra activities or facilities such as interpretation centres, or other optional items (such as booklets) in national parks or in state protected areas. Such extra facilities could provide extra income for a body such as QPWS, add to visitors’ wildlife experiences, and help to increase their support for nature conservation. These commercial aspects are worthy of greater consideration in relation to wildlife tourism in Queensland.

A considerable number of respondents in all the case studies raised environmental concerns about all the wildlife sites visited. These problems included adverse impacts arising from growing visitor numbers. No fully effective policy instruments appear to be in place to deal with many of these problems. The tourism industry needs to consider the options involved in dealing with these congestion/crowding problems carefully because they have the capacity to reduce the economic value of the wildlife that attracts tourists.

Specific recommendations and suggestions accompany the particular case studies. Many of these are area or site specific.
Derrin Davis, Clem Tisdell and Mark Hardy

Objectives of Study
The focus of this report is on the contribution that economics can make to the sustainable development and management of the wildlife tourism industry. A key rationale for the preparation of this paper is to begin identifying ways in which Australia can better take advantage of its unique wildlife resources for tourism without adversely impacting or destroying those resources.

Methodology
A number of important economic issues of relevance to wildlife tourism and its sustainable management are described in this study and, where appropriate, supported by examples from wildlife tourism activities. The study was predominantly a desktop review and collation of existing literature, research and knowledge.

Key Findings
• There are presently very few cases, anywhere in the world, where economic instruments (EIs) are employed to facilitate sustainable management of wildlife or other tourism resources. Even where user pays approaches, such as entry fees, are employed they are generally not used to ration visitor numbers or to protect the wildlife tourism resources being accessed.
• The potential role of economic instruments is poorly understood by management agencies and their employees and that economic instruments used in isolation will not guarantee that wildlife tourism will be sustainable.
• Commercial operators, those who seek to profit from access to wildlife tourism resources, typically oppose any moves to impose charges of any kind on their operations. It is, therefore, important to link such charges to the associated benefits to operators, such as improved property rights and the transferability of rights through sale—giving them an asset value—that result from the implementation of EIs in an appropriate manner.
• The role of property rights in management and the issue of who appropriates the economic rent from public assets will, and should, receive much greater emphasis in this regard. Presently, in most wildlife tourism situations, the economic rent is mostly appropriated by private, commercial operators. Yet the question must be asked whether this is appropriate, and whether the actual resource owners—the community—ought to benefit from the exploitation of those resources.
• Commercial operators have appropriated virtually all the economic rent in the Cairns and Whitsunday sections of the GBRMP. Given that there are 672 permitted activities in these areas, if the permits had been auctioned and sold for an average of $50,000, then a return of $33.6 million would have been realised by the Authority, and could have been used in management of the Reef.
• Fortunately there is a move to use more transparent, market-based structures for the allocation of user-rights to wildlife. Glow worm tourism in Springbrook National Park provides one early example.
• Commercial operators, whether in industries such as fishing or tourism, tend to resist moves to the use of economic instruments (as evidenced in the GBRMP). Yet where such instruments have been employed, there is little evidence that they have impacted negatively on the viability of commercial activities.
• Tenure is one important issue, with the length of tenure being particularly important. Commercial operators need some certainty to ensure appropriate investment in their industry, to give the attraction an asset value, thereby providing an incentive to take care of it, and to allow them the opportunity to trade the use rights if they so desire.

Recommendations
A number of recommendations for better management of wildlife tourism, based on economic concepts, are provided in this paper:
• There should be increased reliance on the use of economic instruments in the management of wildlife tourism.
• Commercial access to wildlife tourism resources (public ownership), should be provided under a transparent, competitive system that provides a return of economic rent to the community. The auctioning of user rights is preferred to meet this requirement.
• Access rights should be accompanied by improved property rights, giving greater rights and responsibilities to commercial operators.
• Accompanying competitive bidding and better specified property rights, such rights should, in most cases, be fully transferable by sale between operators.
The Wildlife Experience
The Wildlife Experience

Overview
Tourism experiences involving wildlife vary greatly in the emphasis or intensity of encounters. In some cases the wildlife forms the basis and entirety of the tour package, as in dedicated birdwatching or whale-watching trips. In some, while wildlife may provide a focus and incentive, there are other attributes of significance within the trip, such as cultural experiences.

Although distinction is often made between free-ranging and captive animals there is in fact a continuous spectrum of wildlife-watching experiences.

Variations among different forms of wildlife watching may relate to one or more of the following: primary objective, level of interpretation provided by the tourism operator, type of transport or platform, seasonal or diurnal variations, concentration or dispersion of the wildlife, managerial and social settings, degree of wilderness, type of environment and price variations. The variety of wildlife experiences include:

- unguided encounters with wildlife in natural areas (e.g. national parks) with no direct involvement of commercial tourism operators
- specialised wildlife tours (e.g. bird-watching tours, safari tours, whalewatching tours)
- managed locational attractions featuring a natural aggregation of wildlife (e.g. penguin breeding colonies, fish aggregation areas, migratory pathways for birds and mammals, glow-worms in caves)
- nature-based tours that include wildlife (e.g. national park tour with game drive, regional protected area tour, day trip to specific habitat areas (e.g. rainforest) with wildlife component)
- research, conservation or education tours involving wildlife, offered by organisations whose primary role is not tourism (e.g. university groups, Earthwatch, conservation NGOs, some government and NGO alliances)
- sightseeing tours that include some element of incidental wildlife-watching
- accommodation or other tourism facilities that feature surrounding wildlife (e.g. resorts, farm-stays).

The enthusiasm of wildlife tourists for their target species creates a different kind of challenge. Here our urges to get too close discomfort the very creatures we desire. Whale sharks in Ningaloo marine park in Australia, hunting cheetah in Kenya, elephants in South Africa and numerous rare birds everywhere have been subject to disturbance from wildlife watchers.

In many instances the desire for greater proximity is driven by the thirst for a close up photograph and is often enabled by professional guides in need of better tips. In this context sustainable tourism needs better training and salaries for guides, better performance management for parks staff and better ethics and guidelines for tourists. These are all important elements of sustainable tourism.1

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Objectives of Study
This report examines opportunities and potential for ‘kangaroo tourism’ where no organised tourism may exist. Opportunities pertain to both domestic and overseas tourists but potential is assessed only from the perspective of international tourism. The aims of this project are two-fold:
• the first is to identify various sites in Australia where tourists can have direct experiences of macropods in a natural habitat, and to assess the likely quality of such an experience
• the second is to review international tourism activity at a set of high quality sites identified from the first part of the study.

Methodology
This project assessed the opportunities for tourism based on kangaroos by:
• surveying wildlife experts’ opinions on the best places to view species and scoring the quality of the experience with each species
• determining macropod species richness in the coverage of 1:250,000 map sheets for Australia
• scoring the potential quality of a tourism experience with each species based on morphology, ecology and behaviour
• determining centres of high abundance in the management zones for red and grey kangaroos in South Australia, New South Wales and Queensland
• developing a list of 16 high quality sites around Brisbane, Melbourne and Sydney and the outback. These were scored for the feasibility of kangaroo-based tourism using tourist visits, nights and demographics, and the site’s industrialisation, geography and attractions.

Key Findings
• Wildlife professionals furnished 113 assessments of sites that they judged provide a high-quality experience with macropods. The sites covered all states and territories but most were in Queensland and New South Wales. The responses favoured large kangaroos and wallabies that are easily seen, are abundant and habituate to human presence if not hunted.
• Indices of the potential quality of a wildlife tourism experience with each species of macropod were calculated from relevant aspects of morphology, ecology and behaviour. These scores supported that larger, partially day-active, gregarious species in open habitats would guarantee a more rewarding experience than those solitary nocturnal cryptic species in often impenetrable habitat.
• Centres of high macropod richness in the forests of northern New South Wales, tropical Queensland, the wet-dry tropics of Northern Territory and Western Australia and the forests of south-western Western Australia offer great potential for kangaroo-based tourism if examination of the diversity of forms is the goal. If high abundance and the large well-known kangaroos were the focus of attention then a number of outback areas would fulfil this goal, especially in the pastoral zones of Queensland, New South Wales and South Australia. Some of the most abundant populations of large kangaroos reside off protected areas and so some pastoral properties could exploit this asset, as high abundance is an important attraction in wildlife tourism.
• Current high-quality sites for macropod viewing do not generally serve tourism markets well. They are distant from centres of high visitation or off preferred routes of travel. They may also lack other attractions that would encourage tourism activity. Euroka Clearing in the Blue Mountains National Park rates highly but is quite small and may already be over its tourist carrying capacity; Sturt National Park in New South Wales and Idalia National Park in Queensland are distant from the main and preferred centres of tourism activity.

Implications to industry
• The report identifies significant opportunities for the development of kangaroo-based tourism within the national parks and native forests and on private lands, with a focus on the eastern states that garner most international visitors.
• In most instances, kangaroos will not be the sole attraction but a significant part of a set of key taxa, as found on Kangaroo Island in South Australia. They may be an essential indicator in the landscape, such as the outback, providing a sense of the ‘real’ Australia, or may be an attraction for their diversity, unusual habits or even rarity to a very small market of touring ‘mammalogists’.
• The principal markets for such product will be free and independent travellers (FIT) or the specialist visitor (e.g. backpacker, nature tourism). In contrast, self-drive international (and domestic) travellers are more likely to visit regional tourism nodes where the viewing of wild kangaroos can be offered as an attraction and an essential element of the experience.
Implications for community
• Kangaroo populations are typically not encouraged due to perceived conflict between farming enterprises and this native wildlife. Kangaroos, in particular, are seen as unwelcome road hazards and competitors to stock, not as assets except to the few who make a living killing them and selling their meat and/or hide. Both town and country need to re-think their relationship with wildlife, especially the more prolific and obvious elements such as the large kangaroos and some wallabies.
• Communities might one day emblazon their portals with Australia’s best place to see ‘Big Red’ or whatever species and thereby profit from the economic activity engendered by wildlife tourism.

Implications for management agencies
• National Parks and Wildlife agencies typically have excellent interpretative signs and poster boards about macropods at visitor centres, campgrounds and/or along trails in landscapes where they are a major faunal element. However, FIT and specialist visitors are likely to increasingly use the Internet and web sites in planning holidays. New South Wales National Parks and Wildlife Service has made an exceptional effort to create an atlas of the state’s fauna which allows ready access to fauna lists.
• The paper information on wildlife in parks and reserves is good and specifically directs the reader to areas where kangaroos (but not other macropods) are best seen. Tasmanian Parks and Wildlife offers a much superior source of electronic information with detailed maps and descriptions of parks and reserves.
• CALM in Western Australia and Parks Victoria have comprehensive information on parks and their flora and fauna and good direction to where to see many macropod species, especially the more unusual ones.
• The wildlife agencies should each develop a plan for the promotion and management of wildlife tourism, something that currently seems to be lacking. However, Tasmania, Victoria and Western Australia seem to be making effective progress in informing domestic and international visitors about opportunities on their protected areas’ estates.
• Wildlife agencies manage commercial harvests and non-commercial culling of kangaroos. There is confusion in management on protected areas where large kangaroos abound since the same authorities manage programs for their suppression on pastoral lands.
• The tendency is to fear any rise in the populations of kangaroos as a potentially degrading influence in the landscape. Yet the abundance figures show that most of these protected areas in the outback are not in fact foci of dense and ‘uncontrolled’ populations.
• Wildlife authorities and other land management agencies need to recognise that ‘big mobs of roos’, and all the diversity of their kind, are important assets in the natural estate. These species, large, obvious and centre stage provide a wonderful focus for wildlife tourism and the appreciation of Australia’s endemic natural heritage.

Communication of findings to stakeholders
• Tourists and tourism operators could be better informed about where to see macropods of various kinds in the wild in a guaranteed high quality viewing experience. In this way wildlife tourism based on kangaroos will be directed towards a rewarding experience, and stimulated as new challenges are revealed to a hitherto ignorant audience.
• Distribution of this report to wildlife management agencies and the tourism industry will go some way to achieving this goal. An interactive mapping program on CD-ROM would facilitate the interpretation of the information. This should be translated to a web site to reach a wider audience. Ultimately a guide to locating kangaroos in the bush should be published with input from state and commonwealth wildlife agencies and species experts.

Recommendations
• The process of site visits and site assessment, and the analysis of the feasibility of kangaroo tourism need to be ongoing and more expansive geographically. Working models of the products and procedures to sustain a wildlife tourism enterprise based on kangaroos need to be developed not only in the outback but also within easy reach of major tourism centres along the coastline.
• We are well informed about the behaviour and habitat requirements of many species, however, we are less informed about the interaction between visitors and kangaroos in the wild, and probable extinctions of rock-wallaby populations suggest caution and research about the appropriate management of this interface.
• This report only considered potential for kangaroo tourism with international tourists and so clearly we need to investigate the same issue with the much larger domestic market. Here attitudes to kangaroos may be markedly different, especially amongst rural communities. Landholder attitudes and perspectives need to be canvassed to progress off-reserve tourism. Good neighbour relations are also necessary to support on-reserve activities, especially in regard to mobile species like kangaroos.
• Finally, we need to examine the context of opportunities for tourism with kangaroos more broadly. For example, a number of golf courses, caravan parks and even city parks have free-ranging kangaroos foraging on their fairways and lawns.
Darryl Jones and Ralf Buckley

Objectives of Study
The general objective of this review is to provide information and insights about the birdwatching industry in Australia that are relevant and appropriate to the industry itself. Three main aspects will be addressed:

- What are the defining features of the industry in Australia in terms of the activities, the visitors and the wildlife?
- What are the main obstacles to growth and sustainability of birdwatching tourism in Australia?
- How might these constraints be addressed? What might the future hold for the industry?

Methodology
The objective is primarily one of description and the identification of key aspects associated with the birdwatching industry. The information is based on face-to-face interviews and email questionnaires with birdwatching tour operators and their clients, as well as independent birdwatchers from throughout Australia. In addition, extended email exchanges were conducted with numerous international operators and clients. A total of 8 detailed interviews were conducted and 53 questionnaire replies were obtained.

