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The 6th International Congress on Coastal and Marine Tourism

The Spirit of Ubuntu, Connecting Continents, Places and People

CMT2009
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<td>Dr Jeff Wilks (Managing Director of tourism safety. Visiting Professor of Travel Law, Northumbria University, UK)</td>
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<td>Where we have been, where we are, where we will go</td>
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<td>Michael Lück (Auckland University of Technology, School of Tourism and Hospitality)</td>
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<td>To Be or Not To Be: Tourism Development on a South Pacific Island</td>
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<td>Travis W. Heggie (University of North Dakota, Recreation &amp; Tourism Studies Program; Director, Great Plains Injury Prevention Research Initiative; University of North Dakota)</td>
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<td>Suggestions for stretching the coverage of coastal &amp; marine tourism investigations</td>
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<tr>
<td>Marc L. Miller (Department of Marine Affairs, University of Rhode Island, USA / School of Marine Affairs, University of Washington, Seattle, WA, USA)</td>
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</table>

APPENDIX 1: Programme of the CMT2009 Proceedings 327

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INTRODUCTION

After the successful 2007 International Congress on Coastal and Marine Tourism held in Auckland, New Zealand, nobody predicted that the world was about to experience a global recession. There is no doubt that the recession in 2009 has impacted on international travel especially to long-haul destinations such as South Africa. It is indeed a great shame that a number of potential delegates who had submitted excellent papers that were subsequently refereed and accepted, eventually had to cancel their registration due to severe cutbacks on budgets at their respective universities. Even potential sponsors from the private sector and donor funding agents indicated cutbacks on their research budgets and social responsibility programs. The CMT2009 local organizing committee therefore appreciated that many of the international delegates made personal sacrifices and traveled long distances in order to share their knowledge and experience with the people of South Africa during this time of financial hardship. This is a true reflection of the “Spirit of Ubuntu” literally meaning ‘togetherness’.

It has also been important that CMT2009 has strived to integrate the coastal and marine subject into the African context, which is also reflected by the CMT2009 logo. The official logo of the CMT2009 Conference is an adaptation of the CMT2007 conference logo, which reflects the combined theme of marine and coastal creatures. The CMT2009 logo incorporates the basic thematic elements, but captures them in the form of the African continent - reflecting the host site of the conference in Africa. The colors used represent the aquamarine ocean and the golden beach sands of the African coastline.

Nearly 20 years have passed since the first CMT Congress was held in 1990 in Honolulu, Hawaii. Since this early beginning the need for protection of our oceans, “that lovely, living saltwater soup” (Earle, 1995: 30), and the creatures that live within the marine environment have never been greater. Although CMT is a relatively small international congress it provides a unique opportunity for countries with an interest in the coastal and marine tourism environment to interact with acknowledged specialists from around the world. Coastal and marine tourism has been researched for many years but only in the last decade has it really become recognized as a field of study.
In 2004, the Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth became one of the first universities in South Africa to offer Coastal & Marine Tourism as a module in the B Com Honours (Tourism) program. This decision to include CMT as a module in a postgraduate study program at a coastal university was influenced by the Proceedings of the 1999 International Symposium on Coastal and Marine Tourism and the first textbook on the subject, Marine Tourism: Development, Impacts and Management, compiled by Mark Orams PhD which includes a bibliography of over 200 useful references. This is just one small example of the value and impact of the CMT congress when it is hosted in different countries around the world.

It is therefore rewarding that 16 postgraduate students from the Class of 2009 had an opportunity to attend the CMT2009 congress in Port Elizabeth, Nelson Mandela Bay. Another milestone that perhaps illustrates the value of collaboration linked to the origin of the CMT international congress is that the NMMU introduced for the first time in March 2009 a Diploma in Maritime Studies as a direct result of a partnership agreement between the Department of Development Studies at NMMU and the School of Marine Affairs at the University of Washington, Seattle.

It was evident at the first CMT congresses that marine scientists, researchers, academics, practitioners, operators, government officials, coastal authorities etc, shared common concerns and recognized the value of greater collaboration. Tourism is under the spotlight because it is a sector that delivers considerable triple bottom line benefits but can also put huge pressure on sensitive ecosystems and natural resources if not developed and managed responsibly. The value of CMT is that it allows each host country to focus on the coastal and marine tourism issues that are of utmost concern to that country. This should influence the theme of the congress and design of the program.

The CMT2009 program included for the first time in South Africa a Beach Tourism & Safety Workshop. Beaches are a key tourism attraction for destinations around the world. As an icon of tourism they often rank alongside culture and heritage in their importance for destination branding, as well as providing a unique backdrop for coastal resort development and tourism accommodation, fine dining, shopping and a range of recreational activities. In terms of their geomorphology, beaches are considered the most dynamic environments on earth. Successful beach tourism provides a destination with a huge competitive advantage, but it requires robust partnerships across stakeholders to protect the natural resource and use it in the most sustainable way. Clean water and safety features are the two key critical success factors for successful beach tourism development and promotion. In this regard capacity-building in the coastal and marine environment is a global imperative.

The World Tourism Organization (UNWTO) estimated in 2001 that of the 77-million outbound long-haul holidays enjoyed by European tourists in 2001, some 9-million (12%) were sun and beach holidays. The annual summer beach holiday at the sea is by far the most popular holiday for the majority of domestic tourists in South Africa. However, beach tourism remains one of the most
under-marketed tourism assets in South Africa. The UNWTO predicts that some 80% of the world's population will be residing within 60 km of a coastline by 2020 putting enormous pressure on coastal and marine resources.

The CMT2009 congress came at a time when every coastal destination should be preparing for challenges likely to impact on coastal destinations. These include major issues such as global warming and climate change, beach safety and security, disaster management, clean water, integrated coastal management, coastal migration, coastal industrialization, coastal recreation and marine protected areas. CMT is an international congress that tackles all these issues holistically and collectively. The 53 papers contributed to CMT2009 from 16 participating countries, and which are included in these Proceedings of CMT2009, the 6th International Coastal & Marine Tourism Congress, should therefore make a valuable contribution covering a diverse range of relevant topics concerned with tourism and conservation in the coastal and marine tourism environment.

Peter Myles
CMT2009 Conference Chair
Proceedings of CMT2009

ACKNOWLEDGEMENTS

Planning and development of CMT2009 took place over 2 years preceding the Congress in June 2009, and subsequent to the CMT2007 in Auckland, New Zealand. During that time, many individuals and organizations assisted with the planning and execution process. The following individuals and organizations deserve special mention for their contribution.

Estée van Jaarsveld, Karla Vermaak and Lynn-Mari de Lange of Kyle Business Projects for the detailed management of the Conference Secretariat from start to finish; Michelle Brown of Brown’s PR for media relations and events organization and coordination support.

Major Sponsoring Organisations

Sponsoring Organisations

- Auspex Property
- Avis
- Addo Elephant National Park / SA National Parks
- Boardwalk Entertainment and Conference Center
- Eastern Cape Tourism Board
- King’s Tide Boutique Hotel
- Magnetic Storm
International Committee

The International Committee of the CMT2009 provided guidance, advise and support to the Local Organising Committee, throughout the planning and implementation of the CMT2009. The members of the International Committee are:

Dr Michael Lück, Associate Professor of Tourism Studies and Head of Department (Tourism & Events) at Auckland University of Technology, New Zealand.

Dr Jan Auyong, Assistant Director of Oregon Agricultural Experiment Station and Executive Director, Western Sun Grant Centre, Oregon, USA.

Prof Marc L. Miller, Professor in the School of Marine Studies and Adjunct Professor in the School of Aquatic and Fishery Sciences and the Department of Anthropology, University of Washington, Seattle, Washington, USA.

Dr Jeff Wilks, Managing Director of Tourism Safety, Australia

Dr Mark B. Orams, Associate Director of the New Zealand Tourism Research Institute at Auckland University of Technology, New Zealand

Presenters and Delegates

A congress such as the CMT2009 is not about the location, the organization, or the social activities, as enjoyable as they may be – it is about the content and quality of the programme and quality of the interaction between delegates at the Congress. Although the Local and International Committees have some influence over the content of the programme, these elements are largely controlled and provided by the presenters and delegates attending the Congress. It would therefore be remiss to not acknowledge with thanks the excellent contributions made to the CMT2009 by the presenters of 55 audio / visual papers and 7 posters, the exhibitors, and the delegates from a wide range of industries, organizations and geographic areas in the world.

Without the concerted support from all of these individuals and organizations, the CMT2009 Congress would not have been possible. To them, we express our thanks on behalf of the Local Organising Committee of the CMT2009:

Peter B Myles (Chairman), Kyle Business Projects / Research Associate, Nelson Mandela Metropolitan University

Dr Anthony Albers, Kyle Business Projects

Estée van Jaarsveld, Kyle Business Projects

Rainer Schimpf, Dive Expert Tours / Ocean Messengers NGO

Dr Matt Dicken, Bayworld Centre for Research & Education

Prof Patrick Vrancken, Nelson Mandela Metropolitan University

Doné Louw, Nelson Mandela Bay Tourism
Tania Pearson, Nelson Mandela Bay Tourism
Fernando Cain, Nelson Mandela Bay Municipality
Carleen Arends, Nelson Mandela Bay Municipality
Rachel Greensmith, Boardwalk Casino & Entertainment World
Dr Paul Martin, Kyle Business Projects / Independent Environmental Scientist
SINK IT: BUT WILL NETWORKS GROW
DETERMINING THE SOCIAL VALUE OF ARTIFICIAL REEFS

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ABSTRACT

Artificial reefs offer direct benefits to local communities by providing recreational opportunities, increased revenue and ecological habitats (Seaman, 2000; Pears & Williams, 2005). Artificial reef value is predominantly measured from economic or ecological perspectives. However a holistic evaluation, including social value, is vital. This paper investigates social value in relation to artificial reefs by asking - how can social value be measured and what are the potential outcomes? Social network analysis identifies relationships associated with artificial reef development as these networks are an important component of artificial reef assessment, potentially generating increased levels of knowledge and innovation.

Attention paid to artificial reef development has increased dramatically in the past decade, particularly in Australia (Hess et al., 2001). Much media attention, political commentary and public awareness preceded the sinking of HMAS Brisbane, while Victoria is preparing to sink HMAS Canberra in 2009. The context for this paper is ex-HMAS Brisbane Conservation Park, Sunshine Coast, Australia. In 2005, the Queensland Government accepted HMAS Brisbane from the Commonwealth for the development of a world-class wreck dive destination (State of Queensland Environmental Protection Agency, 2007).

It is thought that dive operators are the hub around which all networks evolve, creating tightly bonded clichés. Results suggest networks have developed showing bridging, bonding and linking networks that are potentially open to innovation and greater strategic alliances, thus expanding the economic and social value of the resource and host region. Social value, or social networks, highlight the potential for resource and industry sustainability by providing links vital to those responsible for planning and policy development, future expenditures and adaptive strategies.

Keywords: artificial reefs, social value, social network analysis

REFERENCES


AN INDUSTRY IN DECLINE? THE EVOLUTION OF WHALE-WATCHING TOURISM IN HERVEY BAY, AUSTRALIA.

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ABSTRACT

Australian whale-watching tourism began in Hervey Bay, Queensland in 1987. For 20 years Hervey Bay has been historically promoted as the “whale-watching capital of Australia”. However, an increase in whale-watching operations across south-east Queensland and Australia compete for the tourist dollar. While Hervey Bay remains Australia’s largest commercial Humpback Whale viewing area based on the number of whales, the number of visitors and the number of boats that operate, this may be changing. This paper examines the evolution of Hervey Bay whale-watching in relation to the Butler tourism lifecycle model, and Duffus and Dearden’s conceptual framework for wildlife tourism. It analyses official visitation data, wildlife records and tour operations information, as well as interviews with tour operators and the protected area management agency. The multi-dimensional nature of the information collected allowed greater capacity for understanding the changes occurring in Hervey Bay whale-watching. The results indicate that changing visitor and commercial operator numbers and profiles, increasing regional competition and a changing relationship with the protected area managers may be symptomatic of a maturing industry that has reached a watershed point in its sustainability. The findings of this research have implications for tourism stakeholders including planners, protected area managers and tour operators in relation to changing sector demands and proactive adaptation to those changes.

Keywords: Whale-watching, Tourism Lifecycle Model, Hervey Bay.

INTRODUCTION

Tourism settings and industries are generally vibrant and ever changing, offering opportunities for employment, entrepreneurs and local businesses, and often bringing significant economic benefits to the local community. Thus the planning and management of tourism in natural settings also requires a dynamic approach by the professionals involved in the assessment and impact of these industries. Today consideration of a wide range of factors makes this an increasingly complex task. The dynamic approach to planning and management adopted in this paper considers the history of the area, the current use, the impact of the tour operation on the setting and/or wildlife involved, the overall development of the local and regional community and its infrastructure, and future trends. All these factors are important considerations in planning and managing tourism industries, and while planners and managers may take into account traditional social, environmental and engineering perspectives, there is also much to be gained by considering research findings informed by tourism destination lifecycle research. This research approach has potential synergies for planners and managers because it provides an indicator of the impact of the tourism industry’s growth and decline on the community involved. Combined with currently used planning and management assessments a better understanding of the long term impacts of a tourism operation on both the setting/wildlife and the local economy can be achieved. The whale-watching tourism industry in Hervey Bay, Australia provides a good case study and has been an important contributor to regional community development for over 20 years.
Whale-watching tourism experienced considerable growth both globally (Greenpeace, 2004; IFAW, 2004) and at the community level in the 1980s and 1990s (Hoyt, 2001; Valentine & Birtles, 2004). Australia embraced this by establishing the first commercial whale-watching at Hervey Bay in 1987. By 2003 the Australian commercial whale-watch industry was estimated to have contributed $300 million to the economy with over 1.6 million tourists paying to see whales (Martin, 2006). In the same year Queensland recorded 230,000 whale-watching visitors, generating over $96 million to local communities (IFAW, 2004). Hervey Bay whale-watching started small with around 27,000 visitors by 1990, however by 1996 this had grown to more than 83,000 (EPA, 2006). The rapid growth of whale-watching in Hervey Bay was reflected by substantial benefits from visitor spending within the local community with more than $30 million spent in Hervey Bay by whale-watching visitors in 1999/2000 (Hoyt, 2001; Wilson & Tisdell, 2003). In 2001 Hervey Bay was identified as one of three Australian communities having received substantial economic benefits from this growing industry, the others being Byron Bay (NSW) and Monkey Mia (WA) (Hoyt, 2001). Hervey Bay soon became recognized as Australia’s premier Humpback Whale (Megaptera novaeangliae) watching area. The success of Hervey Bay is credited as fostering the development of whale-watching tourism into other areas of Queensland, such as the Great Barrier Reef World Heritage Area (Stokes et al., 2002). Today whale-watching tourism continues to increase across Australia, however the viability of areas like Hervey Bay is being impacted by a number of local and regional influences.

Tourism industries evolve over time and are a product of social expectations, driven by the values and norms of the actors within them. They are also transformed by changing contextual, social and physical influences. Butler’s Tourism Destination Lifecycle Model (Butler, 1980) views changes in tourism settings over time as reflective of the evolution of these industries. Following Cohen (1972), Noronha (1976), and Plog (1972), Butler developed his model of evolution of a tourism destination based on seven distinct phases, that integrated the physical and social developmental of an area with changes over time. Butler indicated that as an area moved from the initial exploration and development phase to the consolidation, stagnation and decline phases, change in visitor numbers and typology, operator numbers and typology, competition from other areas, and management practices would begin to impact. Although Butler’s research was focused on addressing the decline of environmental quality, he was also concerned that planners and tourism managers understood that tourism could not be viewed as a continually renewable resource.

In adapting Butler’s model specifically for wildlife tourism settings Duffus and Dearden (1990) incorporated the tourism user, the wildlife and ecology of the setting, and the interaction between the two, including the input of management, changes to tour operators, and changes to the site over time due to evolving demand from visitors. This allowed them to contextualise change in terms of user typology and the development of the site in relation to carrying capacity. Hvenegaard (1994) suggested that changes in tour operators and their operations, to accommodate changing visitor needs, was also an indicator of an evolving industry as it moved through the phases of Butler’s and Duffus and Dearden’s models. Hvenegaard (1994) proposed a tour operator classification based on their level of responsibility for their own impact and on their level of commitment to the industry through education of visitors and the quality and training of tour guides. Others such as Russell and Faulkner (1999) suggested that the interactions between stakeholders, particularly the tension between tour operators and managers and planners, was also a consideration in the evolution of a tourism destination.

This paper focuses on four main aspects of these models to examine the changes in this industry. Specifically it details changes in visitor numbers and typology, tour operator numbers and their operations, changes in local and regional competition, and finally the relationship between the protected area managers and tour operators.
THE STUDY

Location

Hervey Bay, located on the east coast of Australia, lies on the natural migration route of the Humpback Whale. Humpback Whales use Hervey Bay as a stop-off point, both on their northern migration and before returning to Antarctica (Vang, 2002), congregating in the bay for prolonged periods on their migration (DEH, 1997; Vang, 2002). Thus the large number of whales sighted each season, plus having the largest and most diverse range of whale-watching tours anywhere in Australia, and the relatively sheltered viewing environment within the lee of Fraser Island made Hervey Bay an ideal whale-watching destination. Other factors such as the declaration of a Marine Park in 1989 specifically as a whale management area (DEH, 1997; EPA, 2004; Vang, 2002), and its accessibility to a major capital city (Brisbane), and a major tourist destination (Sunshine Coast and the World Heritage listed Fraser Island) all contributed to the development of whale-watching tourism in this region.

Methods

This study is based on doctoral research which focused on the communication of conservation in whale-watching. The research investigated changes in Hervey Bay whale-watching and sought to take into account the diversity and multi-dimensionality of the setting. As stated earlier it combined models to give a more complete picture of the changing environment. Information was collected through the analysis of official Queensland Parks and Wildlife Service (QPWS) visitation data and wildlife records collected since 1989; content analysis of tour operation material; on-tour visitor surveys; and interviews with tour operators and the protected area management agency. The range of information collected allowed greater capacity to understand the changes occurring in Hervey Bay whale-watching.

Quantitative data was analysed using SPSS (Statistical Package for the Social Sciences) and results are reported in percentages. A more complex multivariate analysis was conducted on the results and is reported in detail in Peake (2008).

Results

Hervey Bay tour boats have carried more than one million passengers to view whales, on 19,500 trips with over 63,000 recorded whale pod/interactions in a period of 17 years to 2005 (EPA, 2006). While Hervey Bay whale-watching has operated since 1987 (> 20 years) data was not collected before 1989 or after 2005 by the QPWS.

Visitor numbers and profiles

Hervey Bay whale-watching grew rapidly in the first seven years peaking in 1996 (Figure 1). Visitor numbers remained high until 1998 then trended mostly down each year with the largest drop between 1999 and 2000. While fluctuations have occurred since then visitor numbers have remained well below the 1996 peak and since 2003 have continued to decline. The rate of change in visitor numbers highlights the downward trend from the initial growth period through to 2005 (Figure 1).

The visitor profile established in 2005 (Peake, 2008) indicated the whale-watching visitor was predominately Australian, with over half of all Australian whale-watching visitors to Hervey Bay from Queensland (Table 1). Interestingly, overseas visitor numbers more than doubled in a decade (Muloin, 1998; Peake, 2008).
The 1989 initial figure was used as the base line from which change was calculated.

Figure 1  Visitor numbers and rate of change in Hervey Bay 1989- 2005

<table>
<thead>
<tr>
<th>Origin</th>
<th>Australian</th>
<th>Queensland</th>
<th>NSW</th>
<th>Victoria</th>
<th>Rest of Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>71.4%</td>
<td>57.5%</td>
<td>22.2%</td>
<td>12.6%</td>
<td>7.7%</td>
</tr>
<tr>
<td></td>
<td>Overseas</td>
<td>UK</td>
<td>Germany</td>
<td>Other Europe</td>
<td>USA &amp; Canada</td>
</tr>
<tr>
<td></td>
<td>28.6%</td>
<td>32.0%</td>
<td>17.0%</td>
<td>16.0%</td>
<td>11.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>&gt;25 years</th>
<th>86.1%</th>
<th>18-25 years</th>
<th>13.9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>55.9%</td>
<td>Male</td>
<td>44.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motive</th>
<th>To see whales</th>
<th>58.8%</th>
<th>Holiday</th>
<th>47.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Visit family/friends</td>
<td>16.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prior knowledge about whales</th>
<th>A lot</th>
<th>9.0%</th>
<th>Some</th>
<th>59.4%</th>
<th>None</th>
<th>30.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whale-watching experience</td>
<td>First time</td>
<td>68.7%</td>
<td>Australian</td>
<td>66.5%</td>
<td>Overseas</td>
<td>74.1%</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>78% 18-40 yrs</td>
<td>62% &gt;56 yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Experienced</td>
<td>31.3%</td>
<td></td>
<td>Two times</td>
<td>15.6%</td>
<td>Three times</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Four times</td>
<td>3.4%</td>
<td>Five or more</td>
<td>5.9%</td>
<td></td>
</tr>
</tbody>
</table>

Table 1  Hervey Bay whale-watching visitor profile in 2005
Visitors’ prime motivation for coming to Hervey Bay to view whales (58.8%) (Table 1), was not unexpected, however interestingly this had increased by 18% in a decade (Muloin, 1998; Tourism Queensland, 1998). The gender and age of whale watchers was similar to previous research with marginally more females than males (Table 1), and most visitors 26 years and older (Muloin, 1998; Tourism Queensland, 1998; Valentine, 2004). However, changes in the visitor age profile were noted from previous studies for some age cohorts, with an increase in the over 56-age group (11%), which was off-set with a similar drop in the 26-55 age group.

Data from the 1994 and 1998 studies (Muloin, 1998; Tourism Queensland, 1998) indicated first-time whale-watchers increased up to 1998. While most visitors in 2005 were first-time whale-watchers the reduction in first-time whale-watchers was more dramatic compared to overall whale-watching numbers (Figure 2). The number of first-time whale-watchers between 1987 and 1994 is not known.

More than half (59.4%) of visitors, had some prior knowledge of whales before going on the trip, 9.8% indicated a lot of knowledge and 30.8% indicated no/very little knowledge. Visitors age was a determinant of knowledge, with those over 56 years having a higher than expected outcome in a random distribution for the a lot of prior knowledge category (Peake, 2008). The increase in the >56 age group indicated a changing visitor demographic towards an older visitor, who was more knowledgeable and an experienced whale-watcher (Peake, 2008). It is possible that this reflects a natural progression of those whale-watchers from the 1980/90’s, who are now in an older age cohort and may have returned.

**Changing local and regional competition**

The domination of Hervey Bay whale-watching in the South East Queensland region between 1989 and 1998 was reflected in marginal fluctuations in the number of tours operating. However from 1998 to 2005 a more constant decrease in the number of tours (Figure 3) mirrored the decline in overall tourist numbers (Figure 1). A total reduction of 60% of tours operating over that period, culminated in only eight tours operating in 2005. Although boat numbers continued to decline the number of trips offered continued to rise until 2001 however, by then these boats were carrying 20% less passengers. The decreasing number of tour operators was accompanied by a number of
changes in boat types, operation types and tour owners, as this industry and location adapted to changing demand and competition. The variation in whale-watching tour boats operating between 2004 and 2005 typified these changes, and were reflected in boat size, visitor capacity, trip frequency, boat type and cost. In 2004 boat-carrying capacity ranged from 20 to 250 passengers.

In 2005 two of the largest carriers did not operate, with 150 passengers the largest number carried. In 2004 the carrying capacity of ten boats was 1530 passengers per day equated to 128,520 for the season. Tour boats ranged in size from a 10.5m sailing catamaran to 20m double-deck fast catamarans, and the services offered ranged from dawn cruises and night cruises (2004 only), half-day, three-quarter day, and full-day tours. Between 2004 and 2005 the mode of operation of the boats changed, with more half-day trips and no dawn or evening cruises. In 2005 eight boats operated a total of 12 trips per day with a potential carrying capacity of up to 1170 passengers per day, equating to 98,280 for the season. Reported returns suggest only 60.6% of capacity was used (EPA, 2006).

The drop in visitor numbers and tours operating out of Hervey Bay may be due to a number of factors including saturation of the local market or from increasing competition within the region. When examined in terms of increasing regional competition the impact of six whale-watching tours operating outside of Hervey Bay by 2008 may have been a catalyst for declining visitation. These six tours operated in areas closer than Hervey Bay to the major population centres of south-east Queensland, thus competing in Hervey Bay’s traditional markets of Brisbane, the Gold Coast, and the Sunshine Coast (Figure 4). In 2005, 28% of visitors to Hervey Bay came from the Brisbane metropolitan area, 5% from the Gold Coast, 8.3% from the Sunshine Coast and 10.7% from the Hervey Bay region.
Figure 4   Changing regional competition in whale-watching tour operations.

Tour Operations

As tourism develops tour operators and their operations change to reflect economic viability and the changing commitment of the operator to the industry (Hvenegaard, 1994; Duffus and Dearden, 1990). These changes may be reflected in the quality of the service; the interpretation provided; the types of messages communicated about the tour and the resource; and in the relationship between protected area managers and the industry. Commitment to, and promotion of the resource, was investigated through an analyses of tour marketing material and interviews with tour operators and the management agency.