Key Findings

- Birdwatching tourists tend to be well educated, relatively affluent, highly motivated and well prepared. They tend to be either single or in small groups travelling almost independently; or are limited by time or local knowledge and therefore more likely to join a tour.
- We discerned four categories: General birdwatchers (mainly casual); Specialist birdwatchers with restricted budgets; Specialist birdwatchers willing to pay to see more birds; and Specialist birdwatchers requiring packaged birding.
- Activities associated with birdwatching tourism consist of the following: (a) travel, (b) detection, (c) identification and (d) observation.
- About 8% of the world’s bird species occur in Australia, a relatively low proportion compared to other continents and locations; however, the Australia avifauna has a notably high level of endemism.
- In Australia, most inbound birdwatchers are attracted to a relatively small number of favoured locations. The most important of these major locations are: Far North Queensland, Kakadu, Broome, Tasmania and Lord Howe Island. However, Far North Queensland is by far Australia’s premier birdwatching tourist destination.
- The major constraints to industry growth are: access to many locations and a lack of accommodation; relatively large travelling distances; climatic discomforts of heat and humidity; and the paucity of specialised guides and tours for large areas of the country.
- Opportunities for the future of the industry are: increased use of promotional material and cooperative ventures; encouraging conservation initiatives involving scientific and conservation projects; and expanding the number of birdwatching sites in Australia.

Recommendations

- Development of a code of conduct—many operators are aware that their operations are carefully scrutinised by clients with regard to ‘eco-friendliness’, sustainable practices and ethical procedures. An industry code of conduct would be extremely valuable, especially if developed through the industry participants themselves.
- Establish links for the exchange of information and views among operators and guides—STCRC is committed to establishing and maintaining real links and relationships with tourism operators. Reports such as this have been designed and written specifically for the industry; facilitating the exchange of views and ideas between researchers and operators is crucial.
- Discuss bureaucratic constraints with relevant governments—a major obstacle is the bureaucracy and costs associated with obtaining permits. It is possible that government is unaware of the extent to which these requirements are constraining the industry.
- The economics of birdwatching—numerous studies from North America have confirmed the enormous economic value of birdwatching. A study of the economic importance of birdwatching in Australia would be of great value.
- Assessment of the positive and negative effects of birdwatching—studies are needed in Australia to assess the possible effects of birdwatching on the birds and environments in which they occur.
- Appraisal of constraints to development of birdwatching in remote areas—many operators and visitors have indicated that there are large numbers of potential birdwatching locations in more remote areas of Australia. An assessment of the limitations and constraints to the development of these sites would be valuable.
Andrew Tribe

Objectives of Study
This report provides information and insights into captive wildlife tourism in Australia that are of relevance to the industry. It will assess the current status of the industry, identify obstacles to its development and discuss opportunities for its sustainable growth into the future.

Methodology
The information used in this report was gathered in two ways:
- a review of the relevant literature, both published, and where possible, unpublished
- face-to-face telephone and email interviews with staff from a range of zoos in all states and territories of Australia, and with representatives of the three main zoo organisations: Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA), Queensland Wildlife Parks Association (QWPA) and New South Wales Fauna and Marine Parks Association.

Key Findings
- There are more than 200 captive wildlife facilities in Australia, with a total annual visitation greater than 8 million people. More than one-third of these are visitors from overseas, which means that zoos make a substantial economic contribution both through the foreign exchange earned and the employment opportunities created.
- While zoos are still places of recreation and enjoyment, changes in public expectations and scientific views have added education, conservation and research to their roles. This involves consideration of two important factors: the genetic management of the species in their collections, and the animal welfare concerns of the visitors.
- The Australian zoo industry has an annual turnover of some $143 million, and employs almost 2,000 people.
- Zoo’s contribution to conservation comes through educational programs and services and captive breeding, management and display of the wildlife. However, there has been little assessment of the real value and effectiveness of these activities.
- A major obstacle has been striking an appropriate balance between commercial success and the development of professional conservation credibility. However, the opportunity for zoos lie in them transforming themselves from traditional static animal displays to interactive entertaining conservation centres. It is likely that the future development of zoos will require a radical shift in the way zoo managers, staff and visitors see these institutions and will seek to entertain, involve and educate visitors through a combination of:
  - interactive and interpretive displays and presentations
  - themed displays, promoting particular aspects of wildlife and conservation
  - integration and development of other zoo facilities, such as the restaurant and souvenir shop
  - encouraging community groups, activities and ecotourism, to further bridge the gap between captive and free-range wildlife
  - greater interaction with ex situ conservation activities and ecotourism.

Recommendations
The recommendations include the need for an accurate and complete assessment of the contribution of Australian zoos to conservation, particularly in the areas of education and captive breeding. This should include research which will evaluate the effectiveness of:
- the various interpretive media employed by zoos in achieving their wildlife conservation aims
- the role of zoos in the captive management, breeding and reintroduction of wildlife, particularly endangered species
- a more complete evaluation of the economic impacts of zoos
- an identification of those factors that most affect visitor satisfaction and enjoyment.

Such information will benefit not only the zoos themselves but also government and private conservation agencies across Australia. In particular it will:
- indicate how and where zoos most efficiently and effectively contribute
- guide zoo policy and management towards these areas
- influence government policies, perceptions and interactions with zoos
- promote the development of zoos as conservation centres and hence contribute to their sustainability into the future
- improve the public perception of zoos and community understanding of the value of their work in wildlife conservation.
Karen Higginbottom, Ronda Green, Neil Leiper, Gianna Moscardo, Andrew Tribe and Ralf Buckley

Objectives of Study
This report provides an evaluation of existing organised opportunities for viewing free-ranging kangaroos in Australia and provides recommendations for best practice. ‘Kangaroo’ is used as shorthand for any of the 60 or so species of the superfamily Macropodoidea. The aims of this study were to:
• describe and classify the current scope of kangaroo-related tourism in Australia
• with respect to business management, visitors, interpretation, kangaroo management and environmental management:
  • describe distinctive features of kangaroo-related tourism
  • describe elements of current best practice
  • identify weaknesses
  • make recommendations regarding practices to enhance sustainability of kangaroo-related tourism
• describe and evaluate facilities and tools available to support kangaroo-related tourism, and make recommendations for their appropriate development.

Methodology
• Existing Australian kangaroo-related tourism enterprises were described, based on a database of enterprises collated from promotional materials, specialist magazines, host farm guides and word-of-mouth.
• A sample of 20 enterprises was selected as potentially providing best practice models of kangaroo-related tourism. Phone interviews, visitor surveys, and site visits to 10 of these were used to collect information; these enterprises were evaluated against best practice principles. The data on which this study is based were collected in late 1999.

Key Findings
• There are at least 154 enterprises of widely differing types that provide organised opportunities for visitors to view free-ranging kangaroos, this represents 40% of operations offering encounters with free-ranging wildlife.
• About half of all tourism activities featuring kangaroos are tours in which the wildlife are part of a broader nature-based experience. The remainder comprise predominantly: zoos and wildlife parks, accommodation (other than farms) featuring wild kangaroos, wildlife tours (mostly involving a variety of wildlife, not just kangaroos) and farm stays.
• The overall level of reported satisfaction with the kangaroo viewing component of our case studies was high. However, visitor satisfaction with the numbers of kangaroos and other wildlife seen and proximity to wildlife was only moderate.
• Visitor satisfaction with the kangaroo viewing component of the tourism experience was positively related to their overall satisfaction with their experience.
• Some tourism enterprises provide good models of business management and management of kangaroo encounters, but no one case could be considered as following best practice in all key respects.
• Even in kangaroo-related tourism enterprises selected as most likely to exemplify best practice, common weaknesses were identified with respect to business planning (mainly by small operators), market research, relationships with protected area authorities, quality of interpretation, techniques used to find and observe kangaroos, and environmental management practices.
• The most common reaction of kangaroos to visitors in the surveyed cases was to flee. However, a skilled guide can anticipate when this is likely to happen and modify the visitors’ behaviour to avoid significant disturbance to the kangaroos.
• Handfeeding of kangaroos occurs fairly widely, even in protected areas, and is a controversial issue.
• Some kangaroo-related tourism operators contribute to conservation goals, and this occurs in a wide range of ways.
Recommendations

The following are best practice guidelines recommended for kangaroo-related tourism enterprises on the basis of this study:

Best practice guidelines for kangaroo-related tourism

Business management

- Use a documented business plan as an integral part of management system; this need not be a complex or expensive process.
- Conduct ongoing market research and integrate that into planning; this can be done in relatively simple and inexpensive ways.
- Undertake effective risk management practices.
- Develop effective teamwork within your organisation to cover the range of skills required for high quality kangaroo-related tourism.
- Build strong relationships with other groups with an interest in nature-based tourism, such as protected area staff and regional or local tourism associations.
- Work to build positive relationships with local competitors.

Kangaroo interpretation

- Develop an integrated interpretive program following established best practice principles for interpretation.
- Integrate your interpretation with your marketing.
- Interpretation should address a range of issues on kangaroo natural history and management, and minimal impact guidelines.

Planning and managing kangaroo encounters

- Provide as natural an experience for the visitors as possible.
- In general, avoid handfeeding or handling of kangaroos living in natural areas.
- Where handfeeding of kangaroos occurs, ensure that the food is tailored to the animals’ nutritional needs that it provides only a small proportion of the animals’ diet so that dependency does not occur, and that it is not sufficient to lead to aggression towards humans or other kangaroos.
- Maximise your visitors’ satisfaction with kangaroo encounters by developing better techniques for finding and getting close to kangaroos, and using interpretation to make visitor expectations more realistic.
- Do research on your local kangaroo species and populations by observing them and reading about them. This will help you to find the animals when required, and to provide more interesting interpretation.
- Find out what technology is available to assist you in providing satisfying kangaroo encounters and learn to use it properly.
- Plan for flexibility in your tours and do what you can to adjust the tour to your guests’ interests.
- Take steps to habituate the kangaroos without use of food or other rewards.
- A good principle for minimising disturbance to kangaroos as well as providing satisfying visitor experiences is that you should not cause them to hop away.
- Learn to anticipate the kangaroos’ behaviour so that you can ask your group to back away or remain still to prevent the kangaroos taking flight.
- Contribute to the conservation of your local area and wildlife; use this in your promotion and where possible involve your visitors.
- Build positive relationships with wildlife researchers and protected area managers working in the area based on mutual benefits.
- In providing an interesting kangaroo experience for visitors, it is not only the kangaroos themselves that may be of interest, but also their signs.
- Remind your guests to drive slowly and keep their eyes open for wildlife, especially in the dusk and dark.
- Encourage visitors to use zoom or telephoto lens on their cameras so they do not need to approach closely for photography.

Environmental management

- Adopt published guidelines for best practice environmental management for nature-based tourism operators and use this in your marketing.
- On walking tours, keep your visitors on the track.
- While in road transport, avoid driving off road in areas of natural habitat.
- In your interpretation, tell your guests about the importance of habitat for kangaroos and other animals.
• Where feasible, get involved in habitat restoration and protection. Integrate this into your presentation.
• Seek advice from managers of natural areas you are using on how best to reduce environmental impacts.
• Use a relatively small group size.
• Consider becoming accredited with the National Ecotourism Accreditation Program, and follow their guidelines.

Directions for future development of kangaroo-related tourism

• The emphasis in future kangaroo-related tourism development should probably be in enhancing existing experiences rather than setting up new enterprises.
• In order to expose the greatest number of visitors to positive kangaroo experiences, the emphasis of efforts to develop kangaroo-related tourism should probably be on protected areas, although more research is needed on their role.
• In relation to private commercial kangaroo-related tourism, there should be a focus on enhancing the use of kangaroos within broader nature-based tours, as these comprise the largest number of businesses involved in kangaroo-related tourism.
• Adequate resources are needed for effective protected area management to ensure sustainability of kangaroos and the natural environment in these areas.
• The emphasis in kangaroo-related tourism should be on providing high quality experiences that are as ‘natural’ as possible.
• The larger kangaroo species are likely to provide the greatest potential for tourism.
• The tourism industry and protected area authorities should cooperate to improve sustainability of kangaroo-related tourism and develop more secure access to protected areas by environmentally responsible tour operators.

Tools to facilitate sustainable kangaroo-related tourism

A kit should be produced for operators containing information and advice relating to:
• providing high quality interpretation;
• responsible marketing and promotion;
• effective management of kangaroo encounters; and
• key sources of information on kangaroos.

Don Gartside

Objectives of Study
This report presents an overview of the marine charter boat fishing sector in Australia. In particular, it covers the size and composition of the sector, its rapid growth, the developing regulatory environment and the challenges and opportunities the sector is facing from both the natural resource management and tourism perspectives.

Methodology
The material in this report is based on ‘grey’ literature, including unpublished discussion papers prepared by governments, data sets from government agencies and other printed materials, such as printed promotional materials from charter boat operators, local and regional tourism directories and searches of listings in Yellow Pages telephone directories. Interviews were conducted in Adelaide, Darwin and Cairns with government and officers of fisheries and tourism agencies, commercial tourism outlets and fishing operators.

Key Findings
The focus of state government fisheries discussion papers on the management of marine charter boat fishing is on natural resource management issues, rather than the many tourism issues. Tourism issues are presented in the study, however, the fisheries issues are:

• Competition between charter boats for access to the most productive or consistent sites to maintain client satisfaction can lead to local depletion of fish stocks and irresponsible or wasteful fishing practices based on reducing costs or increasing catches.
• Unregulated entry to the sector will lead to excess effort, overcapitalisation and poor profitability of the sector. What form should regulation take and should there be local or regional restrictions on access?
• Who is to pay for management of the sector—its research, regulation, data collection and processing, enforcement, representation on resource allocation committees and management agencies and promotion?
• How will the requirements of the National Competition Policy be met without compromising resource protection by the requirement to maintain competition between operators?
• How can the activities of dual commercial fishing and charter operator license-holders be regulated fairly? Can charter operators sell or keep their clients’ catches? Is it practical to notify authorities of the nature of a trip each time before departure?