A content analysis of tour boat promotional material ascertained the importance placed on content appropriate to tours operating in a marine park and focused on an endangered species. The research investigated themes such as conservation, interpretation and the education role of the tour guide. The review of eleven pieces of printed material and eight web-based information sources highlighted minimal environmental and conservation content was promoted. Most material focused on the experiential qualifications of crew such as “experience/enthusiasm” and what to expect on the tour. Six operators advertised “expert, interpretative or educational” commentary, while the two remaining operators did not advertise any educational content. Interviews with tour operators clarified that the “expert, interpretative or educational” commentary was given by people with experiential qualifications, although the promotion of interpretation and the tour guide’s role and their skills, in value adding to the tour, was not perceived as important. Tour operators stated minimal interest in employing qualified tour guides, stating no direct value to their business from tour guide certification or training.

Interviews with tour operators confirmed, not unexpectedly, visitor entertainment was the primary focus of the tour. While most said they provided some information on conservation this was not deemed a top priority. All indicated their role was not to educate visitors about conservation or communicate the protected area values espoused by the management agency. This was summed up by two operators who stated “explain what the whales are doing at the time, information not education, just make sure guests have a good time and see whales”, and “no message, just enjoyment, not into education, the experience itself will do that”. However a visitor survey found 48.5% of visitors indicated that conservation should have been covered on the tour (Peake, 2008).
When investigated a tenuous relationship between the protected area managers and tour operators existed. Tour operators stated a lack of support from the QPWS for their industry. Operators also expressed a lack of confidence in the ability of the QPWS to provide interpretive support and training for tour staff and were critical of the overall management of the marine park.

However when QPWS staff were interviewed their perspective of tour operators roles and the QPWS support for them indicated disparity. QPWS expected tour operators understood their role in the education of the visitor, however they had no idea how many boats had staff trained or qualified to undertake this communication. QPWS stated they supported tour operators through the provision of a Whale-watching Education Program, which outlined tour operators responsibilities such as to “provide a concise take home conservation message” about whales and the marine environment as reinforcement of the visitor’s experience (EPA, 1999). QPWS conducted infrequent evaluation of the tour operators’ interpretation program and operation “because they had all being doing it so long”. QPWS stated did not perceive there to be any problems. When asked specifically about the communication of conservation and management messages, QPWS indicated these topics were problematic in tour operator presentations. However they indicated that they did not feel it was their responsibility to address this issue thus reinforcing what tour operators stated about support. This statement was contrary to the specifics of the legislation that directed QPWS and their role in the support and training of tourism staff (EPA, 2005).

**Wildlife changes**

While not a core component of Butler’s model, Duffus and Dearden used changes in the resource as an indicator of an evolving destination. Available wildlife data was used to superficially assess if changes to the site followed Duffus and Dearden’s model. Although visitors, tour boats and number of trips were declining whale pod/interactions nearly tripled between 1989 and 1998. However since then pod sighting declined by 38% to 2005 (Figure 5). These fluctuations in pod sightings are likely to be associated with normal yearly fluctuations in the number of animals returning to breed as part of a natural cycle (Vang, 2002). The large drop in pods sighted in 2005 may also be relative to the decreased number of trips made by boats. However these decreasing numbers could indicate a declining environment as suggested by Duffus and Dearden, although further research would be required to make any assumptions about the resource at this time.

![Figure 5: Whale pod interactions recorded from 1989-2005](source:image-url)
The findings of this research indicate many changes in Hervey Bay over its 20 years of operation, both spatially and numerically. These findings are now discussed in terms of Butler, Duffus and Dearden and others.

Discussion

The models proposed by Butler and Duffus and Dearden are often used in wildlife tourism research to evaluate the evolution of the setting (Dearden, 2006; Duffus & Dearden, 1990; Higham, 2006). Butler suggested as an area was discovered, a well defined tourist season emerged and with increasing visitor numbers local infrastructure developed and adapted as the local economy became increasingly reliant on tourism. His model suggested that after the initial boom, tourist numbers and operators would consolidate, peak, and then over time potentially stagnate and decline.

This research supports a number of Butler’s assumptions in particular changing visitor numbers (Figure 1). While the decline in visitor numbers in 2000 was attributed, in local press, to a series of events, such as: the effects of the Sydney Olympic Games; the introduction of GST; and a dingo attack on a child on Fraser Island earlier in the year (Ryan, 2001), the downward trend continued. Butler predicted that the rate of change in visitor numbers would slow before a peak was reached, although overall numbers could continue to increase. Figure 1 shows the rate change started slowing from 1993 with a large drop in 1995, although visitor numbers continued to rise until they peaked in 1998. When Hervey Bay visitor numbers are mapped onto Butler’s model they mirror much of the destination lifecycle (Figure 6).

Accompanying this change in visitor numbers, Butler and Duffus and Dearden suggested as tourism industries mature visitor typology changes from the initial small number of explorers/wildlife specialists/hard ecotourists (Butler, 1980; Duffus & Dearden, 1990; Weaver, 2004) to a larger number of mass tourists/generalists. Recreation specialisation theory (Bryan, 1977) also links increasing experience to changing user typology from novice to specialist, accompanied by a narrowing of visitors’ requirements (Dearden, 2006; Duffus & Dearden, 1990; Lehto et al., 2004). This research support this change in visitor typology with first-time (novice) whale-watchers increasing between 1994 and 1998. However the drop in first-time whale-watchers by 2005 (Figure 2) deviates Hervey Bay from Duffus and Dearden’s’ model with experienced whale-watchers a substantial proportion of the visitor profile. While Hervey Bay whale-watching shows signs of a maturing industry the change in visitor typology does not follow the model’s assumptions after 1998 (Butler, 1980; Duffus & Dearden, 1990). This may be linked to the older demographic of the respondent and an artefact of the predominately domestic market. It is unfortunate that the number of first-time whale-watchers between 1987-1994 is not known as it would allow more meaningful comparison with Duffus and Dearden’s’ assumptions about a changing visitor profile, over time.
The change in visitor numbers and perhaps visitor typology was reflected in the fluctuations in tour operator numbers, boat sizes, types and number of trips over the past 20 years. Within that period a number of boats had changed ownership, some relocated and others downsized. The significant decline in tour boats suggests Hervey Bay whale-watching may have reached its carrying capacity; is in a stagnation/decline phase; or is being impacted by regional competition.

Russell and Faulkner (1999) view competition as part of the dynamic adaptability of tourism operators to address supply and demand fluctuations both within a destination and outside the destination. Butler however, viewed competition with decreasing tourist numbers as symptomatic of an industry in decline He stated that as stagnation was reached, although the area could still have a recognizable image it would not be as popular, and competition from newer attractions would impact substantially in what was once a strong market (Butler 1980). While Hervey Bay is today still recognized globally as Australia’s premier whale-watching location, an expansion of whale-watching tours in south-east Queensland since 1996 (Figure 4) has facilitated greater opportunities for people to whale-watch closer to major tourist centers. While there are major differences in the type and quality of the experience at locations outside of Hervey Bay, tourists are unlikely to be aware of these when choosing their whale-watching tour. This increasing regional competition has
likely impacted on the status of Hervey Bay in a number of ways, most notably in the decreasing number of boats operating, the decline in tourists visiting and in economic benefit to the local community.

Hvenegaard (1994) and Duffus and Dearden (1990) viewed changing tour quality, tour operators commitment, tour operator perception of their responsibilities, and their relationship with the protected area managers as indicators of a maturing industry. While tour operators and QPWS must comply with specific legislation in relation to whale-watching and the provision of services to visitors, differing priorities can result in a tenuous and often conflicting relationship (Ballantyne & Uzzel, 1999; Russell & Faulkner, 1999). Russell and Faulkner (1999) suggest this is not uncommon and view tour operators as agents of change, motivated and innovative, adapting readily to changing supply and demand, whereas planners and managers are focused on moderating and controlling change. Interviews highlighted the differing priorities and perceptions of each stakeholder’s role in the marine park. QPWS in their management role of the marine park believed tour operators could assist them by delivering specific messages from the whale education program. However they did not view it part of their role to provide tour operator’s assistance and training to deliver these messages, although this is clearly stated in the legislation (EPA, 2005) (see Peake 2008 for further detail). In contrast tour operators had no or little understanding of the expectations of the QPWS in their assisting with the management of the protected area through the communication of protected area values to visitors. The failure of both sides to recognise conflicting priorities, especially in relation to resource conservation as a joint responsibility, reflects the breakdown in communication and cooperation between the tourism industry and government.

One might assume that in the initial stages of Hervey Bay whale-watching tour operators represented ‘authentic’ or ‘hard’ ecotourism (Steiner & Reisinger, 2006; Weaver, 2002; Weaver, 2004; Weaver & Lawton, 2002) characterised by enthusiastic tour operators, working closely with the management agency, having similar objectives, and promoting values important in the industry about whale conservation. As the industry developed it followed the Butler curve and typified the characteristics of Duffus and Dearden’s model suggesting in the middle stages a change from ‘hard to softer ecotourism’. At this time the interpretation may have become more general to accommodate a predominately novice audience, and tour operators reliance on the management agency may have decreased, resulting in the breakdown of communication between these major stakeholders. The tour marketing material examined here and Peake’s (2007) tour guide research highlighted the lack of promotion of essential components of an ecotour. This is not uncommon and previous research into 55 tour operators representing 402 Australian nature based tours found the experiential qualifications of tour guides’ heavily promoted over formal qualifications, with an emphasis on visitor enjoyment rather than environmental content (Weiler, 1993). Thus Hervey Bay tour operators today seem to be catering to the mass/novice ecotourist and undertaking superficial endeavors to increase visitor awareness through interpretation (Peake, 2007) rather than focusing on ecotourism principles of sustainability through quality conservation focused interpretation and education.

When the results of this research are considered in their entirety Hervey Bay whale-watching today seems more reflective of the later stages of Butler and Duffus and Dearden’s model, and has perhaps reached the watershed point in the model validated by issues such as:

- Declining visitor numbers;
- Changing visitor typology;
- Increasing competition;
- Decreasing tour operators;
- Declining tour operator commitment through:
• A lack of quality interpretation; and
• A lack of recognition of the importance of the tour guide;
• Declining synergy with the protected area managers reflected by:
  • Minimal delivery of conservation and management messages; and
  • Limited support by either stakeholder (management agency and tour operators) for each other.

Butler (1980) and Duffus and Dearden (1990) suggested that when an industry progressed to this mature stage changes were necessary in the structure of that industry to facilitate renewal, otherwise it could continue to decline. The implications for Hervey Bay whale-watching means some operators must specialise to survive (R), others may continue to offer the existing service (C), and some may not be able to compete financially, and are lost to the industry (D) (Figure 6). These choices for sustainability may also reflect the operator’s underlying motivation. Whale-watching operators remaining in Hervey Bay perhaps fall into two overlapping categories: the first, tour operators who are both economically viable and committed to ecotourism; and those who are primarily economically focused. The continuing decline of Hervey Bay as an industry posits that planners, protected area managers and tour operators need to address the issues raised in this paper cooperatively and proactively if long-term strategies for a vibrant and sustainable whale-watching industry are to be developed.

CONCLUSION

For 20 years Hervey Bay has been historically promoted as the “whale-watching capital of Australia”. This research indicates that changing visitor and commercial operator numbers and profiles, increasing regional competition and a changing relationship with the protected area managers may be symptomatic of a maturing industry that has reached a watershed point in its sustainability. The evolution of whale-watching tourism in Hervey Bay, Australia illustrates the importance of tourism research in planning and management processes. I argue that this approach raises questions about the future viability of the whale-watching industry in Hervey Bay and has implications for existing and potential whale-watching focused industries elsewhere.

REFERENCES


THE LEARNING TOURIST:  
THE ROLE OF IDENTITY-RELATED VISIT MOTIVATIONS

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ABSTRACT

Tourism and leisure patterns are changing in the 21st century. By contrast with the 20th century, where the boundaries between work and leisure were firmly drawn, in today’s Knowledge Age work, consumption, learning and leisure are all tightly interwoven. In the 21st century, increasing numbers of people view leisure and tourism as an opportunity to expand their understanding of themselves and their world; this seems particularly likely to be true of coastal and marine tourism. The paper will describe a research model that utilizes the construct of identity-related visit motivations as a tool for understanding tourists’ visits to free-choice learning settings such as aquariums and whale watching cruises. The model not only provides improved understanding of why people might visit a marine or coastal tourism site but provides predictions about how the visitor is likely to behave within the site as well as the nature of the learning that is likely result as a consequence of the experience. This model could have important implications for both how future research at the intersection of leisure and learning are undertaken as well as for how practitioners can more successfully attract and satisfy the new learning tourist.