Recommendations
There are a number of important issues that should be addressed for the future of the sector. The recommendations are:

• Controls on effort—there needs to be restriction on entry to the sector, to help meet fisheries management requirements for controls on harvest and to reduce the large fluctuations in numbers of operators.
• Coordination of government regulation—the fragmented, duplicated and complex government regulation applying to the sector could be addressed by adopting the proposed Western Australia ‘whole of government’ approach and providing coordination between government agencies and a ‘one stop shop’ approach to the disparate requirements of different agencies.
• Development of industry standards/code of conduct—the industry needs to address the issue of service standards. Possible approaches could include developing a charter of customer service/client satisfaction, adopting a system of registration or accreditation for operators to meet tourism standards and developing a system of operating standards and procedures.
• Marketing/tourism promotion—existing approaches to marketing appear to be fragmented and orientated to individual operations. The industry is likely to benefit from a coordinated approach to marketing and promotion, either at a regional, state or national level. Construction of regional web sites listing charter boat fishing operators in the region might assist this process, as would print-based listings of operators in each region, so that their services could be identified in a single publication.
• Funding for management—there is a need to establish peak bodies at the state level and perhaps a peak (representative) body nationally. The industry presently lacks structure to facilitate this process or have any coherent approach to negotiations with government on fees and funding, although some states, particularly Western Australia, appear to be more advanced in this respect.
• Role in regional development—the sector provides employment and capital investment directly from its boats, but also can serve to attract tourists who will use other facilities in the region and create further economic multiplier effect benefits.
• Recognition of part in fisheries management/world best practice—the marine charter boat fishing sector is part of the overall fishing industry and must be recognised as part of this industry, whatever its contribution to tourism. Elements of the sector in Australia, and particularly the Cairns game fishing boats, are developing world leading best practice in their fishing operations.

David B Croft

Objectives of Study

Large populations of kangaroos in the outback could be used to build a unique tourist attraction, comparable to an African game-viewing safari, but with animals unlike anything found elsewhere. This project focused on the far west of NSW where the greatest densities of kangaroos are found. The objectives were to:

- conduct an attitudinal survey of visitors to research the feasibility and demand for specialised tourism based around kangaroos
- observe visitors to Sturt National Park to assess how they use current facilities and interact with wildlife (especially kangaroos)
- conduct a survey of tourist operators in the region to assess current activity and demand for innovative wildlife products
- review statistical information about non-visitors to the region to assess constraints which may impede uptake of kangaroo-based tourist products in the region.

Methodology

The attitudinal survey was conducted at Sturt National Park (Sturt) between December 1998 and December 1999. Control groups were surveyed at Broken Hill and Kinchega National Parks during the summer, autumn and winter school holidays. Observations of visitors at Sturt National Park were made at a bird hide at South Myers Tank and at the Olive Downs lookout. A questionnaire was also sent to twenty-three tourism operators whose itinerary included Sturt.

Key Findings

- Visitors were primarily domestic tourists from NSW or Victoria travelling as couples or families in their own vehicle. National park visitors were usually self-sufficient bush campers. The profile was inconsistent with the typical international visitor engaged in nature-based activities, who are usually 20 to 29 years, travelling by less independent means and using permanent accommodation.
- Wildlife viewing consumed a large part of the holidays of all visitors to this part of Outback NSW, more so if they visited a national park. Kangaroos were a strong attraction amidst diverse landscapes in an environment praised for its wilderness qualities.
- Visitors appreciated the quality of the infrastructure in Sturt (i.e. access roads, wildlife viewing locations, etc.) claiming it enhanced their experience beyond expectations. However, dust, rough roads, flies and lack of amenities were detractions for some.
- Observations of visitors at a bird hide and a lookout suggested that individuals and parties make appropriate use of such developments. However, their attention is not held for long and most seem to spend their time driving along access roads.
- Kangaroos are considered a high-quality wildlife attraction by operators and Sturt delivers a good experience with them to their clients. Most operators were receptive to the sale of guidebooks and development of free wildlife viewing platforms.

Recommendations

Kangaroos were clearly shown to be a strong attraction of Sturt. Possible methods to enhance these experiences include:

- Visitors could be advised where large aggregations of kangaroos are to be found on their visit since this is a spectacle that is appreciated. They could be better educated about the four species on the park and need more information on identifying species and appreciating the similarities and differences in their ecology and behaviour. Visitors expressed a strong demand for a guidebook to Sturt, which is not being met. Such a guide could take the four kangaroos as keystone species to explain the landscape.
- Sturt visitors and tourism operators are clearly receptive to new products to enhance their or their clients experience with wildlife, especially if they are a free part of the park’s infrastructure. The challenge from this study is to meet that demand and build a truly remarkable outback experience with ‘Big Red’ centre stage. Any development needs to be handled with sensitivity to the current ‘wilderness’ experience in this part of the Outback. Visitor management will be necessary to limit numbers to avoid degrading impacts on the habitat (e.g. channel erosion) and other visitors’ appreciation of the vastness and quietude of the landscape.
- Tourists arriving at Sturt find insufficient activities to hold them in the park for long. New products should focus on the well-placed campgrounds to give each a unique character and set of activities so that no journey is complete unless one lingered in each place.
- There are good prospects for one or more local operators in Tibooburra to service clients to Sturt and other local attractions. Backpackers and younger travellers may be encouraged to travel to the region if a mini-bus or some appropriate form of public transport operated on demand from Broken Hill.
Objectives of Study
This review analyses the role and importance of hunting by drawing on examples from Australia and overseas. The aims are to:

- review the available literature on hunting and review a selected component of grey (unpublished, reports etc.) literature on hunting;
- incorporate and analyse the Australian situation on hunting;
- analyse aspects of the global trophy hunting industry;
- analyse some Australian and overseas organisational, policy and legislative arrangements for hunting; and
- document discussions with key players in the industry and examine regulation and legislative processes.

Methodology
This review is based on the long-term involvement of the authors with ecology, wildlife conservation and aspects of hunting in various regions of the world. It analyses their observations in terms of their relevance to Australia drawing on many examples and case studies.

Key Findings
This review analyses the role and importance of hunting by drawing on examples from Australia and overseas. Hunting may be undertaken for sport, subsistence, traditional and cultural purposes, commercial harvesting of wildlife, animal control, market rearing and trophy acquisition. The wide range of positions of hunting legislation, attitudes towards hunting, cultural significance of hunting and diversity of species being hunted provides an opportunity to identify the role hunting can and does play in contemporary society. It also allows us to understand how this role changes as rural societies become urbanised and as developing nations progress. Last but not least this review examines how western attitudes have influenced prevailing global perceptions on hunting.

Although now replaced in most societies by agriculture in its contribution to food production, hunting continues to play an important role in many countries. In the Northern Hemisphere (mostly industrialised) approximately 20 million people hunt for sport or for subsistence, harvesting in excess of six million ungulates per year for consumption. From figures available, we estimate that this industry is worth in excess of 60 billion US dollars in the Northern Hemisphere. Less documented and accountable is the hunting, which continues to support many hundreds of millions of people in developing countries, many of them from indigenous societies. For these people hunting can be an essential component of their socio-economy. There is however one major difference in the importance of hunting between developed and developing nations. Game in developed countries generally thrives. In developing countries, however, game animals have become scarce or are inaccessible in protected areas.

Hunting in industrialised countries, and the entire $20.6 billion-dollar industry in the US can be viewed as recreational. This is true also of the one billion-dollar industry in Australia. This review aims to give an understanding of the importance of hunting in Australian society. It also documents hunting as focal to the cultural heritage of Aboriginal people.

Recommendations
We have identified what we believe to be key issues for hunting in Australia:

- more involvement of hunting organisations with international conservation projects
- greater involvement in ideological disputes
- better international liaison and cooperation
- development of acceptable hunting models for protected areas
- development of efficient self regulation in international trophy hunting
- involvement of Indigenous people in the development of national conservation and hunting legislation
- developing projects to establish and implement national hunting policies in developing countries
- Green Globe and a ‘Green Bullet’ accreditation system.
Amanda Smith, David Newsome, Diane Lee and Natalie Stoeckl

Objectives of Study
Monkey Mia in Western Australia and Hervey Bay in Queensland were selected for this study. Each site utilises iconic marine wildlife in the form of dolphins and whales with the chosen destinations representing conditions on each side of the Australian continent. The study aimed to conduct empirical research in order to evaluate the following:
- the dependency of a regional tourism product on iconic wildlife
- to determine what other opportunities are viable if the situation surrounding a tourism ‘icon’ changes and the icon declines/disappears
- to determine what other alternatives are available should impacts become unacceptable or visitor experiences become degraded.

A secondary objective to support the above findings includes an examination of the wider expenditure patterns of iconic wildlife visitors.

Methodology
The methods employed consisted of a literature review and development and distribution of questionnaires to visitors and tour operators and an interview of managers at Monkey Mia, Western Australia and Hervey Bay, Queensland.

Key Findings
- It was found that the absence of dolphins from Monkey Mia would greatly detract from visitor satisfaction, with the opportunity to experience dolphins close up being the best part of the overall experience. Managers were of the view that there would be an economic impact on local businesses and on the tourism industry and staffing levels would have to be reduced both at CALM and at the resort.
- Operators indicated that they would change their itinerary and would consider no longer coming to Monkey Mia. Management felt that Monkey Mia would lose its identity if the dolphins were no longer present and there would be a reduction in visitor numbers.
- If dolphin viewing was not available at Monkey Mia, other experiences such as wildlife cruises, the stromatolites and interpretive walks would need to be promoted along with the development of a nearby nocturnal wildlife viewing facility.
- Similar findings were indicated at Hervey Bay in that an absence of whales would greatly detract from the visitor experience, while seeing whales close up, including along side of the boat, was the best part of their experience. Managers and tour operators generally thought that if it was not possible to take a whale watching tour then tourists would still come to Hervey Bay but there would be a reduction in the number of visitors. Some operators indicated that a long-term absence of whales from Hervey Bay would result in them having to close their business and that there would be a large impact on local businesses and accommodation providers.
- Economic analysis shows that the residents of the Gascoyne are more dependent on wildlife icons for their livelihood than the residents of Hervey Bay, although the total visitor expenditure that is attributable to wildlife icons is approximately equal in both regions.
- A strategy of alternative product development could also be applied to Hervey Bay with the development of a visitor centre focusing on the wider marine ecosystem, whale biology, human relationships with whales and the management of tourism.

Recommendations
This study highlights the importance of maintaining the icon and a high quality experience through interpretation and management of potential impacts. More importantly there is a need to diversify the tourism product that is currently available at both icon sites in order to alleviate problems that may arise as a result of dependence on wildlife icons.

A central question in relation to wildlife icons is an understanding of how sustainability of the wildlife icon site can be improved. Additional research needs to be carried out with regard to auditing additional icon sites for impacts, visitor satisfaction, management effectiveness and opportunities for additional nature based attractions. In particular such research could explore the best protocols for wildlife impact assessment. All icon sites require a statement of best practice in relation to the promotion of natural experiences, well thought out and researched interpretive programs, value adding through linkage with conservation initiatives, the development of impact databases, monitoring systems and adaptive management.
**Objectives of Study**

This project is part of a larger Wildlife Tourism Strategy with a vision ‘to establish Tasmania as a world-class wildlife destination by identifying and facilitating the sustainable development and management of wildlife tourism’. The key objectives of this project were to:

- identify and map core wildlife tourism viewing opportunities across Tasmania;
- make suggestions on how to enhance wildlife viewing sites for tourism;
- improve the accuracy and quality of information provided to tourists; and
- market wildlife tourism both internationally and to domestic tourists.

**Methodology**

Extensive fieldwork collated details of existing wildlife tourism operators and sites and also identified potential future operators and sites. The resulting database of wildlife tourism viewing opportunities in Tasmania includes 110 operators, 140 different wildlife tours and around 220 species. The database was then significantly enhanced by the creation of a Geographical Information System (GIS).

**Key Findings**

To ensure immediate use both within the industry and to a wider set of stakeholders, the GIS version of the Tasmanian Wildlife Tourism Inventory is to be merged into Tourism Tasmania’s TigerTOUR, a purpose built database that contains information on the tourism product within Tasmania. TigerTOUR is updated daily and can be accessed via several means:

- Tourism Tasmania staff (including Tasmanian Travel Centres in Melbourne and Sydney) and Tasmanian Visitor Information Centres staff directly use TigerTOUR;
- Tourism Tasmania’s public website uses TigerTOUR product information;
- the Tasmanian Travelways newspaper displaying free listings of accommodation, tours and attractions is based on TigerTOUR information; and
- other websites, including the Travelways website, draw information from TigerTOUR.

TigerTOUR started providing information to the Australian Tourism Data Warehouse in mid-2001 and this will ultimately be displayed on the Australian Tourist Commission’s website.

Through these products the Tasmanian Wildlife Tourism Inventory is available and readily accessible to both international and domestic tourists. The Tasmanian Wildlife Tourism Inventory is also able to provide a solid base for further development work in the wildlife tourism industry. In its current form it can be used for the:

- promotion of wildlife tourism in regional tourism development;
- promotion of best practice models for wildlife tourism;
- development of networking within the wildlife tourism industry;
- education of the public about unique wildlife and viewing opportunities;
- offering to people enjoyable, high quality interpretive wildlife experiences;
- better management of the sector; and
- targeting of segments within the wildlife tourism sector for more specific marketing.
**Recommendations**

Further work is recommended to:

- develop further codes for minimum impact viewing guidelines for both specific sites and species and add these to the database;
- establish regular training courses or seminars to help operators not only develop and implement minimum impact viewing guidelines for their sites in conjunction with experts, but also improve overall interpretation skills;
- develop good working models of best practice in wildlife viewing;
- continue work on minimizing road kill problems, analysis of impacts of artificial feeding and other wildlife issues;
- develop working relationships between stakeholders, particularly between operators and government. This should include an analysis of formal partnerships as a way of improving the industry. Stakeholders include the community, operators, landowners and managers, local and regional government, government agencies, conservation groups as well as tourists and the tourism industry;
- rapidly establish means to monitor/audit key sites for visitor impacts, including the development of base-line data;
- conduct further research in wildlife tourism to gain a better understanding of the different segments within the sector and the relevant demand and supply issues;
- create itineraries in each wildlife-viewing cluster;
- analyse the existing location, species, operator and other supply information against potential demand to determine gaps and opportunities in Tasmania’s wildlife tourism market;
- identify and promote the value of wildlife tourism to the local community; and
- develop and include more flora programs and/or linkages of fauna with flora and natural scenic areas.
WILDLIFE Tourism

CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE

Karen Higginbottom and Ralf Buckley

Objectives of Study
This report reviews ‘terrestrial wildlife viewing’ (non-consumptive tourism based on free-ranging land-dwelling and freshwater animals in their natural habitats) in Australia. It provides a critical overview of the current status of terrestrial wildlife viewing in Australia, within the context of this form of tourism worldwide, as well as recommendations for action and research to facilitate the sustainable development and management of this sub-sector.