Keywords: learning, tourism, free-choice, identity, motivations

INTRODUCTION

Tourism and leisure patterns are changing in the 21st century. By contrast with the 20th century, where the boundaries between work and leisure were firmly drawn (e.g., Aguiar & Hurst, 2006; de Grazia, 1962; Pearson, 1977; Roberts, 1999; Young & Schuler, 1991), in today’s Knowledge Age work, consumption, learning and leisure are all tightly interwoven. Throughout most of the 20th century the public primarily used leisure and tourism as a mechanism for escaping from the physical and sometimes mental exhaustion of work; satisfied through diversion or relaxation. Classic responses were the invention by Disney of the theme park and the development and proliferation worldwide of tropical resort hotels and spas. Although these tourist destinations are still popular, their market share is declining. Their main competition has been an entirely different form of tourism – ecotourism and cultural tourism – tourism designed to meet a very different set of leisure needs. In the 21st century, increasing numbers of people view leisure and tourism as an opportunity to expand their understanding of themselves and their world (Kelly & Freysinger, 2000; Freysinger & Kelly, 2004). Anthropologist Nelson Graburn (1977: 5) anticipated these changes more than a quarter century ago when he stated that “leisure is displacing work from the center of modern social arrangements.” Graburn foresaw a society in which learning-oriented leisure would soon become the dominant form of daily activity; we are not there yet but we are getting closer to that reality every day. People today have an insatiable appetite for learning because in our present-day society, “knowledge is power, knowledge is security, knowledge is the ultimate means to control fate” (Falk & Dierking, 2000: 62). Leisure settings have become an important medium
through which people can acquire information, develop ideas and construct new visions for themselves and their society. Indeed, for many people, “the information they encounter while at leisure may offer the only opportunity to learn about their bonds to the environment, or to their history and culture” (Moscardo, 1998: 4). Rather than vegetating, people increasingly see their leisure time as an opportunity to be enervated by immersing themselves in new ideas, spaces and experiences. Whereas the archetype of the old model of tourism and leisure might be lying on a secluded beach under a palm tree, the archetype of the new model of tourism and leisure is exploring a tropical reef in Malaysia or whale watching in the Gulf of California. The former model has not died, but its dominance is clearly waning.

These trends are revealed through a recent Canadian Tourism Council investigation of American tourism patterns (Research Resolutions, 2007). The number one thing Americans said they were seeking on a vacation was Beaches (54%), but a close second (51%) was Culture, followed in the number three spot by Adventures (41%). Furthermore, 40% of American leisure travelers state they travel with the purpose of educating themselves about and visiting their destination’s unique attractions. These trends have important implications for tourism research.

Historically, tourism research has been quite good at describing and understanding why people participate in tourism and how they make their tourism choices, what (Smith, 1995) has referred to as the demand side of tourism. Studies on market segmentation, marketing and the use of destinations markers are plentiful. Investigations of the supply side, what the institutions themselves wish to achieve and what value their visitors derive from their experiences, have been fewer and dominated by “satisfaction” surveys. Satisfaction was a sufficient outcome variable when tourists were primarily seeking escape and relaxation, but it is a woefully inadequate outcome variable for characterizing visitor’s desires for learning and self-fulfillment.

LEISURE AND LEARNING

The individuals who manage and run ecotourism and heritage tourism sites have a different perspective on their visitors than do more traditional tourism venues. An attraction like Disney or a cruise line might be quite content to count heads and measure visitor satisfaction but that is not the case for those who run heritage and ecologically oriented sites; these “operators” are equally concerned with what visitors learn. Cultural and ecological sites want visitors to take away specific messages and they want to know what changes have occurred in how visitors think and how they behave. In short, they view their sites as educational venues; promoting not the compulsory learning of schools but free-choice learning experiences.

Those who work in tourism have yet to catch up with changes in the world of education and learning, in particular the rise in free-choice learning as a construct. Few seem to appreciate that it was only within the last one hundred years or so that the words learning, education and schooling came to be treated as synonyms. In fact, individuals have always drawn from many different sources to support their learning, including but not limited to schooling (e.g., Cremin, 1980). Despite the expansion of schooling in the developed world to as many as twenty years, each year now filling nine or even ten months, schooling still represents a relatively small percentage of our lives (Gerber, Cavallo, & Marek, 2001). As more and more of our time, at work and play, are invested in learning, there is once again a growing awareness of the importance of non-school sources of information and education that extend learning before and after the years of schooling. The vast majority of this non-school-based learning is free-choice learning, learning that individuals do when they have reasonable amount of choice and control over what, where, when, with whom and why they learn (Falk & Dierking, 2000: 2002). Much of the recent tourism and leisure literature continues to struggle with these changes. For example, the otherwise excellent taxonomy of tourist roles and needs (Gibson & Yiannakis, 2002: 365) includes a final category called
“educational tourist” – the tourist who “Participates in planned study tours and seminars to acquire new skills and knowledge”; perpetuating historically narrow views of education and learning.

Part of the challenge lies in not only expanding our view of what constitutes learning but also disabusing ourselves of the longstanding view that entertainment and education are two ends of a single continuum. Packer (2006) does an excellent job of reviewing the literature on this subject as well as providing data that clarifies the relationship between these two constructs. She concludes that the weight of evidence shows entertainment and education are currently perceived by the public not as contradictory, either-or attributes of leisure but in fact as complementary. In general, across a range of measures, the educational and entertainment aspects of a visit to an educationally-oriented leisure setting such as an aquarium or marine history site were found to be not only compatible, but synergistic, that is, their combined action or cooperation produced greater effectiveness than the sum of their individual effects. Their findings confirm what McLuhan (1960: 1) postulated roughly half a century earlier, “It's misleading to suppose there's any basic difference between education and entertainment.”

Nearly twenty years ago a handful of attempts were made to bridge the divide between leisure and learning (e.g., Roggenbuck, Loomis, Dagostino, 1990; Weiler & Hall, 1992), but such efforts were few and quite limited in scope. More recently, a number of tourism researchers have attempted to directly address the more complex outcomes of heritage and ecotourism (e.g., Ballantyne, Packer & Hughes, 2008; Chronis 2004; Ham & Weiler, 2002; Mitchell, 1998; Palmer, 2005; Richards, 1996; 2002; Urry, 1996). Of course, individuals working in settings such as museums, historic sites, zoos, aquariums, nature preserves, and national parks have long been concerned with the educational impact of their sites and there is a long history of research on the learning that results from visits to such cultural and ecological sites; useful reviews of research on free-choice environmental learning can be found in Falk, Heimlich and Foutz (2009). Of course, few if any of these latter investigations adequately deal with why their visitors show up in the first place and how those visit decisions influence learning outcomes.

Where this leads is to the need to develop a more holistic analysis of cultural and ecotourism that attempts to accommodate, ideally within a single construct, both the demand and the supply side. Needed is an analysis that is sufficiently complex to accommodate the varied reasons and motivations that drive visitors to learning-rich sites such as coastal historical sites and landmarks, aquariums and coastal natural areas and parks and the diverse learnings that result from these visits. I briefly outline below a model that I have developed based on research to zoos, aquariums, botanical gardens and other similar free-choice learning settings. Although this model has only been superficially tested at a coastal/marine setting (a whale watching excursion on the Oregon coast), it is my belief that it has broad generalizability and could be easily adapted to these settings.

TOWARDS A LEISURE-LEARNING MODEL

Historically, most efforts to understand learning at educationally-oriented leisure sites have begun from the premise that in order to understand what visitors will learn only requires an analysis of what will be “presented/taught” to visitors. For example, it is assumed that visitors to the aquarium will discover something about the diversity of fish that live in this area and the importance of conservation; since that’s is what the aquarium is designed to communicate. Although considerable research has shown that some visitors do indeed take away these ideas, most actually do not (Dierking, et al, 2002; Falk, Heimlich & Bronnenkant, 2006). These assumptions represent artifacts of the old Behaviorist models of learning that assumed that the learning “response” was directly tied to the educational “stimulus.” We now know that learning is always constructed from a individual’s prior knowledge and experience (cf., Roschelle, 1995) and that the entering attributes
of visitors to free-choice learning setting are critical for understanding the learning experience (Falk & Dierking, 2000; Falk & Adelman, 2003; Falk & Storksdieck, 2005).

Accordingly, an increasing number of free-choice learning sites have invested in trying to better understand and describe the attributes of their visitors. Unfortunately, most of this energy has been focused on characterizing their visiting audience using traditional demographic variables such as age, educational attainment or socio-economic background or other easily measured descriptors as visit frequency (e.g., first time vs. repeat visitor) or social arrangement (e.g., family vs. all-adult). Although occasionally useful, these kinds of measures by and large provide little useful information related to visitor learning (Falk & Heimlich, 2009). Leisure-learning experiences cannot be adequately described by merely understanding the “content” of the tourism site being visited, the design of the educational offerings or through such easily quantified visitor measures such as demographics. To get the complete answer to the questions of why people do or do not visit coastal free-choice learning sites, what they do there, and what learning/meaning they derive from the experience, turns out to require deeper, more synthetic explanations. So despite the considerable time and effort that many coastal free-choice learning investigators have devoted to framing the visitor experience using these common lenses, the results have been depressingly limited. Arguably these perspectives have yielded only the most rudimentary descriptive understandings and none comes close to providing a truly predictive model of the leisure-learning experience.

The Contextual Model of Learning (Falk & Dierking, 1992; 2000) provides a decent way to organize the complexity of what people do when actually engaged in a free-choice learning experience, but it is not really a model in the truest sense, it is actually a framework, a descriptive tool. A true leisure-learning model would need to be prescriptive and yield not only descriptions but actual predictions about what visitors will do and learn; such a model will need to accommodate both the site and the visitor sides of the equation. It will also need to expand the temporal and spatial perspective of the leisure-learning experience. As I have long argued, it is fundamentally impossible to understand the free-choice learning experiences by merely viewing it from within the “box” of the museum (Falk, 2007). Understanding the leisure-learning experience requires panning the camera back in time and space and appreciating that the actual time spent engaged in a coastal or marine tourist experience comprises only a small fraction of what is needed for understanding that experience. For most people, most of the time, the tourism experience is not life, but a small slice of life; just one of many experiences in a life time filled with experiences. Accordingly, we need to try and understand the tourism experience within this larger context. If we are to answer our fundamental questions of why people visit coastal or marine tourism sites, what they do there and what meaning they make of the experience, we must see the leisure-learning experience as a series of nested, seemingly inter-related events. In reality, the leisure-learning experience is no more than a series of snapshots of life, artificially bounded by our own need to frame what happens in a particular tourist experience as not only important but isolatable. However for the public that engages in such experiences these are often neither readily delineated nor necessarily even seen as singular events.

Thus I would assert that the leisure-learning experience is neither totally about visitors nor about ecotourism and/or cultural heritage sites but rather it is situated within that unique and ephemeral moment when both of these realities become one and the same – visitors are the site and the site is the visitor. This new way of thinking suggests we stop thinking about educational exhibitions and content as fixed and stable entities designed to achieve singular outcomes and instead think of them as intellectual resources capable of being experienced and used in different ways for multiple, equally valid purposes. It requires us to stop thinking about visitors as definable by some permanent quality or attribute such as age or race/ethnicity. Instead, we need to come to appreciate that every visitor is a unique individual, each capable of having a wide range of very different kinds of visitor experiences (even though currently most visitors only select from a very limited palette of
possible experiences). Finally, it demands that we come to accept that the long-term meanings created by visitors from their time at coastal or marine tourism sites are largely shaped by the short-term personal, identity-related needs and interests of the individual rather than by the goals and intentions of the tourism site’s staff.

The result of this new thinking is a model of the leisure-learning experience framed around what I call the visitor’s identity-related visit motivations; the series of specific reasons that visitors use to justify as well as organize their visit, and ultimately use in order to make sense of their tourism experience. Visitor’s identity-related motivations emerge as important because they provide a window into this complex system, a way to reframe the leisure-learning experience so that it simultaneously captures important and key realities of the visitor as well as significant and critical realities of the tourism site. It is not just about the visitor nor is it just about the tourism site; it is about how these two realities come together as one. Let me state explicitly that what I’m proposing is not just a fancy new way to repackage what we’ve always said and done. I believe that what I’m proposing represents a fundamental shift in how we frame our thinking about the leisure-learning experience. In this new typology, neither the visitor nor the tourism site and its educational content are immutable and fixed; each are fluid and changing – the same individual can engage with the same educational content in fundamentally different ways depending upon their current identity-related visit motivations. To be useful, I’ve attempted to come up with a way to simplify this vast complexity into a manageable package, one that meaningfully and validly connects all of the personal, social and physical realities of a tourist’s leisure-learning experience.

The essence of the model is that each museum visit experience is the result of a coming together of an individual’s identity-related needs and interests and the individual’s and society’s views of how a specific tourism experience can satisfy those needs and interests. The tangible evidence of the confluence of these perceptions is the visitor’s identity-related visit motivations. These visit motivations create a basic trajectory for the individual’s tourism experience. That trajectory is influenced, while at the tourism site, by the factors outlined by the Contextual Model of Learning. Coming out of the visit, the individual uses his/her tourism experience to enhance/change his/her sense of identity and his/her perceptions of the tourism site; as well as, in a small but significant way how society perceives this and other comparable tourism experiences.

The basic outlines of the model are as follows. The leisure-learning experience actually begins before anyone ever sets foot in a tourism site. It begins with the confluence of two main streams of thought on the part of the prospective visitor.

- An individual desiring to satisfy one or more identity-related needs and desires decides to try and satisfy one or more of these needs through some kind of leisure time activity.
- The individual possesses a set of generic as well as specific mental models of various tourism settings, including potentially coastal or marine tourism sites that individually and collectively afford various leisure-related activities.

The two streams of thought – leisure needs and site affordances – come together when an individual makes a decision that visiting a specific tourism site will be a good thing to do in his/her leisure time. That decision is generally justified by the prospective visitor believing that a good match exists between that individual’s perceptions of what a particular tourism site affords in terms of leisure-related opportunities and the specific leisure-related needs and desires that s/he possesses at that particular time and place. This decision-making process results in the formation of what I have referred to as identity-related visit motivations (Falk, 2006; 2009). These ideas build upon the pioneering work by Driver and Tocher (1970) who developed what was known as the "experiential approach" to leisure decision making. Later extended by Driver and a number of his associates, the
experiential approach suggested that leisure experiences should not be viewed merely as an activity such as hiking, fishing, camping, or shopping but rather “should be conceptualized as a psycho physiological experience that is self-rewarding, occurs during no obligated free time, and is the result of free-choice” (Manfredo & Driver, 1996: 209).

Although this entire process of conceptualizing actually happens and is thus theoretically “observable,” much of this process may actually occur below the level of consciousness. However, following on the work of Linville (1985) and Simon (1997, 1998, 1999, 2004), my premise is that, as active meaning seekers, most visitors to tourism sites engage in a degree of self-reflection and self-interpretation about their visit experience, and it is that part of the process that becomes “visible.” According to Simon (2004: 45) “through self-interpretation, people achieve an understanding of themselves or, in other words, an identity, which in turn influences their subsequent perception and behavior.” In Simon’s model, self-interpretation involves a varying number of “self-aspects” – a cognitive category or concept that serves to process and organize information and knowledge about ones’ self. According to Simon (2004: 46), self-aspects can refer to:

- generalized psychological characteristics or traits (e.g., introverted), physical features (e.g., red hair), roles (e.g., father), abilities (e.g., bilingual), tastes (e.g., preference for French red wines), attitudes (e.g., against the death penalty), behaviours (e.g., I work a lot), and explicit group or category membership (e.g., member of the Communist party).

In other words, within a specific situation, individuals make sense of their actions and roles by ascribing identity-related qualities or descriptions to them. The research of Cantor, Mischel and Schwarz (1982) and Schutte, Kenrich and Sadalla (1985) reinforce this model, they found that individuals do indeed construct identity-relevant situational prototypes that served as a working model for the person, telling him or her what to expect and how to behave in situations of a particular type. I believe this is quite likely what visitors to tourism sites also do. Thus the visitor’s self-aspects, manifested in their identity-related visit motivations which people use to describe to themselves their reasons/goals for visiting the tourism site, become a tangible part of the process, and thus amenable to observation and analysis. The other parts of the process are typically much more deeply submerged in the person’s mind/unconscious and thus are much more challenging to “see.”

All of this occurs prior to the visitor actually arriving at their tourist destination – it can months prior or minutes prior, but each visitor arrives armed with some kind of identity-related visit motivation. These identity-related visit motivations in turn strongly shape the actual visit; creating a basic trajectory for the visit. The specifics of what a visitor actually sees and does are strongly influenced by the factors described by the Contextual Model of Learning:

- Personal Context: The visitor’s prior knowledge, experience, and interest.
- Physical Context: By the specifics of the settings, exhibitions, programs, objects and interpretive materials they encounter.
- Sociocultural Context: By the within- and between-group interactions that occur while in the setting, including any facilitation by staff or guides and visitor’s cultural experiences and values.

As described by Lee and Shafer (2002; 2005) the visitor perceives his/her tourism experience to be satisfying if this marriage of perceived identity-related needs and site affordances prove to be well matched; in other words, visitors achieve what they expected. If expectations are not met, the visitor perceives that his/her museum visitor experience was less-than-satisfying. According to Lee,
Shafer and Kong (2005), perceptions were more important than situations. Although all the various episodes and interactions that occurred during a leisure situation were involved to a greater or lesser extent in the algorithm of a visitor’s ratings of satisfaction, overwhelmingly most important consideration was how visitors saw themselves within the situation. In particular, visitor’s ratings of satisfaction were most strongly associated with the degree to which their self-identity and identity-related needs were satisfied. And these, of course, turned out to be directly related to their entering expectations and motivations for the visit. Similar findings have been documented in other investigations of tourism (del Bosque & Martin, 2008; del Bosque, Martin & Collado, 2006).

During and immediately after the visit the visitor begins to construct meaning from the experience. The specifics of the meaning someone makes of their tourism experience is largely shaped by the visitor’s pre-visit identity-related motivation and the realities of the tourism experience (under the influence of the factors highlighted in the Contextual Model of Learning). The following factors make certain experiences and memories more salient and thus memorable than others:

- The choice and control visitors exercise over the experience
- The emotional nature of the experience
- The context and appropriateness of what they encounter in the setting.

The resulting meanings the visitor constructs of their tourism experience generally fall into two broad categories. Since people visit coastal and marine tourism sites first and foremost to satisfy one or more identity-related needs, it is not surprising that the major outcomes most visitors derive from these visit experience relate primarily to identity-building. The sense of self that the individual projects on the visit, typically expressed as self-aspects, is strengthened, modified and/or extended by the tourism experience (Falk, 2009). Given the very diversity of identity-related needs that motivate people to visit tourism sites, the range of identity-related outcomes is also diverse; ranging from increased understandings of ecology, culture or history to enhanced feelings of mental well-being. A secondary outcome is that the individual also enhances his/her understanding of coastal and marine settings. By virtue of direct experience in the setting the individual’s working perceptions of what one does in such a setting in general and this setting in particular are reinforced and/or reshaped. Through communications with others the individual helps to influence not only his/her own understanding of coastal and marine tourism settings, but the broader community’s perceptions as well. These two types of meanings and understandings flow back into the basic model described above. Past tourism experiences shape the individual’s future tourism decision-making as well as contributing to other potential tourists’ future visits through word-of-mouth dissemination of information about the positives and negatives of visit experience to friends and family. Such word-of-mouth dissemination actually represent the primary mechanism through which the public learns about and decides to visit a tourist site (Hudson, 1999; Opodo, 2008).

To date, research by my colleagues and I (Falk, 2009; Falk, Heimlich & Bronnenkant, 2006; Falk & Storksdieck, in press; Storksdieck & Stein, 2007) have substantiated the validity of this model for understanding why individuals visit a range of free-choice learning settings, how they behave within the setting and perhaps most importantly, what meanings they derive from the experience. Additional investigations are currently planned to further test this model. When focusing on museum-like settings the public converged on just five core identity-related visit motivations. I categorized these five motivations using the terms: Explorers, Facilitators, Experience Seekers, Professional/Hobbyists and Rechargers (Falk 2006, 2009). It is reasonable to assume that these same five identity-related motivations occur in most free-choice learning-oriented coastal and marine free-choice learning tourist settings as well, though other motivations may also occur.
CONCLUSIONS

As the 21st century progresses, more and more people will acquire sufficient affluence to engage in leisure and tourism. The focus of these individuals will continue to inexorably shift from the workplace to leisure, from strivings for survival to searching for personal fulfillment and satisfaction. Coastal and marine tourism in the Knowledge Age will become ever more centered upon a quest for something larger, something more personally fulfilling. The quest for identity, enacted through leisure, is and will continue to be a dominant theme of this new century. Each individual will seek to build their personal and group identities, using their ever-expanding, but ever more precious leisure time for accomplishing this. And befitting a Knowledge Age, increasingly identity-laden leisure activities will come with some kind of learning overlay. Individuals go whale watching in order to see one of the wonders of the natural world and broaden their sense of connection to the planet; in addition it is hoped that they will also feel a greater commitment to preserving species like whales and protecting natural resources. Adults visit the aquarium in order to learn more about marine life but equally if not more frequently they visit so that their children can have experiences that will enrich their lives, and in the process the adult builds his/her sense of personal identity of being a good parent. The long-term memories of the experience primarily relate to good family times and a sense of pleasure about all the things their children discovered.

As we continue to transition into this new Knowledge Age leisure and learning will become increasingly synonymous. Those leisure experiences that combine a high degree of self-enrichment and self-actualization with a high degree of enjoyment and ease of access (physical and mental) will be highly prized. More and more people will be seeking to spend more of their time engaging in leisure experiences that afford opportunities to both better understand the world and better understand themselves, because leisure experiences that enable us to learn will also enable us to build identity. Accordingly, we need research tools that capture both the motivations for visiting destinations and the outcomes that result from those visits. The model reported here represents an initial step toward envisioning such an integrated set of tools.

REFERENCES


TOURISM IN REGIONS OF NATURAL RESOURCE DECLINE; A NEWFOUNDLAND CASE STUDY

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ABSTRACT

Tourism is increasingly touted as a development opportunity for coastal and rural areas affected by natural resource decline. As commercial fisheries face depletion the world over, planners and governments look to tourism to help coastal communities recover from economic crisis, but little work has been done to explore if the investment in tourism can ever replace the full human ecological value of the fishery, including its impacts on a region’s culture, economy, and environment. This ethnographic study examines the impact of the 1992 cod moratorium on Newfoundland's coastal communities over the last 17 years, and particularly how marine heritage tourism has emerged as a model in the province's revitalization attempts. Because the cod moratorium triggered Newfoundland’s modern tourism industry, the island provides a finite time and space within which to study the impact of the industry on a rural place and its people. This study reports on dozens of interviews with Newfoundlanders involved in tourism and fisheries (including current and former fisherman and fish plant workers, boat captains, tour operators, community development and government representatives, residents, community leaders, academics, and front line staff at tourism destinations, visitor centers and museums). Interviews and first hand observations of marine tourism destinations show that marine heritage, in particular, has contributed to both the revitalization of devastated outports and the rise of tourism in these coastal communities. Though the study shows that tourism will never replace an exhausted natural resource, it can play an important role in the future of coastal and rural areas.

Keywords: Heritage, fisheries, Newfoundland, tourism, coastal.

REFERENCES


SUCCESSFUL INTERPRETATION IN GREAT BARRIER REEF TOURISM: DIVE IN OR KEEP OUT OF IT?

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ABSTRACT

Marine wildlife tourism has become one of the fastest growing tourism sectors. In the context of the Great Barrier Reef, it focuses on five types of activities: (i) “swim-with” programs, (ii) surface watching activities (whales and dolphins); (iii) diving (corals, sharks, etc), (iv) reef snorkeling trips and (v) glass bottom boat tours. It is proposed that management, product design and experience, and outcome will be different for each of these and not all findings within marine wildlife tourism are transferable between tourism types.

This paper looks at patterns of activities on the Great Barrier Reef (GBR), using visitors surveys (N=3407) collected in a four year study of GBR tourism. Results suggest that the most popular activity is snorkeling (75.5%), followed by swimming (46.2%) and glass bottom boat tours (43.6%). Divers made up a total of 25% of the sample. There were significant differences in the travel experiences and reef tour satisfaction ratings between respondents participating in different types of activities. Non-divers were less likely to have been to other reefs before, less motivated to visit the region to see the GBR, staff had a greater influence on their satisfaction, and they were more likely to say that interpretation during their experience changed their appreciation of the reef and their behaviour. Interpretation had the greatest influence on the behaviour and attitudes of respondents who had participated in a combination of activities, and these respondents also rated their satisfaction with the tour higher than other groups. The implications of the findings are discussed.

Keywords: Great Barrier Reef, activities, interpretation

INTRODUCTION:

Marine wildlife tourism is one of the fastest growing tourism sectors (Higham & Lück, 2007). Orams (1999, p8) highlights the distinct nature of marine tourism, pointing out that it “occurs on, in and under a medium that is alien to humans”; the implications are that it is more dependent upon equipment, and safety issues are more prominent. Although Garrod and Gössling (2008) contend that diving as a recreational activity has been popular for at least 75 years, the major break-through for the rapid development of recreational diving has been attributed to the invention of the “aqualung” by Jacques Cousteau and Emile Gagnan in the early 1940s (Martinez, 2008; Cater & Cater, 2007; Dimmock, 2007). This aqualung is a “self-contained underwater breathing apparatus”, better known by its acronym SCUBA (Garrod & Gössling, 2008). After the introduction of the SCUBA equipment, diving experienced enormous growth rates, as illustrated by the worldwide certification figures by the largest professional diving organization, PADI: Having certified 3,226 divers in its first year (1967), this number grew to 932,486 divers in 2008, or a total number of...
17,532,116 divers throughout PADI’s history (PADI, 2009). Jennings (2007) estimates that there are between five and seven million active divers worldwide. Another popular tourism activity that demands less training and more basic equipment is snorkeling. Due to the easy use of snorkel, mask and fins, this activity can be adapted for participation by almost anybody (O’Bannon, 2008). It is particularly popular in areas with shallow coral reefs, where snorkelers have outstanding views of the marine life not far below them. In many parts of the world, snorkeling tour boats transfer tourists to coral reefs and drop them at the most suitable spots for this activity. More specialized snorkeling tours include larger wildlife, such as whale sharks or dwarf minke whales (Cater & Cater, 2007; Valentine et al., 2004).