Methodology
Information was obtained principally through literature review, pilot field research and interviews. Site visits and operator interviews were conducted during 1999 to 2000 with 11 tourism enterprises in the south east Queensland/north east New South Wales regions that include viewing of terrestrial wildlife. The types of experiences and animals that characterise this form of tourism are described and quantified.

Key Findings
• In Australia, at least 768 organisations provide terrestrial wildlife viewing experiences, but for 93% of these, wildlife viewing is one component of a broader general tourism experience. The vast majority of these enterprises are small businesses.
• Kangaroos, koalas and crocodiles feature most often in terrestrial wildlife viewing in Australia, as indicated by advertising materials. The kangaroo is one of the world’s most recognisable icons for Americans in terms of the proportion of people correctly associating a symbol with the country of origin.
• Wildlife viewing (principally terrestrial) is a significant motivation for 18.4% of international visitors to choose Australia as their destination, and 67.5% of such visitors wish to see Australian animals while they are here.
• Seeing wild animals is a significant factor in choice of holiday destination for around a third of Australian domestic tourists.
• A key problem facing protected areas, and sustainable wildlife tourism, is inadequate resourcing of management authorities.
• The main obstacles to business success of terrestrial wildlife viewing businesses appear to be similar to those facing nature-based tourism businesses in general: inadequate marketing resources, inability to forge links with the global tourism system, staff with no formal business or tourism training, lack of business acumen, a tendency to stay isolated and independent, and poor quality products.

Recommendations
Australia has many important competitive advantages in relation to terrestrial wildlife viewing, as well as significant challenges to be overcome. There is potential for growth and scope for improvement in product quality. There are also opportunities for increased linking of terrestrial wildlife viewing to conservation that deserves investigation. Recommended actions include enhancing the quality of the viewing experience; education of the tourism industry on wildlife and impact issues; conducting marketing campaigns to increase demand levels; enhanced management and monitoring of impacts and greater cooperation between conservation and tourism groups.

A number of recommendations were made regarding research and communication:
• identify species and situations suitable for wildlife tourism development (see also Green, Higginbottom & Northrope, 2001)
• investigate demand and market characteristics (i.e. areas of unmet demand and opportunities for driving increased demand)
• investigate obstacles to tourist participation in existing wildlife tourism opportunities (especially the roles of price and marketing)
• investigate causes of low visitor numbers for many small operators
• assess channels for, and effectiveness of, current marketing strategies and components
• assess impacts of wildlife viewing on species or populations considered to be at high risk or of threatened conservation status
• assess impacts of visitor feeding on terrestrial wildlife populations
• assess effectiveness of different management techniques in various types of wildlife viewing situations
• investigate obstacles and opportunities for sustainable terrestrial wildlife viewing tourism on private land
• assess factors determining the effectiveness of interpretation, with regard to conservation outcomes and visitor satisfaction
• produce guidelines, interpretive and management-related written materials to assist tourists, travel agents and managers
• produce interpretive and marketing materials regarding wildlife tourism opportunities in protected areas, to raise incidence and satisfaction levels of wildlife encounters by visitors.
Alastair Birtles, Peter Valentine and Matt Curnock

Objectives of Study
This review provides a comprehensive description of the current marine wildlife tourism product in Australia. It covers operations involving over 70 marine species and includes discussion of the relevant management legislation and enumeration of permitted operators. Details for around 25 species are outlined on a state-by-state basis up to the start of 2000.

Methodology
Information on marine wildlife tourism locations, species and operators was gathered through searches of the Internet, published literature, and through contact with more than 60 members of various management agencies, tourism and industry organisations throughout Australia.

Key Findings
There has been particularly strong growth in the whale watching industry throughout Australia since 1994, with an almost three-fold increase in the number of commercial whale watching permits issued in Western Australia. The management issues surrounding each species and available tourist platform (i.e. shore, boat, air or swim-based) were found to be highly varied, with different management approaches taken by different state management authorities. Many of the target species identified are classified as endangered, threatened, vulnerable or at risk, with some populations still recovering from previous consumptive exploitation. Little is known of even the basic biology of many of these species, nor of the impacts of their increasing tourism use. It is strongly recommended that the precautionary principle be applied to their management and that scientific research efforts be increased. The diversity of platforms, local conditions, and especially size, behaviour and biology of the target species (ranging from 30 tonne humpback whales to small fishes) mean that it is imperative that guidelines are species-specific, and occasionally locality and/or operation-specific.

A leading example of research knowledge contributing to marine wildlife based tourism comes from whale shark tourism at Ningaloo Marine Park. It was shown by researchers that to increase the distance snorkellers must keep away from the sharks would actually have no negative effect on the experience while reducing considerably the risk of accidental contact. At Phillip Island the use of high technology to allow visitors the chance to have a virtual interaction with sea lions on their adjacent reserve has been highly successful. The visitor experience response has been excellent and the sea lions remain undisturbed. This has been accomplished by private investment taking every care to limit impacts while providing high quality experiences.

In far northern Queensland the dwarf minke whale provides a fascinating example of co-operative efforts to achieve ecologically sustainable outcomes. A species which has only recently been closely observed and about which almost nothing is known was recognised as providing an opportunity for tourism. From the beginning, one of the local operators experiencing minke whale sightings (Undersea Explorer) initiated a program of rapid knowledge development and involved scientists at the earliest stage of the fledgling industry. Already considerable work has been accomplished in both learning about this remarkable species and attempting to co-operatively develop appropriate guidelines for the operation of a swim with whales industry.

Recommendations
It is recommended that a database be developed on a species by species basis to collate information about the current situation and changing circumstances associated with marine wildlife-based tourism, and that reviews of existing management guidelines be undertaken involving agencies, industry and researchers. Further recommendations include the development of a research program that leads to a model for assessing the social and economic benefits of wildlife based tourism for each species. There is also a critical need for adequate levels of marine wildlife research funding. Tourism operators have a responsibility to assist in addressing present research funding gaps through in-kind contributions, such as providing access for researchers and participation in regular monitoring programs, which can in turn benefit their operations and lead to the long-term sustainability of the industry. Co-operative research with involvement of industry in the study of both the animal and the tourists has already occurred, for example, in the fledgling marine wildlife tourism involving dwarf minke whales in the northern Great Barrier Reef. This collaboration provides an excellent model for achieving positive management outcomes in marine wildlife tourism.
Report Twenty: Trout Tourism: investigating the growth potential for international and national trout tourists to Tasmania (2002)

Adrian Franklin and John Sheen

Objectives of Study
This project has investigated the trout fisheries in New Zealand and Tasmania with a view to establishing improved domestic and overseas visitors to the Tasmanian fishery. New Zealand had been chosen as an ideal comparator in that it is approximately the same distance from the main demand groups; it shares with Tasmania a reputation as a premier trout fishery but unlike Tasmania, New Zealand trout fishing has been a notable success story in their recent excellence in tourism. This project will deliver clear supportable policy suggestions for ways to increase overseas trout tourism to Tasmania based upon comparative data with the New Zealand case.

Methodology
In addition to desktop study and literature reviews, interviews with stakeholders in Tasmania and New Zealand were also conducted including existing businesses; the guides; the regional recreational fishing associations; fisheries management bodies; ancillary industries and businesses and landowners.

Key Findings
- The development of angling tourism in New Zealand was critically assisted by support from an airline and was subsequently industry driven. This demonstrates that a world-class fishery and spectacular scenery are not sufficient to guarantee the success of Tasmania as an international fly-fishing destination; initiative, imagination and the courage to invest substantially are also essential.
- Tasmania’s trout angling resource has far remained relatively under-exploited where as New Zealand has established a thriving industry predicated on stream fly-fishing.
- Although some development has occurred, infrastructure problems must be addressed for the Tasmanian fishery to reach its tourism potential: including the introduction of state regulations to license fishing guides, state government support to ensure the accommodation needs of visiting anglers are met and the lack of information for anglers be addressed by the Inland Fisheries Service in cooperation with Tourism Tasmania.
- An outline of the development of the Tasmanian fishery compared to New Zealand has demonstrated that the marketing of the Tasmanian fishery has always lacked cohesion. With limited funds the marketing of the Tasmanian fishery has been concentrated in New South Wales and Victoria.
Although progress has been made in marketing to the high yield and fly fisher market in the USA, the feasibility of marketing in the United Kingdom should be continued at, as this is a market that has historically demonstrated an enthusiasm to visit the Tasmanian fishery.

**Recommendations**

**Sustainability**
- Good management systems to handle increased anglers to the Tasmanian fishery will mean that the increase can be handled with minimal environmental impacts.
- The IFS and National Parks and Wildlife need to work together to identify sites where anglers are having or could have detrimental effects on either the natural environment or the fishery. Some of the techniques for managing anglers’ impact may include limits on the numbers of anglers at a fishery.

**Markets**
- A strong positioning which differentiates the Tasmanian fishery from other destinations is needed. A perceived strength of the Tasmania fishery is the types of unique fishing available that include polaroiding or sight fishing to large fish in shallow margins.
- It has been demonstrated that European methods of fishing are appropriate for Tasmanian conditions including the British loch style technique. River and stream fishing, although available in Tasmania is of a far lesser quality than New Zealand and at present Tasmania has no trophy waters.
- If the cost of any extensive market campaign can be met in the future, the feasibility of entering the European market needs to be looked at in closer detail. Firstly as the type of fishing they prefer is appropriate in Tasmania conditions, and secondly Tasmania is not competing with New Zealand to attract American anglers.

**Tasmanian fishery brand**
The development of a brand for the region is one option for communicating the existence of the fishery to target markets. The fisheries in Tasmania’s Central Highlands could be linked together using a regional brand.

**Future research**
The focus of future research should be on improving understanding of:
- needs and motivations of anglers to the Tasmanian fishery
- anglers perceptions of Tasmania prior to and after visiting
- visitor perceptions of fishing in Tasmania relative to other destinations
- what angler satisfaction is dependent upon.
Host Communities
Host Communities

Overview

The growth and popularity of certain forms of wildlife tourism poses increasing opportunities and threats for host communities. Wildlife tourism depends on a viable resource (wildlife), an interested market (tourists) and accommodating locals (hosts). Wildlife tourism activities have many potential impacts on a host community, and the host community can impact on wildlife tourism activities. Any increase in wildlife tourism is likely to be accompanied by a growth in the number of people affected by it, and thus a challenge for the wildlife tourism industry is to maximise cultural, economic and social benefits for the host community while minimising any adverse effects.

Frequently referred to in tourism literature, ‘host community’ is often presented as synonymous with ‘residents’, ‘locals’, ‘public’ or ‘citizens’. Such terms, however, rarely distinguish between hosts as suppliers and tourists as users of tourism resources. An important characteristic of the host community is that it does not constitute a unified whole, and its constituent groups of stakeholders and individuals are rarely homogenous. Divergent interests exist amongst host community members and recognition of this is essential for tourism planners, developers, and managers. Consequently, when comment is made on host support, or otherwise, it is important to recognise that variations in level of support may exist within the same community.

In Australia, tourism offers Indigenous communities the opportunity to gain economic benefits from wildlife and to communicate Indigenous knowledge and understandings of wildlife to visitors. Although Indigenous peoples have limited involvement in wildlife tourism, Indigenous land-ownership and Indigenous knowledge of country and wildlife indicate the potential for growth in this area. The relationship between Indigenous peoples and Australian wildlife includes traditional cultural, and spiritual dimensions, as well as ongoing use of wildlife for food and artefacts, and more recent commercial uses including wildlife farms and tourism.

Hosts have much to offer wildlife tourism and wildlife tourism has much to offer hosts. Through extensive traditional, and in-depth local, knowledge host communities can enhance the wildlife experience for tourists and positively contribute to species and ecosystem conservation; thus increasing the possibility of wildlife tourism being sustainable. Effective host participation in planning and management can build support for wildlife tourism developments, create new partnerships, help resolve conflicts between stakeholders, and provide an additional source of knowledge and labour. Revenue, via compensation and employment, from wildlife tourism can increase host communities’ standards of living. However, revenue from and distribution needs to be carefully considered through a process that includes the active participation of hosts and this needs to be balanced against the substantial costs in money and time required for comprehensive programs of stakeholder participation.

“Conservation activities have greater potential for success if local people are allowed to take part in formulating and implementing policies and programs that incorporate safeguards against abuses and that place strong emphasis on equity and social justice.”

Hitchcock, 1997


Report Twenty-One: The Host Community: social and cultural issues concerning wildlife tourism (2001)

Georgette Leah Burns and Trevor Sofield

Objectives of Study
The aim of this report is to identify and describe the social and cultural factors that influence wildlife tourism from the perspectives of local communities. The emphasis is on Australian communities living in proximity to, or involved with, wildlife as a tourism resource.

Methodology
Compilation of this report was based on a review of existing Australian and international literature sources. Data was also collected using a short questionnaire sent to all local government councils in Australia (198 distributed by email and 507 by postal mail).

Key Findings

Hosts and sustainability
- The host community is also an important element to consider in the concept of sustainability. The sustainability of wildlife tourism is dependent, in part, on its support from the area’s residents. Host satisfaction is related to both the involvement of local community members in wildlife tourism activities, and the benefits and disadvantages of wildlife tourism to host communities.
- Social and cultural issues need to be considered because of the importance of host acceptance. Determining how to make a wildlife tourism attraction sustainable from the perspective of the host community requires an understanding of the interplay of elements affecting both the perception of, and support for, that tourism.

Impacts and attitudes
- The actual and perceived impacts of wildlife tourism will influence the attitudes of the host community and ultimately have an effect on sustainability. It is postulated that wildlife tourism will only be sustainable where there are benefits for the host community.
- Impacts on the social environment are likely to affect the behaviour of individuals, community groups, lifestyles, value systems and religious or traditional ceremonies. The magnitude of the impacts is likely to vary with the number of tourists, the length of stay, the importance of the wildlife to community life before tourism, and its place in cultural history.

Community involvement
- The host population’s acceptance of wildlife tourism is likely to vary depending on the way in which the host community interacts with the tourist and wildlife. A rural community whose lifestyle has incorporated consumptive/destructive activities (for example, shooting for food, sport and trophy hunting) may be introduced to a new understanding of wildlife. The establishment of an ecotourism venture based on wildlife or an enclosure venture (e.g. Dubbo Plains Zoo) may broaden world views of local residents.
- A study of local government councils in Australia revealed that community involvement varies widely from region to region and from one attraction to another. The attitudes of host community members will also vary from region to region and from one individual to another within a region. For example, attitudes towards activities such as hunting and fishing will vary from one host community to another and also between members of a host community.

Recommendations
An assessment is needed to identify the elements that affect host attitudes and levels of involvement, as well as factors that affect impacts on the community. It is recommended that research focusing on case studies could be conducted in areas where the level of community involvement in wildlife tourism activities is minimal, ranging to areas where community involvement is high.

If the research identifies a correlation between hosts’ attitudes and their degree of involvement in wildlife tourism activities, it would be possible to develop a model to help predict the magnitude of impacts on community attitudes. Such a model would improve the sustainability of wildlife tourism by identifying management approaches that would minimise the negative impacts on hosts and by providing an environment in which communities’ social values and norms can co-exist with wildlife tourism operations. It may then be appropriate to develop guidelines and recommendations for host community involvement in wildlife tourism. Local governments could play an important role in implementing and promoting these guidelines and, subsequently the sustainable role of wildlife tourism in host communities.

Lisa Palmer

Objectives of Study
The objective of this study is to provide a detailed review of tourism management issues in regard to guided sport fishing and commercial safari hunting ventures conducted on Aboriginal lands in the ‘Top End’ of the Northern Territory. In this report the perspectives of Aboriginal land owners and Aboriginal organisations, along with Government organisations, and fishing and hunting tourism operators, about the conflicts, environmental impacts and potential economic benefits of safari hunting, recreational fishing and sport fishing are addressed.

Methodology
The information presented in this report was collected over a period of six months from April to September 1999 in the Northern Territory and represents the views of a variety of stakeholders in the hunting and fishing tourism industry.

Key Findings
- It was found that Indigenous interests in fishing and hunting tourism in the Top End are locally significant and have the potential to translate into more active involvement in some communities as part of a ‘mixed use rural enterprise’ approach. There are a number of obstacles and opportunities involved in the development of these niche industries, including legal recognition of Indigenous interests in marine areas and inland waters adjacent to Aboriginal land, greater policing of commercial fishing practices along the coast of the Northern Territory, training and authorisation of Aboriginal owners to carry out monitoring and to ensure compliance with fisheries law in remote areas.
- In the safari hunting industry the ability of the Aboriginal Land Councils to fulfil their statutory obligations under the ALRA is challenged by an unregulated safari hunting industry. The development of an industry based on the safari hunting of native wildlife, such as crocodiles, needs to be approached with caution by Aboriginal communities. Aboriginal landowners and their representatives need to ensure that there is a legislative basis to protect their interests in the development of any commercial hunting activity.
- The environmental impacts of feral animals are a significant issue and need to be addressed on a regional basis. Strategies for incorporating feral animal control and other areas of land management into safari hunting operations should be investigated.
- An explicit code of practice for the safari hunting industry is needed, dealing with both the shooting of feral animals and compliance with animal welfare standards.

Recommendations
Based on the study’s findings the major recommendations of the report are:
- In small scale commercial tourism enterprises, Aboriginal traditional owners and their representative local community organisations should be encouraged to take a more pro-active role in facilitating the development of their own tourism enterprises, while at the same time recognising the commercial advantages that can be obtained from agreements secured under the Aboriginal Land Rights Act (Northern Territory) 1976 (ALRA).
- Cooperation between stakeholders should be promoted and encouraged. Forums for negotiation and information exchange should be organised and not be hampered by jurisdictional misunderstandings.
- Training modules administered through institutions delivering accredited, appropriate courses could be a potential source of niche training for Indigenous employment in the sport fishing and safari hunting industries. The potential of developing these niche markets to incorporate aspects of Indigenous methods of hunting and fishing should also be considered as a means of increasing Aboriginal participation and economic benefits.
- Greater policing of commercial fishing practices along the coast of the Northern Territory is needed to ensure illegal netting does not occur within the boundaries of excluded zones under the Fisheries Act. Resources could be made available to Aboriginal traditional owners and their organisations to carry out an enforcement and monitoring role under the Fisheries Act.
- Fishing charter ventures operating along the coastal areas of Aboriginal land be encouraged to recognise the marine interests of Aboriginal traditional owners and to negotiate agreements for access to those waterways.
• Research should be commissioned into strategies for management aimed at the economic and environmental sustainability of the buffalo herds in Arnhem Land. Further research also needs to be commissioned to ensure the long-term economic and environmental sustainability of banteng (Balinese cattle) herds in Gurig National Park.

• Given the general acceptance amongst many stakeholders in the safari hunting industry that the industry needs to be regulated, regulation could take the form of pro-active self-regulation amongst operators, or government imposed regulation that would license operators to ensure standardisation, professionalism and appropriate accreditation across the industry. An explicit code of practice for the safari hunting industry is needed that adequately addresses animal welfare issues.

• Operators should be made aware of the range of ways in which they can integrate Indigenous content into their activities, the potential benefits from employing suitable Indigenous staff and incorporating Indigenous content into their presentations, the potential obstacles they may face and how to effectively deal with these.

• There seems to be a need for local Indigenous communities to provide greater support for the employment of Indigenous staff at wildlife attractions. Several mechanisms for achieving this are suggested.

• More support should be provided to managers of wildlife attractions by government agencies responsible for employing and training Indigenous staff. Several mechanisms for achieving this are suggested.
Sue Muloin, Heather Zeppel and Karen Higginbottom

Objectives of Study
This report reviews and evaluates involvement by Indigenous people in wildlife tourism operations across mainland Australia. The focus is on wildlife attractions that feature living wildlife in either captive or free-ranging settings and that also incorporate Indigenous cultural presentations. The sample included zoos and wildlife parks, nature resorts, natural and cultural heritage tours, Indigenous-owned boat cruises, emu farms, a crocodile farm and land-based whale watching on Yalata Aboriginal Land.

Methodology
Telephone interviews were held with 35 managers (10 Indigenous) and 26 Indigenous staff members to evaluate how Indigenous cultures and Indigenous knowledge of wildlife are presented at wildlife sites. A total of 33 Indigenous wildlife attractions or wildlife tours were included in this study.

Key Findings
The main findings on the current state of Indigenous wildlife tourism in Australia are as follows:

• There are 15 Indigenous staff members (guides/wildlife keepers) employed at state-owned zoos, wildlife parks and aquaria in Australia. Nature-based tour operators, Indigenous-owned resorts, cruises and wildlife farms employed a total of 30 to 50 Indigenous staff, depending on seasonal requirements for tour guides.

• Indigenous-owned wildlife tourism ventures are based mainly within National Parks (e.g. Kakadu, Geikie Gorge), at nature-based resorts (e.g. Pajinka, Kooljaman), on Aboriginal lands (e.g. Arnhem Land, Yalata Aboriginal Lands) and at wildlife farms.

• From a managerial perspective, the most common type of interpretive information provided by non-Indigenous staff was the traditional Indigenous use of wildlife followed by biological facts and species information. The Indigenous staff reported both traditional uses of wildlife and personal stories about wildlife, followed by Aboriginal dreaming and creation stories.

• Staff believe that tourists benefit from the inclusion of Indigenous content at wildlife tourism attractions by broadening the mind; giving additional value or worth to the experience; dispelling myths; learning/education; adding novelty and excitement for visitors; increasing cultural awareness and developing positive attitudes toward Indigenous peoples.

• Many respondents expressed their desire for additional cultural content in the form of employing Indigenous people to provide interpretive tours and talks at wildlife sites. Indigenous wildlife interpretation also needs to be improved at zoos.

• Key obstacles facing Indigenous involvement include lack of education/training and funding for Indigenous programs; limited infrastructure; negative attitudes and stereotypes; lack of commitment and self-confidence; and government dependency.

• Most wildlife attractions do not have a policy on Indigenous employment and training or cultural guidelines for Indigenous interpretation of Australian wildlife.

• There are many opportunities for greater Indigenous involvement in the wildlife tourism industry, including interpretation and business ownership or management. The employment of Indigenous people as cultural guides and/or educators was cited most frequently. Managers and staff involved in Indigenous wildlife tourism believe that Indigenous involvement in wildlife attractions or tours can promote reconciliation and increase general understanding and awareness of Indigenous cultures in Australia.

Recommendations
The principal recommendations of this study are as follows:

• Ways to expand the current level of Indigenous involvement in wildlife tourism in Australia should be explored.

• Operators should be made aware of how to integrate Indigenous content into their activities, the benefits from employing Indigenous staff and incorporating Indigenous content into their presentations and how to effectively deal with potential obstacles they may face.

• There seems to be a need for local Indigenous communities to provide greater support for the employment of Indigenous staff at wildlife attractions. Several mechanisms for achieving this are suggested.

• More support should be provided to managers of wildlife attractions by government agencies responsible for employing and training Indigenous staff. Several mechanisms for achieving this are suggested.
Visitors

Tourism Queensland

Wildlife Impacts and Management

Eastern Grey Kangaroo joey being hand-fed ‘kangaroo milk’ at Myella Farmstay, QLD
© Tourism Australia
Wildlife Impacts and Management

Overview
As the wildlife tourism industry grows, so have concerns about threats to wildlife populations and their habitats. A large body of research now exists to show that a wide range of negative impacts of wildlife tourism can and do occur. This concern is exacerbated by the desire of some tourists to see threatened species and to travel to increasingly remote areas. To ensure sustainability of the wildlife resource, appropriate management and monitoring is required, and some species and situations may even need to be precluded from tourism altogether.

On the other hand, wildlife tourism can also contribute positively to conservation. There has been a progressive recognition that if conservation is to be successful in the long term, it must be promoted both inside and outside protected areas, and must be integrated with the realities of modern economies and meeting people’s needs. Governments and major international conservation organisations now widely support the view that well-managed nature-based tourism is one form of land use that can meet these joint goals. In areas where suitable wildlife exists, development of tourism based on wildlife watching or hunting can provide economic incentives and revenue for conservation of natural habitats and wildlife. Further, wildlife tourism in some cases provides revenue that helps fund conservation and there is evidence that there is potential for an increase in this form of funding.1

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Report Twenty-Four: Behavioural Responses of Dingoes to Tourists on Fraser Island (2002)
Kate Lawrance and Karen Higginbottom

Objectives of Study
The aims of this study were to:

• determine the effects of the intensity of human use of an area on dingo behaviour;
• determine whether certain human behaviours are triggers of aggressive and other dingo behaviours;
• determine whether certain characteristics of individual dingoes and humans are associated with the likelihood of aggressive interactions with humans; and
• make recommendations for the modification of tourist education programs in order to reduce the incidence of aggressive interactions between dingoes and tourists.

Methodology
Three separate techniques were employed in order to answer the different research questions of this study:

• Firstly, a survey was implemented in order to answer questions about how characteristics of dingoes and other factors relate to aggressive incidents between dingoes and people. The survey was to be completed by rangers on Fraser Island whenever an aggressive incident with a dingo was reported. Actual interactions between dingoes and visitors could not be studied in sufficient numbers due to their infrequent and spatially dispersed occurrence.
• Secondly, in order to answer questions relating to effect of human presence on the pattern of dingo behaviour, observations were made of dingo behaviour in areas with high and low levels of human use.
• Thirdly, to determine if certain human behaviours are likely to affect dingo behaviour, behavioural sequence sampling was used.

Key Findings

Effects of intensity of human use of an area on dingo behaviour
• In the areas of low human use, dingoes spent almost half their time moving and about a quarter of the time lying down. They ate natural food items about 29 times per hour. In areas with high levels of human use, dingoes more frequently sniffed the ground, looked at people, and made sudden turns than when in areas with low levels of use. This seemed to reflect a greater propensity to actively search for food in such areas and to be disturbed by human behaviour.
• There were no significant differences in proportions of time spent in the various activities between high and low use areas. However, on average, dingoes spent about 13% less time lying down, 10% more time standing still, and 8% more time moving while in the high use areas. The lack of statistical significance may reflect the low level of power due to the small sample size. These results indicate that the natural behaviour of dingoes may be disrupted through exposure to human food sources and disturbances relating to human activity. The consequences of such disruptions are unknown.

Effect of human behaviour on dingo behaviour
• There was a significant relationship between the human stimulus behaviour and the dingo response. Dingoes were most likely to move towards the person or act aggressively in response to the person moving away from them. The dingo responses of moving away or submission were most likely to occur after the human had moved towards the dingo or displayed aggression. The human stimulus of Submission appeared to prompt a neutral or submissive response from the dingo. The nature of these relationships did not differ between times of the year. They were, however, affected by the gender of the dingo in one of these periods.
• In July to August, female dingoes were more likely than males to respond aggressively when the human moved towards them, and less likely to do so when the human moved away from them. This is the time of the year when pups are born. At other times of year, no difference was observed between the responses of male and female dingoes. During April to May (the mating season), adult dingoes were more likely to respond aggressively than were sub-adult dingoes.

Conclusions
• The high level of tourist activity on Fraser Island has influenced the behaviour of dingoes. Dingoes behave differently in areas with high levels of human activity than they do ‘naturally’, although the significance of this is unknown. The way in which they respond to people is affected by the way that people behave towards them, and this knowledge can be used to educate people about how to
minimise the danger of being attacked. Dingoes seem to be equally likely to display aggressive behaviour to humans at different times of the year, although adult dingoes may be most dangerous during the mating season, and female dingoes most dangerous during the pupping season. Habitation of dingoes to people and human food sources appears to be the underlying cause of the observed changes to dingo behaviour, and may also be resulting in the aggressive responses of dingoes to certain human behaviours.

**Recommendations**

**Management**

- Managers should attempt to monitor what unnatural food sources are available to dingoes in the townships and resorts, so that action may be taken to remove them.
- A dingo incident survey should be implemented, in order to determine what associations there are between aggressive incidents and dingo characteristics, and to monitor the timing, location and frequency of aggressive incidents.
- Education campaigns should continue to highlight the dangers of feeding dingoes, both directly by handouts and indirectly by not storing food and garbage appropriately.
- Interpretive material provided to visitors of Fraser Island should advise that people do not turn and walk or run away from dingoes, as this may trigger an aggressive or excited response.