For less active and adventurous tourists, more passive forms of reef tourism have been developed, including glass-bottom boats and semi-submersibles. Glass-bottom boats are fitted with a viewing pane of transparent material (clear acrylic or glass), allowing a view on the marine life below, while seated in the boat (Lee, 2008). Semi-submersibles are – in contrast to submersibles – not diving into the depths of the sea, but have a large portion of the vessel under the surface. This lower part of the vessel part is fitted with windows and allows passengers to view the bypassing marine wildlife. Shallow-draught, flat-bottomed glass-bottom boats and semi-submersibles are particularly suitable for coral reef viewing (Coghlan, 2008, Cater & Cater, 2007).

Many of these marine tourism activities include some distinctive characteristics not applicable to the general tourism research. In particular, the difficulties presented by reef tourism to the successful interpretation of the reef environment and tourism experience will be presented and discussed in this paper. Moscardo (2001) and Coghlan and Prideaux (2009) highlighted the influence of interpretation in visitors’ reported satisfaction with their reef experience. However, marine tourists are faced by a number of unique challenges in this alien environment, in which humans may face mobility issues (e.g. swimming in a swell or strong current), whilst wildlife on the other hand may be highly mobile in a three dimensional space. Furthermore, communication between guides and visitors may be very limited, depending on the level of immersion in the marine environment. In this paper, the role of immersion, or activity type, on reef interpretation, as well as other aspects of the reef experience, including differences in visitor profiles between respondents who stay out of the water, go snorkeling, or dive fully in to the reef environment, will be investigated.

The characteristics of marine wildlife tourism

The wildlife-specific marine tourism sector includes five major types of activities: (i) “swim-with” programs (whale sharks, pinnipeds, cetaceans, manatees), (ii) surface watching activities (whales and dolphins); (iii) diving (coral reefs, temperate waters, sharks, etc), (iv) reef snorkeling trips and (v) glass bottom boat tours. For each of these types of activities, many studies can be identified in the literature, (Dobson, 2007; Garrod & Gössling, 2008; Higham & Lück, 2007; Orsini & Newsome, 2005; Shackley, 1992) and several books have attempted to integrate existing research and develop frameworks for researching marine tourism (Orams, 1999; Garrod & Wilson, 2003; Garrod & Gössling, 2008; Cater & Cater, 2007). However, whilst they all take place in or around a marine (sometimes coastal) environment and feature wildlife as a main attraction, it is suggested here that wildlife is the characteristic, perhaps the only one, that the five types of tourism share. The platforms for in-water activities, surface activities (sometimes land-based in the case of whale watching), the proximity of wildlife encounters, and the skill-based required for the activity may be quite different.

Issues in marine wildlife tourism
It is apparent that management, product design, experience and outcome (measured as a satisfaction index) will be different for each activity type and that not all findings within marine wildlife tourism are transferable between tourism types. In particular, there are significant differences between on-water, in-water and below-water activities that have implications for product design, safety issues and environmental or ecological sustainability. For the purposes of this paper ‘in-water’ is defined as snorkeling activities, on-water is defined as glass bottom tours and ‘below-water’ is defined as uncertified and certified diving. ‘On-land’ activities, while not further considered in this paper are defined as activities that support the viewing of turtles hatcheries, shore viewing of whales, marine themed exhibits such as aquariums and watching penguins, seals and walrus enter or leave the sea.

**Interpretation in marine wildlife tourism**

In the marine environment interpretation has been described as the communication between tour operators and visitors within the tourism setting (Lück, 2008). Wearing et al. (2008) adds that as a ‘communication tool’ interpretation allows visitors to connect with their tourism destination whereas Munro, Morrison-Saunders and Hughes (2008) look at interpretation more as an influencing tool, influencing visitors to change their attitudes, beliefs and behaviour. In a marine wildlife setting visitors experience marine wildlife first hand, and according to Wearing et al. (2008) if the interpretation is delivered well, the visitor is more satisfied with the tour operator, potentially leading to positive word of mouth recommendations. Some authors have argued that interpretation makes the visitor feel part of the conservation effort and with eco-tourism certification playing an integral part in the management of GBR reef tourism, it is important to know that interpretation can influence conservation views and behaviours (c.f. Beaumont, 2001). Specifically, Chadwick (date unknown) believes that visitors no longer travel to the Great Barrier Reef for a day in the sunshine but require and demand more interpretative activities. Madin and Fenton’s (2004) study on the Great Barrier Reef revealed that interpretation on the reef does indeed alter the visitors understanding of conservation and marine life issues.

Marine wildlife interpretation is presented by staff, often guides with qualifications in marine biology, during a range of activities including scuba dive briefs, guided snorkel tours, marine biology talks/videos, fish feeding presentations, glass bottom boat/semi-submersible tours. Interpretation is also provided through the print medium as educational signs, books and brochures. Lück (2003) found that personal interpretation by well-trained staff was the most effective method of delivering interpretation. This observation suggests that interpretation in settings where there are large groups (glass bottom boat/semi-submersible rides, marine biology presentations) is likely to have less of an impact than during activities based around smaller groups (guided snorkel tours).

Some activities are not structured to allow significant interpretation during the activity, diving being the major example. In the case of diving it has been argued that the experience is often more important for the participant than seeing marine life. However, as Orams (1999) suggested personal interaction with memorable animals such as Maori Wrasse, sharks, whales, turtles and dolphins increases visitor’s satisfaction levels.

Based on the literature we can expect that visitors who interact with marine wildlife (snorkeling/diving) will have higher satisfaction levels than visitors participating in no interpretative activities or only taking glass bottom boat/semi-submersible trips (Orams, 1999). Previous studies (Wearing et al., 2008) suggested that the more activities/interpretation a visitor undertakes the more satisfied they will be. There is likely to be a difference in the level of attitude change between tourists who have previously had marine wildlife experiences and those that have not. Therefore it is possible that those experiencing new encounters and those undertaking more than one interpretative activity will have the greatest satisfaction and more appreciation of the reef.
This paper adopts a case study approach to the issue of interpretation in a marine environment and examines patterns of activities on the Great Barrier Reef (GBR). The research identifies differences between in-water activities and under-water activities to develop an activity spectrum illustrated in Figure 1. Of particular interest are the opportunities for interpretive learning under ‘in-water’ and ‘under-water’ activity conditions. Whilst it may appear that the under-water condition invokes a larger investment in getting close to the reef structure and its associated marine life, the opportunities for learning may be constrained by time, a pre-occupation with diving preparations, the level of skill of both the diver and the dive instructor/guide and the reduced opportunities for communication while participating in the activity. Snorkelers on the other hand, may have a more superficial interaction with the marine life, but also have more opportunity to interact with crew and ask questions, may have more time to undertake other activities such as marine biology tours and glass bottom boat tours, and may be able to focus more on their external environment and less on the skills required to simply remain in the marine environment. As a comparison, we also investigate the experiences of passengers who only undertook glass bottom boat or semi-submersible tours, as an ‘out-of-water’ activity that requires a lower investment of funds compared to diving, has a low level of interaction with marine animals and has a high level of communication opportunities. Figure 1 presents some of the features of each activity condition and how these might influence the visitor experience.

Figure 1 has two scales: the vertical scale represents the investment in time and money that is required to have the opportunity to get close to marine wildlife while the horizontal scale represents the opportunity to communicate with tour staff/guides. Thus visitors undertaking a glass-bottom boat trip have considerable opportunities to communicate with staff but a greatly reduced opportunity to get close to marine animals.

![Figure 1: The proposed relationship between activity type, immersion and opportunities for interpretive learning.](image)

**AIMS:**

This paper investigates the correlations between tourists’ level of immersion within the marine environment defined as on-water, in-water and under-water experiences and their perception of the quality of interpretation they received. The paper also examines the correlation effects between activity type and:

a) visitor profile
b) travel motivations and previous exposure to reef environments

c) trip satisfaction including importance of the natural environment to the overall experience.

METHODS:

Visitors surveys used in this research were collected as part of a four year study of GBR tourism funded by the Marine and Tropical Sciences Research Facility (MTSRF). The survey was undertaken with the assistance of 11 operators across four regions (Port Douglas, Cairns, Townsville and Airlie Beach). The diversity of operators and locations ensures that nearly all the activities that are offered on the reef are represented, including pontoon trips, helicopter tours, all SCUBA diving activities (intro/resort, certified and training), helmet dives, snorkel tours, viewing chambers, semi-submersible tours, glass bottom boat tours, sailing and visiting the islands. In this study, 77% of surveys came from pontoon-based operators, 16.3% from smaller day boats that visit coral cays, 3.5% that use moorings on the outer reef, and 3.2% of surveys came from island resorts.

The survey instrument examines socio-demographic profiles, travel behaviour, reef experiences and activities, satisfaction and travel motivations using closed questions. Open-ended questions were used to examine best and worst experiences, memorable information gained from interpretation activities and the factors that influence satisfaction. For the purpose of this study, only the surveys collected by partner operators that offered glass bottom boat or semi-submersible tours, snorkeling and certified and resort diving were used. The final sample included five operators, and 3407 respondents. Of these, 127 did not undertake any of the activities being investigated, 1430 respondents participated in one activity type (out-of-water, in-water and under water activity) and the remainder participated in more than one type of activity. All completed surveys were included in the analysis, were input into SPSS Version 17.0 and coded to reflect no activities (0), out-of-water only (1), in-water only (2), underwater only (3) and combination (4). The finally tally is shown in Table 1. In cases where respondents had undertaken more than one type of activity, we find that only rarely did they combine all three types of activities (N = 197), underwater and out-of-water activities (N = 50), or even in-water and underwater activities (N = 158).

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. no activities*</td>
<td>127</td>
<td>3.7%</td>
</tr>
<tr>
<td>1. out-of-water</td>
<td>326</td>
<td>9.6%</td>
</tr>
<tr>
<td>2. in-water</td>
<td>844</td>
<td>24.8%</td>
</tr>
<tr>
<td>3. underwater</td>
<td>260</td>
<td>7.6%</td>
</tr>
<tr>
<td>4. combination</td>
<td>1850</td>
<td>54.3%</td>
</tr>
</tbody>
</table>

*no activities in this case refers to respondents who did not go on a glass bottom boat tour, snorkeling or diving.

Table 1: the percentage of respondents in each activity category

Table 2 outlines the combinations of activities participated in by respondents. The most popular combination of activities was snorkeling and a trip on a glass bottom boat or semi-submersible. Divers, both certified and uncertified, were the least likely to participate in activities beyond diving, with 66% of resort divers going snorkeling and only one third undertaking a glass bottom boat tour. Even fewer (55.7%) certified divers went snorkeling and only 28% went on a glass bottom boat tour.

Table 2: the percentage of respondents in each activity category

<table>
<thead>
<tr>
<th>Activity Combination</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>snorkeling and glass bottom boat trip</td>
<td>1850</td>
<td>54.3%</td>
</tr>
<tr>
<td>snorkeling and semi-submersible</td>
<td>50</td>
<td>1.5%</td>
</tr>
<tr>
<td>snorkeling and traditional diving</td>
<td>158</td>
<td>4.6%</td>
</tr>
<tr>
<td>snorkeling only</td>
<td>844</td>
<td>24.8%</td>
</tr>
<tr>
<td>traditional diving only</td>
<td>260</td>
<td>7.6%</td>
</tr>
<tr>
<td>glass bottom boat only</td>
<td>326</td>
<td>9.6%</td>
</tr>
<tr>
<td>no activities</td>
<td>127</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

*no activities in this case refers to respondents who did not go on a glass bottom boat tour, snorkeling or diving.
Table 2: Activities undertaken by respondents participating in a combination of activities.

To understand the activities available to respondents and how this might influence the manner in which they arrange their activities on an average day at the reef, Table 3 illustrates a typical reef trip schedule highlighting the opportunities to interact with crew and participate in different activities. It should be noted that this table reflects timings for tours where the reef is some distance from the coast. Where the reef is located closer to the shore the timings for the trip to and from the reef site will be shorter.

<table>
<thead>
<tr>
<th>Time</th>
<th>Non-swimmers</th>
<th>Snorkelers</th>
<th>Divers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30am – 8:45am</td>
<td>Arrive at boat</td>
<td>Arrive at boat, met by dive instructors, discuss diving and complete paperwork</td>
<td></td>
</tr>
<tr>
<td>9:00am – 9:15am</td>
<td>Boat safety briefing and activities introduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:15am – 9:35am</td>
<td>Travel to reef</td>
<td>Discuss snorkel tour with marine biologist</td>
<td>Dive briefing</td>
</tr>
<tr>
<td>10:00am – 10:15am</td>
<td>Marine biology presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:25am – 10:35am</td>
<td>Arrive at reef – destination briefing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:45am – 11:00am</td>
<td>Relax on pontoon/boat</td>
<td>Gear up for snorkeling</td>
<td>Gear up for dive</td>
</tr>
<tr>
<td>11:00am – 11:10am</td>
<td>Relax on pontoon/boat</td>
<td>Get into water</td>
<td>Skills testing</td>
</tr>
<tr>
<td>11:10am – 11:30am</td>
<td>Glass bottom boat/semi-submersible tour</td>
<td>Snorkeling or guided snorkel tour</td>
<td>Scuba dive</td>
</tr>
<tr>
<td>11:30am – 11:40am</td>
<td>Glass bottom boat/semi-submersible tour</td>
<td></td>
<td>Dive debrief</td>
</tr>
<tr>
<td>12:30pm – 1:00pm</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:00pm – 1:10pm</td>
<td>Fish feed</td>
<td>Gear up for dive</td>
<td></td>
</tr>
<tr>
<td>1:10pm – 1:45pm</td>
<td>Relax on pontoon/boat</td>
<td>Snorkeling, snorkel tour or glass bottom boat/semi-submersible tour</td>
<td>Scuba Dive</td>
</tr>
<tr>
<td>1:45pm – 1:55pm</td>
<td>Relax on pontoon/boat</td>
<td></td>
<td>Dive debrief</td>
</tr>
<tr>
<td>3:00pm</td>
<td>Get back on board boat for return to shore</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:30pm</td>
<td>Trip finishes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: An example of a typical reef day trip and the range of activities undertaken.
Methodological limitations

It must be noted that there are several limitations to the survey distribution method used in this research. The first is that survey distribution and collection is entirely dependent on boat crews, which creates the potential for surveys to be misplaced or forgotten amongst other crew duties, and may lead to concerns over the randomization of sampling, both in terms of respondents and conditions under which distribution occurs (rough/calm seas, no or lots sunshine, poor/good water clarity). Whilst boat crews have been asked to maximize sampling randomization (e.g. asking the crews to approach every fourth table on the larger boats, or every third seated person on the smaller boats, on set days of the month), it cannot always be guaranteed that staff, particularly new or casual staff, are following these instructions. The issue of randomization has been addressed through large sample sizes, built up through time. The usual limitation of seasonality was addressed by the monthly collection frame that was used.

RESULTS

Results are presented sequentially, each new result building on the previous result in the sequence. The outline of results commences with an overview of the profile, activities, motivations and satisfaction of respondents followed by an analysis of the relationship between activities based on:

- visitor profile
- travel motivation & previous reef experiences
- interpretation, and likelihood of stating that respondents saw marine animals
- satisfaction scores and influencing factors.

Overview of results:

This section provides an overview of the results, independent of activity type. On a gender basis, 57% of the respondents were female. By nationality, 47% were Australian, followed by UK & Ireland (22.1%), North American (14.4%) and Europeans, (10.4%). Almost one third of respondents (29.7%) were between 20 and 29 years old, with 18.2% between the ages of 30 and 39 and 31% between 40 and 59 years of age. The most frequently cited occupation was professional (27.0%), followed by students (14.6%) and retirees (10.0%). Thirty nine percent of respondents were travelling with their partner, another 19.9% were travelling in family groups, and 17.1% were travelling with friends.

Visiting the GBR was the most important travel motivation for these respondents with a mean score of 4.68 on Likert-scale where 1 = not at all important and 5 = very important. Other important motivations included “snorkeling and diving” (4.04), ‘Rest and Recreation’ (4.02), “experiencing the natural environment” (3.96), “Visiting the beaches” (3.67). For 76.2% of respondents, this was their first visit to their holiday destination and only 29% had visited the GBR previously. However, 43.3% had visited other reefs before their trip to the GBR. Thirty percent of respondents planned to dive the reef during their trip, and of these, 36.6% had no prior diving experience, and 28.5% had logged less than five dives. Twenty five percent of respondents who planned to dive the reef had logged 10 dives or more before this visit to the GBR. The most commonly activity participated in was snorkeling (77.1% of respondents) followed by glass bottom boat tours (55%), swimming (50%), viewing marine animals (38.2%), resort diving (12.5%), snorkel tours led by marine biologists (11.8%) and certified dives (11.3%).

Over half the respondents (53.7%) felt that they had somewhat increased their knowledge of the reef after this visit, 41.1% saying that it had greatly increased their knowledge, and 5.3% saying that they had gained no knowledge. The most commonly used source of information was TV.
documentaries and films such as *Finding Nemo* (38.6%), whilst 32.7% of respondents learned about the reef from a biology talk given during their trip. Videos shown on board the vessel were mentioned by 24.3% of respondents. Almost two thirds (62.4%) of respondents said that the interpretation had changed their appreciation of the reef, and another 52.4% said it changed their behaviour at the reef. The most memorable information gained from the interpretation largely fell into two categories, natural science (31.7%) and management & threats (20.8%). The most common responses were the fragility of the reef, not to touch/stand on the reef, the diversity of the marine environment and how slow the reef grows. Individual species were also common responses such as turtles, sharks, and Maori Wrasse. Only 1.6% of those surveyed responded that they learnt nothing from their trip. The most frequent request for further information on the reef related to the conservation of the reef (23.5% of respondents), the history of the reef (21.4%) and the biodiversity of the reef (20.8%).

Satisfaction with the reef experience was relatively high with a mean score of 8.49 out of a 10 point Likert scale (where 10 was the highest score). Almost two thirds (63.4%) of respondents felt that their expectations of the reef had been greatly met, 64.2% said the same of their experience at the reef while 84.3% felt that they had received good value for money, and 94.4% indicated that they would recommend a visit to the reef to others. The quality of service and staff conduct accounted for 48.2% of responses to the factors that affected satisfaction, whilst another 22.0% mentioned the quality of the natural environment, and 20.7% cited the weather as a factor. Snorkeling and diving accounted for 13.0% of responses concerning satisfaction ratings, but 44.8% of responses concerning the best experience of the day. The marine life itself accounted for 28.5% of responses, and staff were mentioned in 12% of responses. The worst experiences of the day focused on poor weather (27.5%). In 25% of cases, respondents felt that they had had no bad experience.

It is against the backdrop of these results that we now examine variations in visitor profiles, travel motivations, previous reef experiences, likelihood of stating that respondents saw marine animals, learning and interpretation, and satisfaction scores and influencing factors according to the types of experiences undertaken by respondents (out-of-water, in-water, underwater, combination, or none). For each set of variables, we highlight those that show significant variation using a Chi-squared test or ANOVA tests (travel motivations and satisfaction scores) where frequencies or means are compared across activity types.

**Differences in Visitor Profiles based on activity type**

All visitor profile variables investigated showed significant variation across activity types. Table 4 lists some of the significant differences that were noted between respondents undertaking different activities. For instance, there was a disproportionately higher percentage of females who stayed out of the water (65.1% of all out-of-water respondents) and a higher proportion of men who went diving (55.8% of all divers). International visitors, particularly Americans (14.6%), were more likely to stay out of the water, whilst Australians were more likely undertake a combination of activities. Some of the general differences that were found between groups are that:

- Out-of-water respondents were more likely to be female, international (USA), older, retires and travelling as a couple or in tour groups
- In-water respondents were more likely to be European, 20-29 years old, students
- Underwater respondents were more likely to be male, 20-29 years old and solo travelers
- Combination respondents were more likely to be Australian and travelling in family groups.

Interestingly, there was no distinct profiles for respondents who did not undertake any of the activities mentioned above.
Differences in travel motivations and reef experiences based on activity type

Repeat visitors were more likely to plan to dive and undertake underwater activities (39% of repeat visitors went diving). Respondents who had previously visited other reefs were also more likely to go diving (65.9% of underwater respondents). Looking at travel motivations, respondents who did not undertake any activities rated “visiting the GBR” significantly lower (4.5) than other respondents (4.7), whilst they were significantly more likely to rate “experiencing the natural environment” higher than other respondents (4.06). Underwater respondents rated “snorkeling and diving” significantly higher than any other group (4.45), particularly the out-of-water group (2.39).

Differences in interpretation & likelihood of seeing marine animals

Visitors’ likelihood of stating that they saw marine animals also varied according to the activity they undertook. Respondents most likely to say they saw marine animals fell into the combination group (47.8% of the combination group) or the out-of-water group (43.3%). Interestingly, of those who went snorkeling, 22.7% said they saw marine animals, and even fewer underwater respondents reported seeing marine animals (12.4%). Respondents who participated in a snorkel tour were most likely to say that they had seen marine animals (54%). A greater proportion of respondents (45.0%) who undertook a combination of activities felt that their knowledge had greatly increased as a result of their trip, whilst a significantly lower proportion of underwater respondents (28.0%) said that their knowledge had greatly increased. A similar pattern emerged with attitudinal and behavioural changes as a result of the trip. In both cases a smaller proportion of underwater respondents felt that their attitudes or behaviour had changed as a result of the information they received that day. The group of respondents most likely to say that their behaviour and attitudes had changed was the out-of-water and combination respondents (Table 4). In particular this may be a result of the different levels of underwater experience each group has experienced in the past.

<table>
<thead>
<tr>
<th>Activity Group</th>
<th>Changed attitude</th>
<th>Changed behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>No activities</td>
<td>56.8%</td>
<td>51.4%</td>
</tr>
<tr>
<td>Out-of-water</td>
<td>68.3%</td>
<td>53.5%</td>
</tr>
<tr>
<td>In-water</td>
<td>54.6%</td>
<td>47.8%</td>
</tr>
<tr>
<td>Underwater</td>
<td>53.5%</td>
<td>44.9%</td>
</tr>
<tr>
<td>Combination</td>
<td>66.7%</td>
<td>55.3%</td>
</tr>
</tbody>
</table>

Table 4 Differences in changed attitudes & behaviour between activity groups.

When asked what, if any, further information about the reef respondents would like to receive, we find that in-water and combination groups were most likely to request information about the biodiversity of the reef (21.4% and 21.7% respectively), whilst only 14.3% of the underwater group were interested in knowing more about the reef’s biodiversity. Combination respondents were also most interested in finding out more about the conservation of the reef (25.3%), whilst respondents who did not participate in any activity were the least interested (9.1%). Finally, underwater respondents were the least likely to want to know about the benefits that humans derive from the reef (1.4% compared to 18.5% of combination respondents).

Differences in satisfaction and best and worst experiences between activity groups:

By comparing satisfaction scores between respondents participating in different activities, a number of interesting patterns emerged. Firstly, whilst there are significant differences in satisfaction scores between participants in different activities, there is no immediate pattern to these results (Figure 2).
However, out-of-water respondents were most likely to feel that the experience had not met their expectations (6.7%) and that they were unsure that their trip represented value for money (11.1%).

Looking at the factors that influenced satisfaction and best and worst experiences of the day, many of the variables were stable across all activity groups; staff were consistently the most important influence in satisfaction scores, mentioned by 45.7% of no activities respondents increasing to 50% for the out-of-water respondents. The importance of staff as a best experience was also consistent. The weather as factor in satisfaction and worst experiences showed little variation between groups. Furthermore, no significant differences were noted between groups in the frequency with which they mentioned the marine wildlife as a best experience. Some significant differences were also noted in the frequency of responses that focussed on the natural environment as a determinant of satisfaction. This was highest for in-water respondents (27.4%) and lowest for out-of-water respondents (16.8%).

**DISCUSSION:**

The implications of the results presented in this study operate at two levels; first, we can consider how the results fit previous research and the model in Figure 1, by looking specifically at the influence of activity type on how interpretation is received and the effects on the reef experience. Next we can look at the correlations between activity type and visitor profiles and satisfaction, in order to make inferences about the future of reef tourism and product development and design.

In the first instance, we find that there does appear to be differences in each group of respondents (no activities, out-of-water, in-water, underwater and combination groups). In Figure 4, the model outlined in Figure 1 has been adjusted by overlaying interpretation and marine wildlife sightings data onto it. It is apparent that opportunities to communicate with staff have a greater influence on interpretation than proximity to the marine wildlife, supporting the findings of Orams (2000) and Luck (2003). However, the lower satisfaction scores of both the out-of-water and underwater groups show that whilst good interpretation may significantly increase satisfaction, there appear to be other confounding variables that influence satisfaction (for instance time pressures or travel motivations).
Figure 4: Differences in activity participation in the reef experience, interpretation and satisfaction.