**Research**

- Identify the impacts of the behavioural changes associated with human presence. These might include changes to social interactions and impacts on dingo health and the health of prey populations.
- Develop a more comprehensive description of dingo behaviour. Future behavioural research should be carried out with a larger and more representative sample size and observations should be made at all times of the day, a in a variety of environments.
- Examine the responses of dingoes to human behaviours in further detail.

Fleur O’Neill, Sam Barnard and Diane Lee

Objectives of Study

The Dolphin Discovery Centre (DDC) in Koombana Bay, Bunbury, Western Australia is a non-profit organisation focused upon interaction with the wild and habituated bottlenose dolphins (*Tursiops spp*) where tourists are able to interact with the dolphins in a variety of ways including wild dolphin swim tours, boat-based dolphin watching tours and a shore-based area where dolphins are hand fed a small offering, known as the Interaction Zone. This study focuses on the examination of tourist satisfaction to determine if management changes the tourists’ behaviour in a positive way that results in satisfaction. In order to do this, the study aims to:

- examine visitor perception of wild dolphin characteristics and wild dolphin interaction before and after the tour;
- analyse visitor motivation, expectation and satisfaction levels with various components of the swim tour, and
- assess the effectiveness of, and satisfaction with, the management strategies (DDC Code of Practice) used to reduce the potential for tourist impacts upon dolphins. Education and interpretation form part of the management and are therefore examined in detail.

Methodology

To conduct the study, both pre-swim and post-swim surveys were developed and 223 wild dolphin swim tour participants were surveyed during the summer months of February to April 2000.

Key Findings

- The majority of swim tour participants were female (60%), aged between 12 and 76 years old with an average age of 31. Most participants were from overseas (60%) and 23% of Australian visitors coming from origins outside of Western Australia; only 2 participants (.9%) regarded themselves as being local to the region.
- Overall tourist satisfaction was high, with nearly 80% of participants saying they definitely or most likely would return. Various aspects contributed to satisfaction especially the opportunity to see dolphins and obtain a close up view of dolphins.
- Survey results show a high level of tourist satisfaction with the DDC management procedures. This was surprising given results from pre-swim surveys that demonstrated people’s distorted perceptions of wild dolphins, and the high expectations they have about swimming with these wild animals.
- Results show that specific guidelines within the Code of Practice known as Minimal Impact Procedures were effective in reducing the tourist impacts (or presumed impacts as it is unknown exactly how swimmers impact dolphin populations) and successful in achieving tourist satisfaction. After the tour approximately 15% of participants admitted they would have tried to touch dolphins if management strategies had not been in place.
- It is assumed that education, which interpreted management procedures prior to swimmers entering the water, was somewhat responsible for participant acceptance of and overall satisfaction with the Code of Practice. Results show that 80% of tourists said they had been satisfied to very satisfied with the procedures used to prevent touching of dolphins.

Recommendations

The principal recommendations of this study are as follows:

- To improve expectations and satisfaction, factual and accurate information about wild dolphins must be provided. Education assists understanding that dolphins are wild animals, and sightings along with the dolphins’ interest in humans, cannot be guaranteed.
- DDC wild dolphin swim tour operators must continue to interpret guidelines and educate people about the potential impacts that swimming can have on the dolphins. This will aid compliance with management practices, and possibly assist future wildlife interactions, independent of the DDC wild dolphin swim tours.
- Written in conjunction with this Technical Report is an industry focused Best Practice manual focused specifically on the procedures of dolphin swim-tour operations. This manual is based on the ANZEC Best Practice guidelines also outlined in this report, and provides specific guidelines based on the principles of Best Practice in sustainable ecotourism with a strong focus on education, visitor satisfaction and safety. An educational video has also been produced from results of surveys and has been used by the DDC during wild dolphin swim tours.
Objectives of Study

This Best Practice Industry Manual was produced for the purpose of providing specific guidelines for tour operators during the operation of dolphin swim tours. This Manual was also produced in conjunction with a Technical Report entitled ‘Best Practice and Interpretation in Tourist/Wildlife Encounters: A Dolphin Swim Tour Example’ (Report 25) which consists of literature and survey-based studies relating to ecotourism, best practice, education and interpretation, marine mammal tourism and dolphin swim tours. The Technical Report that accompanies this Best Practice Manual focuses on a particular site where dolphin swim tours occur, that place being the Dolphin Discovery Centre (DDC) in Bunbury, Western Australia.

The aim of the Manual is to provide operators with a base line example of Best Practice procedures. It is anticipated that the manual will be examined, applied and evaluated in each case where it is used to aid the operation of dolphin swim tours.

Methodology

This Manual has involved extensive input from the tourism community through managers, operators, researchers and tourists. A version of the manual has been operational at the DDC since the initial licensing of swim-with-the-dolphins tours in 1999.

Recommendations

This Best Practice Manual for swim tours involving dolphin–human interaction has been compiled using the following principles of best practice. These five principles are outlined in the Technical Report, and in this instance they are used with specific reference to dolphin swim tour operations:

Define
- Clearly define interpretation and education objectives;
- Services required—catering, medical, snorkelling equipment, assistance in and out of the water;
- Mission statements and broader corporate objectives; and
- Incorporate all relevant community, customer, environmental, heritage or scientific values into goals.

Develop
- Integrated and documented procedures for identifying programs, messages, target audiences and approaches to be used—guidelines for set up, running and pack up of swim tour procedures are outlined in this manual; and
- Setting ‘Key Performance Indicators’—recording behaviour of staff, tourists and dolphins during swim tour; recognising limits and following strict procedures when these limits are reached.

Deliver
- Recognise the value of in-house staff in delivering interpretation and education; using Performance Plans after assigning roles and responsibilities for all stages of education and interpretation.

Evaluate
- Evaluate performance of education and interpretation services applying ‘Key Performance Indicators’ using a suitable method and systematic procedure. Note behaviour of staff members, tourists and dolphins.

Support
- Having documented procedures to support communication, evaluation, data analysis and performance reporting, while identifying, training, monitoring and maintaining core skills for the interpretation and education service levels.
Wildlife Tourism

CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE

Report Twenty-Seven: A Biological Basis for Management of Glow-Worm Populations of Ecotourism Significance (2001)

David J Merritt and Claire Baker

Objectives of Study

The impetus for this study was a concern from Qld EPA personnel that the increasing tourist interest in Natural Bridge could inadvertently impact on the glow-worms. The major goals for this project were to:

- provide an understanding of the life cycle and biology of the local glow-worm, Arachnocampa flava
- provide a basis for ecological management of the glow-worms of Natural Bridge and other sites in liaison with QPWS
- provide biological input to assist in the management of visitation levels (both commercial and public) to Natural Bridge.

Methodology

The A. flava life cycle was documented from field observations and laboratory cultures. Potential prey items of A. flava larvae were determined using adhesive traps placed over glow-worms and over adjacent areas free of glow-worms. Sensitivity to disturbance was tested using torch light exposure, ability to recolonise after disturbance and effects of tourist visitation levels. Experiments were conducted at three glow-worm sites: 1) Natural Bridge, 2) near Tallanbana picnic area, Springbrook Plateau and 3) an unmarked site on the Springbrook–Mudgeeraba road, approximately 20 km from Mudgeeraba.

Key Findings

- Ecology and life cycle investigations—Climate is primarily responsible for the fluctuations in numbers glowing; tourist impacts are minor in relation to the impact of climate; glow worms opportunistically expand their range during favourable conditions and contract to areas of protected humid microclimate during adverse conditions; and some colonies, though small, are in prime habitat and serve as a focus for adult production and colonisation of adjacent areas.

- Feeding Habits and Prey Species—Small flying Diptera (includes flies, mosquitoes, midges, etc.) were the most commonly caught arthropod on glow-worm traps. Similar numbers of Collembola (springtails), Hymenoptera (bees and wasps), and Coleoptera (beetles) were caught on glow-worm and control traps, suggesting these groups are not specifically attracted to bioluminescence.

- Sensitivity to disturbance—exposure to torch light was shown to cause light dousing in larvae within approximately 2 minutes. Bioluminescence returns over a period of 1 to 10 minutes.

- Recolonisation—results from this study and studies of the New Zealand glow-worm suggest that females are attracted to lay eggs in and around existing colonies. Thus the complete elimination of a colony means that it is unlikely to be reformed until very favourable conditions lead to an expansion of nearby colonies. If drastic colony reduction occurs at sensitive sites such as Natural Bridge then physical relocation of larvae from smaller adjacent colonies could accelerate recolonisation by attracting ovipositing females.

- Visitation levels—current visitation levels do not appear to have an adverse impact on glow-worms. Greatest tourism-related risk is from irresponsible behaviour by tourists. Guided tours, though constituting larger numbers of tourists, appear to expose the glow-worms to low risk because of the education and supervision provided by tour guides.

Recommendations

The principal recommendations of this study are as follows:

- Provide pamphlets or interpretive displays to tourists and operators giving specific information on the glow-worm life cycle and the effects of torch light on larval bioluminescence, so dousing of larval lights does not affect following tour group satisfaction levels.

- Photographic monitoring to continue at Natural Bridge, especially if visitation levels or times are changed.

- A climate station be established to provide more accurate data for assessing climate impacts on population.

- Smaller colonies in adjacent creek banks should be protected by keeping pedestrian access to built paths.

- A watch is kept for fungus disease in glow worms. The biggest risk is that tourists who have recently visited Waitomo caves could carry spores of the endemic NZ fungus to Natural Bridge.

- Because prey items are diverse it is difficult to pinpoint any particular habitat for conservation of prey species. The larvae of Diptera primarily require moist leaf litter, decaying organic matter, or semi aquatic habitats. Thus we recommend the continuation of management procedures designed to: protect stream-banks downstream of the cave, perhaps by restricting access; protect stream-banks under the overhang; and emphasise to tourists the importance of keeping to paths to prevent disruption of the leaf litter biota.

Elizabeth Hawkins and Don Gartside

Objectives of Study
Focusing on a population of inshore bottlenose dolphins in the Byron Bay area, northern New South Wales, the aims of this study were to:
• assess localised human usage patterns in the marine environment and determine the occurrence of human–dolphin encounters
• compare attributes of the acoustic emissions and behaviours of a population of inshore bottlenose dolphins exposed to relatively low levels of dolphin tourism activities from motorised vessels with those of others reported from Australia and worldwide
• evaluate the adequacy of existing regional, state and federal management regimes in Australia for dolphin–human encounters from vessels.

Methodology
Observations of dolphins were made from land-based and vessel-based platforms between 2003 and 2006 in the Byron Bay region, northern New South Wales (Brunswick Heads to Ballina to 5nm seaward). The behaviour of dolphins, their location and pod composition were recorded; photographs of individual dolphin dorsal fins and acoustic recordings were also made.

Key Findings
A summary of the major findings from this study are that:
• The dolphins of the Byron Bay area display each of the four behaviour states (travelling, milling, socialising and feeding) for similar proportions of time to many other populations reported in the literature. There were some exceptions, particularly with the occurrence of travelling and milling behaviours in areas with higher numbers of vessel encounters. However, there was no consistent pattern found of differences of behaviours between areas with high vessel and human activities and that of Byron Bay, an area with relatively low levels of vessel and human activities.
• Short-term adaptive changes in the behaviour and acoustics of dolphins in response to the presence of different types of vessels, the behaviour of the vessels and their proximity, are evident in the Byron Bay population. The changes in the behaviours of dolphins caused by vessels identified were similar to those identified by previous research areas with different levels of vessel activities. These behaviours were referred to as ‘symptomatic disturbance behaviours’ of dolphins. They included alterations to the group cohesion of the dolphins. Some changes in the acoustic emissions were similar to those reported from other studies, for example, changes in the repetition rate of whistles during a vessel encounter. This study also found that the whistle repetition rate and the acoustic parameters of whistles were influenced by both the type and behaviour of vessels in close proximity to the dolphins.

Recommendations
The principal recommendations of this study are as follows:
• Recommendations for improvement of regional and federal dolphin-watching guidelines are outlined. Recommendations included total time vessels are permitted within 100m of dolphins and provisional distances for pods with young calves. The introduction of a permit and levy system for commercial vessel-based dolphin watching operators is recommended. Practices for multiple vessel approaches to dolphins are outlined.
• Localised improvement of guidelines included vessel-free zones for motorised vessels and no-approach times in core habitat areas for resident social groups of dolphins.
• Based on this comprehensive study of populations of wild dolphins, concerns are beginning to emerge about the developing impacts of wildlife tourism and general human impacts involving use of the marine environment on the social and especially communicative behaviour of the dolphins.
• It is clear that dolphins are responding to humans with changes in their behaviour (as reported in other studies). The long-term consequences of these changes on survival of this population of dolphins are not yet clear.

Darryl Jones and Thomas Nealson

Objectives of Study

Bird watching is one of the fastest growing recreational activities in the Western world. Although apparently benign when compared with consumptive forms of wildlife recreational activities, bird watching has been shown to impact negatively on wildlife populations. Although interest in the actual impacts of recreational activities (including bird watching) on wildlife has increased markedly in recent years, recreational activities in general are well appreciated but poorly understood. The two primary aims of the study were to:

- compare avian community structure (in terms of species richness and numbers of individuals) at different levels of disturbance
- compare disturbance distances of selected species and groups of species at different levels of disturbance.

Methodology

The long-term and short-term responses of birds to the activities typically associated with bird watching were studied at six locations (3 in eucalypt habitat and 3 in rainforest habitat) in southeast Queensland, during January to March 2002. At each site, three levels of disturbance were determined, based primarily on the amount of human activity. The structure of avian communities was determined using fix-width transects and point counts.

Key Findings

- The mean number of species in undisturbed sites was significantly greater than both semi-disturbed and disturbed sites in both rainforest and eucalypt areas. For the rainforest sites, the largest group of species were those found commonly in all disturbance levels. Surprisingly, many of these species were equally abundant in all disturbance levels. In contrast to the rainforest sites, the largest group of species associated with eucalypt sites were found only in the disturbed sites.
• Large non-ground species: There were no differences in the first three mean disturbance distances for any disturbance level but distance 4 (the distance the bird moved away from the intruder) was significantly longer in undisturbed sites.

• Small non-ground species: In rainforests, the four mean disturbance distances were significantly different for all disturbance levels. For eucalypt species, the results were similarly strong.

• Large ground species: All comparisons by disturbance level were very significantly different.

• Small ground: All but distance 1 were found to be significantly different for rainforest species but not for eucalypt species.

• The large number of relatively common species found at similarly high numbers in sites at each disturbance site is of particular interest. Although some of these species were clearly more abundant in the disturbed sites due to the attraction of anthropogenic food resources (most obviously crimson rosella, pied currawong, and laughing kookaburra), most were not. Possibly, the most unexpected result was the extent to which some species (e.g. Lewin’s honeyeater, green catbird, black-faced monarch) appeared unaffected by disturbance level, occurring at almost identical numbers at each level. Almost every aspect of this study confirmed that birds were significantly influenced by the activities of humans; compared to those living in completely undisturbed locations, birds living in locations experiencing both high or moderate levels of disturbance were characterised by significantly lower species richness, lower numbers of individuals, and greater disturbance distances. Importantly, according to the various variables measured here, there appeared to be virtually no difference between the two levels of disturbance as employed in this design. This would seem to indicate that birds respond similarly to a range of human activities.

Recommendations
The principal recommendations of this study are as follows:

• These results provide further confirmation that even apparently benign activities such as bird watching can have a marked effect on bird populations. They also support observations that birds will avoid humans if possible and prefer undisturbed over disturbed habitats.

• Experimental studies are required to assess the potential effectiveness on different ‘buffer distances’ in a wider variety of habitat types.

• Future work is required to assess long-term impacts of bird watching on reproductive and foraging ecology in areas of differing levels of disturbance.
Wildlife Tourism: challenges, opportunities and managing the future

Ronda Green and Karen Higginbottom

Objectives of Study
This report reviews the mechanisms by which wildlife tourism can have negative effects on wildlife and the management practices that can be used to mitigate these effects. The principle aims of this report are:

• review the literature (both Australian and overseas) for demonstrated kinds of negative effects of wildlife tourism on wildlife
• identify other negative effects on wildlife that may result from wildlife tourism and related activities in Australia
• identify areas of research most urgently needed to determine negative effects
• offer some basic guidelines for management techniques and processes to minimise negative effects while continuing to cater to visitor satisfaction and other needs of the tourism industry
• identify areas of research most urgently needed to elucidate management options to minimise such effects.

Methodology
The principal methodology used for this report was extensive literature research, focusing on published literature from around the world and including some unpublished Australian documents provided principally by government sources. A semi-structured telephone interview was used to obtain information from seven key staff from conservation agencies.

Key Findings
The negative effects of wildlife tourism and related human activities on wildlife can be grouped into three main categories: (1) disruption of activity, (2) direct killing or injury, and (3) habitat alteration (including provision of food). The extent of negative impacts on wildlife can vary enormously depending on species, life-cycle stages, habitats and other variables:

• Disruption of activity—examples of disruption of activity include spotlighting, noisy activities, and the approach of tourists towards animals that are foraging or caring for their young. When a human disrupts the activities of wildlife, the response will be either avoidance behaviour where the wildlife will flee or hide, habituation where there is a learned lack of response to humans to the point of seeming to ignore their presence, or attraction—usually in expectation of food. Far too little is currently known about the effects of hand-feeding and spotlighting, and the effects of tourism activity generally on shy cryptic species.

• Direct killing or injury—death or injury can occur as the result of unintentional events such as road accidents, or from intentional acts of hunting, fishing and collecting. These require careful regulation formulated under advice from wildlife ecologists familiar with the practices and the animals in question. The unintentional trampling of wildlife (e.g. eggs of ground-nesting birds), deliberate killing for safety reasons (e.g. snakes), the use of insecticides for tourist comfort, and the burning of forest understorey for firebreaks can also directly cause wildlife mortality.

• Habitat alteration—occurs when land is cleared or modified to make room for the infrastructure needed for tourism activities. Changes to habitat also occur from off-road vehicle damage and humans trampling on vegetation. Intentional and accidental provision of food can also be seen as a form of habitat alteration. Some hand-fed animals may become aggressive and a danger to tourists.

Recommendations
Management processes that identify potential and actual negative effects and implement actions to correct them are critical. Monitoring of wildlife that could be affected by wildlife tourism activities should incorporate well established statistical principles where possible. Decision making about whether a wildlife tourism venture should proceed or what management should be put in place requires:

• recognition that there are few ‘pat’ answers and that different circumstances often require different solutions
• logical dissection of different types of effects and appreciation of the complexity and interaction of effects on wildlife and habitats
• recognition of conservation, animal welfare and ethical arguments; and, in some cases further research.

Monitoring should form part of the management of all wildlife tourism ventures and activities. In circumstances where there is cause for concern about potential negative effects but wildlife tourism ventures are permitted to proceed or continue, it is especially vital that sound monitoring and management practices are in place. Recommended management and monitoring techniques are detailed in the study, including a need for a user-friendly guide to wildlife monitoring for Australian conditions and specifically relating to the tourism industry.
Karen Higginbottom, Chelsea Northrope and Ronda Green

Objectives of Study
This report reviews the ways in which wildlife tourism can have positive effects on wildlife and their habitats, discusses the limited evidence to which these are currently being realised and makes recommendations to enhance such effects. While this report covers the full scope of wildlife tourism, the principal focus is on non-consumptive wildlife tourism involving free-ranging animals.

Methodology
Information was obtained via a review of international and Australian published literature, and some Australian ‘grey’ literature, semi-structured telephone interviews with key staff of conservation agencies and unstructured, face-to-face and telephone interviews with selected operators known to be making contributions to conservation. A database of 381 promotional brochures produced by wildlife tourism operators was examined for any information relating to contributions to conservation or animal welfare.

Key Findings
In principle, wildlife tourism can have various positive effects on wildlife species and their habitats. However, to date we know much more about negative effects of wildlife tourism on wildlife; very little systematic research has been conducted on positive effects. These positive effects work through four main mechanisms: (1) financial contributions, (2) non-financial contributions, (3) socio-economic incentives, and (4) education. The contribution may be to conservation, animal welfare, or both. The key findings from the study are:

- Nature-based (including wildlife) tourism in protected areas probably imposes net costs in terms of its direct impacts on the natural environment at the tourism sites involved. These costs are at least partially offset, or perhaps even outweighed, by the incentive that nature-based tourism creates for retention and acquisition of such areas.
- Government-owned wildlife tourism attractions and activities currently provide significant financial input into conservation.
- Wildlife tourism appears to have led to some small-scale shifts towards more conservation-oriented land-use and wildlife management practices outside of protected areas.
- The nature and magnitude of costs and benefits of wildlife tourism to wildlife will vary according to many factors such as type of tourism activity, vulnerability of the wildlife population, effectiveness of interpretation, and conservation ethic of the operator.
- Wildlife tourism is associated with significant practical contributions to conservation. It seems likely that wildlife tourism in Australia probably has a small net positive effect on conservation at present, but this cannot be concluded with any certainty.

Recommendations
In addition to further research, the following are seen as priorities to enhance the positive effects of wildlife tourism in Australia:

- Government agencies, conservation NGOs and tourism industry bodies should work together to strategically develop mechanisms for enhancing links between wildlife tourism and conservation. The possibility of initiating a national strategy, perhaps based on adapting the US Watchable Wildlife Program, should be investigated.
- Governments should: support organisations that use tourists as volunteers in conservation programs; support wildlife tourism attractions becoming actively involved in research on their target species; encourage shifts from traditional agriculture to wildlife or nature based tourism on private land in cases where this is economically viable; recognise the substantial economic gains to Australian society resulting from tourism based on nature, including wildlife, and thus increase their levels of funding for protected areas; continue to recognise wildlife conservation as a public good and invest in it accordingly, irrespective of financial benefits; and should make greater use of economic instruments to promote conservation in association with wildlife tourism.
- Opportunities for development by government conservation agencies of additional high quality, high yield attractions based on wildlife should be investigated as a way to generate revenue for conservation.
- Opportunities for increased economic value adding at protected areas and government-run wildlife tourism attractions should be explored. This must be done in a sensitive way that does not detract from the natural character of such attractions.
- Wildlife tourism operators should be encouraged by suitable government incentives to engage in appropriate forms of conservation management, monitoring and research and donate funds for conservation purposes and to promote this in their marketing.
- Mechanisms for encouraging tourists to make donations to conservation should be further developed.
Wildlife Tourism
CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE

Zoë Magnus, Lorne K Kriwoken, Nicholas J Mooney and Menna E Jones

Objectives of Study
This project aims to evaluate techniques to reduce wildlife roadkill and discuss suitability and implementation of these methods in Tasmania. The methods evaluated were: signage, ultrasonic whistles, escape routes, underpasses, overpasses, table drain management, platypus crossings, wildlife reflectors, lighting, light-coloured road aggregate and public education.

Methodology
A review was conducted to determine previous research on these mitigation methods, and whether they were suitable for Tasmanian conditions. Some methods were deemed impractical due to cost (lighting, light-coloured road aggregate), and some methods had been or were being studied in detail by other groups in Australia (reflectors, underpasses and odour repellents). Methodologies varied for obtaining information on each technique, ranging from acoustic testing, to site assessment, field testing and sign evaluation.

Key Findings
Several measures were identified as being likely to reduce wildlife roadkill and/or decreasing visitor distress on account of roadkill. These are: wildlife signage, escape routes, table drain (ditch) management, platypus crossings, underpasses and potentially odour repellents. Ultrasonic whistles, wildlife reflectors and lighting have doubtful application, at least in Tasmania, although managers should follow up on current research in these areas. Light-coloured road surfacing and use of ‘driving lights’ remain as possibilities for further trials. In terms of further research, priority should be given to research furthering our understanding of roadkill events and sites, and wildlife behaviour in reaction to oncoming traffic. This information will better equip research into wildlife mitigation measures.

These results are useful for road management authorities, environmental management authorities, and consultants who provide advice on mitigation of environmental impacts of road developments. This document will enable better roadkill mitigation, which will result in an improved experience for visitors to Tasmania.

Recommendations
Various recommendations relating to the mitigation methods of this study are as follows:

• ‘Post-installation’ monitoring is needed to clarify whether vehicle speed has been reduced by the presence of the signs. This should be done at the same time of year as the ‘pre-installation’ monitoring to take into account seasonal variation in traffic speeds.

• Ultrasonic whistles should not be considered as a genuine roadkill reduction method, but the use of ‘driving lights’ and car horns should be trialled as roadkill reduction methods.

• Installation of the canopy crossings was relatively quick and cheap, and it is recommended that they are installed at other locations where ringtail possum roadkill is frequent, particularly if the site is more conducive to such a construction.

• Escape routes should be considered as one of the most useful and imperative measures, especially when new roads are being built or roads are being upgraded, widened or sealed.

• Research should be undertaken into the efficacy of escape routes, probably by observations of animals’ response to vehicles in places with natural escape routes and barriers, rather than trialling purpose-built escape routes.

• In areas where roadkill of herbivores is an issue, herbaceous roadside vegetation should not be slashed or mown, as this creates new growth which is attractive to herbivores.

• Table drain management should be considered where the roadkill problem is perceived to be related to wildlife being attracted to the road by food and water resources which are present due to the road design (e.g. water in table drains and associated fodder).

• Existing data should be reviewed and analysed in order to deepen understanding about the reasons for platypus avoidance of culverts and potential solutions. The existing information should also be used together with interviews, as part of a state-wide survey of black spots, in order to determine which sites should be retro-fitted with platypus roadkill mitigation measures.

• Small underpasses (consisting of 300 to 450 mm diameter culverts and wing fencing) should be installed in areas where roadkill of smaller mammals (e.g. Tasmanian devils and smaller) is a problem. It is probably not practical to use underpasses for larger wildlife in Tasmania due to the expense of constructing large underpasses.

Karen Higginbottom, Kelley Rann, Gianna Moscardo, Derrin Davis and Sue Muloin

Objectives of Study

Wildlife tourism is tourism based on encounters with non-domesticated animals in either their natural environment or in captivity. It includes both non-consumptive forms of wildlife tourism, such as viewing, photography and feeding; and consumptive forms, such as hunting and recreational fishing. This report aims to achieve the following with respect to wildlife tourism in Australia:

- describe the current status of the industry
- identify key issues and obstacles relating to development and sustainability
- identify potential unrealised opportunities
- identify key gaps in research
- create a basis for conceptual and practical links between diverse disciplines and stakeholder groups.

This is the central document for the wildlife tourism status assessment project, which in turn comprises the first stage of a large inter-disciplinary research program of STCRC on wildlife tourism. Part I of the report provides a descriptive overview of wildlife tourism in Australia, placing it in the context of international tourism and wildlife tourism. Part 2 synthesises information from a series of individual status assessment reports on different aspects of Australian wildlife tourism, presents findings of stakeholder consultation processes and makes recommendations for the future directions of Australian wildlife tourism.

Methodology

Several components were combined in compiling this report:

- synthesis of information provided by 13 individual status assessment reports (included within this snapshot). These reports dealt with different disciplinary components of wildlife tourism (visitors, economics, wildlife, and host communities) and with different sub-sectors (such as birdwatching, tourism based on free-ranging marine wildlife, captive wildlife tourism and fishing)
- compilation of a database of wildlife tourism enterprises and activities in Australia
- stakeholder consultations. These comprised a series of regional workshops of wildlife tourism stakeholders, a workshop of the research program steering committee, and interviews with key staff from government tourism and conservation agencies.
- literature review and professional judgement. The contextual material provided in this report is based mainly on literature reviews, supplemented in some cases with judgements based on the authors’ combined professional knowledge.

Key Findings

The current status of wildlife tourism in Australia

There are at least 1,196 enterprises that include wildlife as a planned component of the experience they offer to tourists. The largest numbers of operators of organised wildlife tourism are those running nature-based tours, and about 65% of wildlife tourism activities include wildlife as only one component of a more generalised experience. With eight million visitors per year, zoos and wildlife parks probably attract by far the greatest number of visitors. In addition, an unknown but probably very large number of visitors experience wildlife as independent travellers, often in protected areas. Kangaroos and their relatives seem to be the wildlife-group that features most often in wildlife tourism activities; kangaroos and koalas are the most popular among international visitors. Principally because of the diversity of sub-sectors involved, there is no overarching organisation or coordination of wildlife tourism in Australia. Instead there are a wide range of stakeholders covering tourism and wildlife-related interests.

The most critical obstacles that the Australian wildlife tourism industry needs to overcome to ensure its sustainability are:

- limited capacity within the industry to deliver high quality wildlife tourism experiences and financially sustainable businesses
- the risk of negative effects of wildlife tourism on wildlife and habitats, if current monitoring and management are not improved
- low levels of communication, coordination, strategic direction and government support for wildlife tourism
- lack of research in a range of critical areas.
Judging by international trends, there may be opportunities in Australia for:

- increasing the level of specialisation in wildlife tourism products
- including new species and environments
- increasing and improving the use of interpretation
- increasing the use of technology to facilitate wildlife viewing
- creating more experiences that combine captive and free-ranging wildlife tourism
- building further synergies between tourism and conservation within wildlife tourism experiences.

**Key gaps in research**

There are huge gaps in our knowledge of many aspects of wildlife tourism, especially in Australia. This is a major impediment to the sustainability and development of this industry. Probably the most critical research gap is in relation to understanding of demand-side issues. A lack of research was also identified regarding product development opportunities, lack of information on the economic value of wildlife tourism and its various sub-sectors and critical success factors for wildlife tourism enterprises.

**The need for a holistic, coordinated approach to wildlife tourism**

Sustainability of wildlife tourism requires simultaneous attention to visitor satisfaction, visitor education, financial viability of individual businesses, economic benefits to society as a whole, impacts on wildlife and their habitats, and social effects on host communities.

There is support among stakeholders for developing higher levels of communication and cooperation, and for a coordinated and strategic approach to sustainable development of wildlife tourism, particularly with regard to marketing. This status assessment project has begun the process of facilitating communication among wildlife tourism stakeholders, but it is the responsibility of governments and industry to drive any future process of coordinated strategic development of wildlife tourism.

**Recommendations**

**Recommended research priorities to support sustainable development of wildlife tourism**

**Understanding Visitors**

- Determine size and nature of demand for various forms of wildlife tourism
- Determine visitor expectations and reactions in relation to existing wildlife tourism experiences, especially in relation to satisfaction and factors that influence these
- Determine variability between market segments in the above
- Assess visitor responses to different approaches to visitor management designed to minimise negative effects on wildlife

**Effects of Wildlife Tourism on Wildlife and Management of these Effects**

- Determine the magnitude and nature of negative effects (if any) on wildlife for high risk species and situations, and factors that influence these
- Assess the relative effectiveness of different management approaches in minimising negative effects and maximising positive effects of wildlife tourism on wildlife
- Develop tools that can be used to more effectively monitor and manage effects of wildlife tourism on wildlife

**Economic Value**

- As far as feasible, determine the total economic value of various forms of wildlife tourism in Australia

**Business Operation**

- Determine critical factors influencing business success in wildlife tourism
- Identify major areas of deficiencies in wildlife tourism business performance
- Assess effectiveness of current marketing of wildlife tourism and identify areas for improvement

**Opportunities for New Product Development**

- Develop a framework for investigating potential for, and developing new wildlife tourism products
- Investigate feasibility of specific product development ideas
Policy and Legislation
- Critically assess policy and legislative environment for wildlife tourism in consultation with stakeholders
- Evaluate the performance of wildlife watching initiatives in North America and derive lessons applicable to Australia

Recommendations for future directions of wildlife tourism in Australia
- Encourage innovation and adoption of world’s best practice in product development, supported by adequate research
- Raise standards of product quality
- Improve effectiveness of marketing
- Build industry capacity to deliver high quality wildlife tourism experiences and be financially successful
- Improve and expand techniques for minimising negative effects and maximising positive effects of wildlife tourism on wildlife
- Make regulation more operator-friendly while still achieving goals for high industry and environmental standards
- Improve effectiveness of accreditation programs
- Increase levels of government support for sustainable development of wildlife tourism
- Increase the role of Indigenous people and issues in wildlife tourism
- Build communication channels between wildlife tourism stakeholders
- Initiate coordination and strategic development of wildlife tourism
- Provide and facilitate funding for research to address key priorities
Wildlife Tourism
Challenges, Opportunities and Managing the Future

Ronda Green, Karen Higginbottom and Chelsea Northrope

Objectives of Study
This report aims to present information on different kinds of Australian wildlife that has a bearing on their suitability for use in tourism. This should assist in identifying suitable species for further development of wildlife tourism products, encourage sustainable practices in such development, and discourage inappropriate development. The core of this material is presented in spreadsheet format and contains an extensive classification of Australian wildlife in relation to tourism.

Methodology
The majority of the information in the report and spreadsheet is based on literature or from informal discussions with zoologists, conservation managers and tourism personnel. However much is also at this stage necessarily based on professional judgement from background experience with tourists, animals and various kinds of ecological research. Factual information about the distributions, sizes and other features of animals were taken from a number of standard references on various taxa, conservation status and dangerous animals.

Key Findings
- The spreadsheet is easily accessible within the Microsoft Excel program and is available on CD. The file can be used in various ways and it is suggested that copies are made which can be cut and sorted in various ways to suit the needs of the user.
- Relevant information on major categories (terrestrial mammals, birds, reptiles, amphibians, terrestrial invertebrates, freshwater and marine fauna) is presented, highlighting opportunities and constraints on wildlife tourism development within each category.
- Information is presented on 190 categories of wildlife including: individual species (e.g. emu, bilby); taxonomic groups (e.g. kangaroos, tree frogs); categories based on features of interest or concern to tourists (e.g. edible fish, dangerous snakes); or remaining elements of a subdivided group (e.g. 'other insects').
- The spreadsheet provides information on which species might be of particular interest to tourists, where and how they might be found, as well as possible constraints on their use in tourism, such as difficulty of access and shyness of animals. It also addresses conservation issues by providing information on the vulnerability of wildlife and their habitats, and how this varies seasonally.
- The spreadsheet is broken down into the following major categories:
  - positive appeal to tourists—appearance, behaviour, uniqueness and fame
  - negatives as perceived by most general tourists—perceived danger, disgust and nuisance
  - practical issues of using for tourism—distribution, habitat, ease of finding, ease of observing and approachability
  - environmental management issues—conservation status, endemism, how widespread, tourist impact on animals, tourist impact on habitat and actual danger to humans.

Recommendations
The spreadsheet is not intended to be a final product, but is a starting point to stimulate feedback. There are several ways in which we anticipate the spreadsheet will be useful to both tour operators and conservation managers:

Tourism operators
- We recommend it be utilised when planning a new tour or expanding an existing one, and when attempting to make tours ‘greener’.
- Tourism operators can seek ideas on how to utilise the wildlife opportunities in his/her locality. Even operators and guides who prepare no structured interpretation will probably find many ideas for topics in case of unpredicted sightings or tourist questions.
- Being able to predict some degree of common visitor reactions to various animal groups is useful. A knowledge of which animals are likely to have immediate appeal can assist in marketing and also in attracting visitor attention to ecological adaptations to Australia’s climate, conservation issues, animal behaviour or other themes by using these species as attention-grabbers.

Conservation managers
- We recommend it be used both when planning interpretation programs and when compiling environmental advice for local operators.
- Environmental managers, ecodge managers and tour operators can plan activities, buildings or other facilities that do not impact heavily on wildlife or their habitats, the Environmental Management section of the spreadsheet will be a useful tool to assist with this.
Karen Higginbottom (ed.)

Overview
This is the first comprehensive volume on the subject of wildlife tourism, written by experts in the field and drawing on a wide range of disciplines. It covers the full scope of wildlife tourism, including zoos, wildlife watching, hunting and fishing. It draws on research from a range of academic disciplines and is intended for a wide audience including academics and students in the disciplines of tourism and wildlife management, professionals working in government tourism and conservation agencies and members of tourism industry associations. It will also be of interest to motivated nature and wildlife tourism operators and general readers, particularly those with an interest in contemporary wildlife issues. The focus of the book is international, including applications to both more-developed and less developed countries. Its aim is to provide information, ideas and suggestions to help facilitate triple bottom line sustainability of wildlife tourism, and beyond this, to enhance its net benefits to society (including wildlife).

The recent Wildlife Tourism Research program, conducted and largely funded by STCRC, represents the first major coordinated attempt to bring together a multi-disciplinary team of researchers to address key issues in wildlife tourism. Many of the authors of the present volume were involved in this research program, and these chapters build upon that research.

This book illustrates the need to integrate knowledge of commercial tourism with that relating to the fields of protected-area management, wildlife management and recreation. The recent publication of Manfredo’s (2002) Wildlife viewing: a management handbook reflects the emergence of wildlife viewing planning and management as a fledgling profession, and is an important source of information for parts of this book.

The remainder of this volume consists of three parts. The first provides a descriptive overview of each of the major forms of wildlife tourism. It also discusses key issues impacting on sustainability issues for each of these, and proposes broad future directions for these forms. Chapter 2 deals with wildlife-watching tourism, in both terrestrial and marine environments. Chapter 3 reviews zoos, the component of captive-wildlife tourism that attracts by far the greatest number of visitors (very little is known of other aspects of captive-wildlife tourism). Chapter 4 jointly reviews hunting and fishing tourism.

The second part of the book discusses the role of wildlife (Chapters 5 and 6), host communities (Chapter 7) and economics (Chapter 8) in wildlife tourism, with particular emphasis on the impacts of wildlife tourism on each of these elements of the wildlife tourism system. The third part deals principally with planning and management of wildlife tourism. It discusses how to plan and manage individual businesses (Chapter 10) and how to mitigate impacts of wildlife tourism on wildlife (Chapter 11). Current knowledge about the market for wildlife tourism is reviewed in the context of implications for planning and management of wildlife tourism (Chapter 9). Interpretation is discussed in relation to its role in visitor enjoyment and influencing visitors in relation to conservation (Chapter 12). The concluding chapter draws together information from the rest of the book and introduces some integrating concepts and ideas to point to the way forward for wildlife tourism that will bring sustainable benefits to the tourism industry, consumers, host communities and wildlife.
STCRC Wildlife Tourism Research Snapshot

The following 35 research reports were profiled in this snapshot. To access the full technical reports relating to this research please refer to www.crctourism.com.au/bookshop.

Visitors

• An Analysis of the Domestic Wildlife Tourism Market (2007), Fredline
• International Market Analysis of Wildlife Tourism [WT#22] (2001), Fredline & Faulkner
• Kangaroos in the Marketing of Australia: potentials and practice [WT#19] (2001), Hill et al.
• Understanding Tourism Wildlife Interactions: visitor market analysis (2005), Moscardo & Saltzer
• Understanding Visitor Perspectives on Wildlife Tourism [WT#2] (2001), Moscardo et al.

Economics

• Economic, Educational and Conservation Benefits of Sea Turtle Based Ecotourism: a study focused on Mon Repos [WT#20] (2002), Tisdell & Wilson
• Economics, Wildlife Tourism and Conservation: three case studies (2005), Tisdell & Wilson
• Role of Economics in Managing Wildlife Tourism [WT#3] (2001), Davis et al.

The Wildlife Experience

• Assessment of Opportunities for International Tourism Based on Wild Kangaroos [WT#17] (2001), Croft & Leiper
• Birdwatching Tourism in Australia [WT#10] (2001), Jones & Buckley
• Captive Wildlife Tourism in Australia [WT#14] (2001), Tribe
• Evaluation of Organised Tourism Involving Wild Kangaroos [WT#18] (2003), Higginbottom et al.
• Fishing Tourism: charter boat fishing [WT#12] (2001), Gartside
• Rangeland Kangaroos: a world class wildlife experience [WT#16] (2001), Croft
• Recreational Hunting: an international perspective [WT#13] (2002), Bauer & Giles
• Role of Wildlife Icons as Major Tourist Attractions: case studies – Monkey Mia dolphins and Hervey Bay whale watching (2006), Smith et al.
• Tasmanian Wildlife Tourism Inventory: developing an inventory of wildlife viewing opportunities [WT#26] (2002), Kriwoken et al.
• Terrestrial Wildlife Viewing in Australia [WT#9] (2003), Higginbottom & Buckley
• Tourism Based on Free-Ranging Marine Wildlife [WT#11] (2001), Birtles et al.
• Trout Tourism: investigating growth potential for international and national trout tourists to Tasmania [WT#24] (2002), Franklin & Sheen

Host Communities

• The Host Community: social and cultural issues concerning wildlife tourism [WT#4] (2001), Burns & Sofield
• Indigenous Interests in Safari Hunting and Fishing Tourism in the Northern Territory [WT#8] (2001), Palmer

Wildlife Impacts And Management

• Behavioural Responses of Dingoes to Tourists on Fraser Island [WT#27] (2002), Lawrance & Higginbottom
• Best Practice Guidelines for Dolphin Swim Tour Operators: industry manual – a Dolphin Discovery Centre example (2004), O’Neill et al.
• Biological Basis for Management of Glow-Worm Populations of Ecotourism Significance [WT#21] (2002), Baker
• Dolphin Tourism: impact of vessels on the behaviour and acoustics of inshore bottlenose dolphins (Tursiops aduncus) (2008), Hawkins & Gartside
• Impacts of Bird Watching on Communities and Species: long-term and short-term responses in rainforest and Eucalypt habitats (2005), Jones & Nealson
• Negative Effects of Wildlife Tourism on Wildlife [WT#5] (2001), Green & Higginbottom
• Positive Effects of Wildlife Tourism on Wildlife [WT#6] (2001), Higginbottom et al.
• Reducing the Incidence of Wildlife Roadkill: improving the visitor experience in Tasmania (2004), Magnus et al.
• Status Assessment of Wildlife Tourism in Australia: an overview Part I and Part II ($55 each) [WT#1] (2001), Higginbottom et al.
• Tourism Classification of Australian Wildlife (incl Excel spreadsheet) [WT#7] (2001), Green et al.
• Wildlife Tourism: impacts, management and planning (2004), Higginbottom

**STCRC Wildlife Tourism Publications of Interest**

  ——(2005a). What’s new in interpretation around the world, Interpretation, 10(1): 4-7.
Wildlife Tourism

CHALLENGES, OPPORTUNITIES AND MANAGING THE FUTURE


STCRC Online Bookshop

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Wildlife Tourism
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