Respondents who undertook a combination of activities were of particular interest as the scores of these respondents were consistently higher on all variables measured. They were the most likely to see marine animals, to feel that their knowledge greatly increased, that they would like more information about reef biodiversity and conservation. Their average satisfaction scores were significantly higher than others groups. These results indicate an interaction factor between the X axis and Y axis of Figure 1; greater proximity to marine wildlife and investment in the experience may produce a higher quality reef tourism experience when combined with more opportunities to communicate with staff. The staff of marine tour operators play an important role in mediating or shaping the reef tourism experience (c.f. Luck, 2003); staff consistently appear as the most influential factor in determining tourist satisfaction. Coghlan & Prideaux (2009) found that staff knowledge of the reef accounted for 10% of the open-ended responses to the question “what factors influenced your satisfaction score?”. This adds support to Wearing et al.’s (2008) findings that in relation to National Park surveys, personal interaction with park guides provided the most interpretative satisfaction with amount of interaction coming a close second. It is also worth noting the importance of activities schedules on reef tours, as demonstrated by Green (1997) who found that visitor satisfaction levels increased across a range of variables when the range of activities and the times that these were available were clearly communicated with tourists visiting the GBR.

This research also raises questions about the qualitative differences between personal interpretation offered by guides (and other staff) and impersonal interpretation, such as posters, signage, books and signage (Moscardo, 2002 & Moscardo et al. 1997). It is likely that there is a certain expectation that all crew (not only the marine biologist) will have a good level of knowledge of the reef, its biodiversity, its history and conservation status. However this may not always be the case, allowing for misleading or incorrect information about the reef from ill informed staff in cases where effective staff training is not implemented.

A second set of implications that arise out of these results focus on the variations in reef tourism experiences by different market segments of visitors to the reef. The data show that respondents’ socio-demographic profiles influence the types of activities undertaken. For example, domestic tourists (who were also repeat tourists) were the most likely to combine different activities and “get the most” out of their experience, and were also likely to say their behaviour and attitudes changed as a result of the interpretation provided. This is an encouraging result in a future scenario where international tourism numbers may drop in the short to mid-term across the GBR region. The lower satisfaction scores of international and older respondents are of some concern, however, it would...
appear that they too felt that they benefitted from the interpretation provided. The findings also show that there is a group of respondents (those with a mean score of 3.5 or less) who were less motivated to travel to the region to visit the GBR, and these same respondents were more likely to say that their expectation had not been met and they were unsure that the trip represented good value for money.

Conversely, the combination group had the highest satisfaction scores (a mean of 8.59), the greatest interest in and knowledge gain from interpretation. Domestic visitors made up half (49.5%) of this group. The current Global Financial Crisis is likely to produce a shift in the makeup of reef visitors in the future, potentially including an increase in the importance of domestic visitors. Research by Coghlan & Prideaux (2009) found that over half of domestic visitors had been to the Great Barrier Reef before, underlining the importance of repeat visitation for the economy of the region, and increasing the likelihood that these visitors would engage in profitable, upselling activities such as guided snorkel tours and certified or resort diving.

CONCLUSION

Using the results described in Figure 4, this study has revealed some interesting trends in reef tourism, visitor experiences, satisfaction and interpretation. The results confirm that up close, personal interaction with wildlife is not always a key ingredient in effective interpretation, whilst the mediating influence of staff is vital. Divers, who had invested heavily in getting close to reef wildlife did not appear to gain the full benefits of interpretation, whilst the respondents who stayed out of the water were more likely to experience behaviour and attitude changes. On the other hand, satisfaction with the experience did not correlate with an appreciation of the interpretation, leading to some interesting questions on the role of interpretation in tourism as a management tool or as a means to enhance the visitor experience. It is clear, however, that all staff must be able to provide adequate information on the reef, its management, history and inhabitants.

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SOCIO-ECONOMIC AND ENVIRONMENTAL ISSUES ASSOCIATED WITH THE INCREASING TOURISM ACTIVITY IN THE COASTAL ZONES OF KERALA

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ABSTRACT

Tourism improves the economy and provides livelihood to local population in the State of Kerala in India with beautiful nature, but with tremendous impact on the environment. Increasing number of houseboats pollute the coastal water bodies, affecting livelihoods of wetland dependent population as well as the existence of varieties of birds and fishes. Land reclamation in wetlands for resorts and roads has large impact on hydrology. Beach tourism worsens the environmental condition, disturbs traditional fishing activities, interfere with marine life and cause degradation of coastal habitats. Overextraction of groundwater by new hotels and apartments leads to salinity intrusion in aquifers. With globalisation and associated development, tourism industry is flourishing, inviting new social issues. Fake institutions harmfully exploit the traditional indigenous knowledge. Migration to new coastal urban centres creates competition and conflicts. Inflow of black money for investment in tourist areas affects the low and middle class population. New inland navigation canal trough the backwaters may further promote tourism, but will pay for environmental damage. Changes in sea level and climate may affect the tourism sector in future. Rules and regulations and mechanisms for the control of environmental and social issues become farce. Government tries to attract more tourists without a corresponding measure to enhance environmental ability and public safety. This paper is a comprehensive assessment of the impact of increasing tourism on the coastal zones of Kerala and its reflection in different facets of life. Suggestions for an appropriate policy and its effective implementation have been provided.

Keywords: tourism, Kerala, environment, economy, policy
DIVING TOURISM IN MOZAMBIQUE – AN OPPORTUNITY AT RISK?

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seadean@gmail.com4

ABSTRACT

Diving tourism has grown exponentially all around the world. In Mozambique, much terrestrial wildlife was devastated during the war, which left national parks with little to attract tourists. On the other hand, the Mozambican Indian Ocean is relatively unexplored and has a rich biodiversity, including a high abundance of ‘big animals’ such as whale sharks and manta rays that offer great opportunities for the diving industry. This paper examines divers’ perspectives and demographics in Tofo Beach, Inhambane. The paper discusses the urgent need for strategic planning and good management to maintain the attractiveness of the area and avoid loss of biodiversity. Analysis is based on data collected from 530 semi-structured questionnaires for divers and participatory observation during field research from April to December 2008. Divers were classified according to their dive experience level and their motivations for travelling. The findings show that for 74% of respondents the diving component was a key incentive to visit Mozambique. Most visiting divers to Tofo are experienced, and particularly wish to interact with whale sharks and manta rays. It is suggested that while marine tourism is a potential opportunity for sustainable tourism in Mozambique, it may be at risk due to the lack of management combined with the dependence on just a few marine species.

Keywords: diving tourism, Mozambique, marine tourism, sustainable tourism

INTRODUCTION

The purpose of this study is to investigate divers’ demographics and experiences in Tofo Beach, Inhambane, Mozambique. This paper also discusses how the characteristics of diving in Tofo may influence the sustainability of the industry in the long term. This is the first study on diving tourism in Tofo Beach.

Since the signing of the peace agreement in 1992, tourism has increased in Mozambique. The government has put much effort into developing tourism as a way to improve the country’s economy (Ministério do Turismo, 2004). It is not the intention of this paper to discuss the issues related to economic impact of tourism, but rather to focus on understating a specific tourism sector in a particular area – diving at Tofo Beach. Mozambique terrestrial wildlife was hunted extensively during the “hungry time” of the war. Almost all big terrestrial animals suffered local extinctions (Ministry for the Coordination of Environmental Affairs, 1997) and the Mozambican government needs to invest resources to facilitate the recovery of the terrestrial wildlife. Terrestrial safaris are unlikely to be very valuable tourism attractions, at least in short term. On the other hand, the marine environment is still in good condition and the high concentration of charismatic species such as whale sharks and manta rays is an indicator that diving tourism might be a very substantial opportunity for wildlife tourism in Mozambique (Pierce & Marshall, 2008).
The main aim of this paper is to contribute to knowledge of marine tourism in Mozambique and to provide analysis of divers and their experience.

THE STUDY

Methodology

Study site

The study was conducted in Tofo Beach, Mozambique, which is located around 30km from Inhambane Town and is one of the main diving destinations in Mozambique (figure 1).

![Location of Tofo Beach and main diving destinations in Mozambique. The only dive areas that are inside protected areas are: Quirimbas National Park and Bazaruto National Park.](image)

Participant observation

Participant observation (Emerson, 2001) was used to gain in-depth understanding about tourist experiences and the main problems of dive tourism sustainability. One author (YT, a native Portuguese speaker) lived in the area from March to December 2008, and participated in public meetings, diver and environmental associations meetings, tourism experiences, public talks about conservation and community development and workshops about tourism. Unstructured interviews were carried out with a range of stakeholders including informants from the civil society (private sector and community) and government.

Surveys

To assess diver experiences, 530 self-administered questionnaires were collected. The questionnaires were distributed in all three dive shops in Tofo Beach, from the 22 April 2008 to 3 February 2009. The questionnaire was pre-tested with 34 divers in Tofo; a number of questions were amended as a result. English was chosen because most of divers were international travelers.
**Questionnaire Structure**

A five page questionnaire with 33 questions was used. The questionnaire comprised the following sections: background, previous history of SCUBA diving, motivation and expectations of their dive trip and their interaction with the local community. The questionnaires presented both open-ended and closed questions. Several questions were designed based on previous studies on wildlife tourism and diving tourism (e.g. Birtles, Valentine, Curnock, Arnold, & Dunstan, 2002; Davis, Banks, Birtles, Valentine, & Cuthill, 1997; Miller, 2005).

**Sample collection**

Two sampling strategies were adopted. Initially, questionnaires were available in collecting boxes for clients in the diving centers. Before the survey, the researcher visited and explained the research proposal at all three dive centers operating in Tofo beach. All of them agreed to cooperate. Assistance was requested from dive centre staff to encourage divers to complete the questionnaires. However, the results from this approach were not satisfactory. Although collecting boxes were accessible during the whole study period in the dive centers, only 8 questionnaires were answered through this way. Apparently, staff were too busy to hand out the forms. Similar problems have been experienced by other researchers assessing dive operators in Mozambique (Pereira, 2003; Sander, 2007).

A second approach was then adopted. The researcher personally handed out the questionnaires and two volunteer assistants agreed to collect the completed surveys. One assistant was involved from April to May and a second assistant periodically from mid-September to the beginning of February. Due to lack of assistants to distribute the questionnaires, divers were sampled in the three dive centers based on a ‘convenience sample’. However, all divers in the dive centre during that time were approached. The number of distributed questionnaires and returned questionnaires were noted to calculate the response rate.

**Data Analysis**

Descriptive analysis was used to determine diver demography. The data were examined for correlation between the dive experience variables and a measure of dive specialization as well as motivation to visit Mozambique. Spearman’s Rank Order Correlation tests were conducted. This non-parametric test was adopted because all variables did not conform to normality, even after applying logarithmic and square roots transformations (Zar, 2001). Normality of the data was tested by a combination of histogram, Stem-and-leaf plot, box plot and skewness and kurtosis statistics (Coakes, Steed, & Ong, 2009). All statistical analyses were performed on SPSS 16.0 for MAC.

**Diving Specialization Groups**

Divers were classified into different levels of experience to better understand how dive experience affects dive perception and motivations to visit Mozambique. Divers experience levels were classified based on Miller's 2005 Diving and Coral Reef History (DACRH) Specialization index adapted by the authors. The modifications were necessary because while the DACRH was focused on coral reef, the Diving Tourist Specialization Index (DTSI) proposed here is a general approach for dive tourists, which is more appropriate to the Tofo environment, where coral reefs are not well developed and a wide range of marine wildlife provide the attraction.
Results

646 surveys were handed out of which 538 were returned; of these 8 were unused because they were only partially completed. So the response rate was 82%. This figure cannot be related to the diver population, since the number of divers per year is unknown. The diver population could not be calculated because dive operators did not keep registers or preferred to not supply such information. Most of the respondents who did not return the questionnaires had said that they were happy to complete it later but failed to return. Only a few respondents declined to complete the questionnaires for reasons such as they were ‘too busy’, ‘had no time’ or ‘the questionnaire was too long’.

Demographics

Table 1 describes the divers' profiles and demographics. Of the 530 participants, most of them (67.9%) were from Europe. Mozambican residents represented only 4.3% of the sample. Slightly more than half of the divers (56.6%) were male and the age ranged from 17 to 70 years, with a mean of 34.7 years (SD=9.43). Results show that 84.1% of visitors were well educated and had completed at least a university degree.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
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<td><strong>Country of Residency</strong></td>
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<td><strong>Highest level of education</strong></td>
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<td>Total</td>
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</table>

Table 1: SCUBA divers’ demographics

Previous SCUBA diving history

Over half the respondents (51.5%) had considerable dive experience of more than 50 dives. Divers were mainly certified by PADI (77.2%), followed by CMAS (11.9%) and a range of other certificate agencies (10.9%). More than half of the respondents (59.2%) were certified at least five years ago. However, only 23.8% of respondents had dived more than 20 times in the last twelve months. This shows that divers may be involved in the activity for many years, but the frequency of diving may differ significantly. Table 2 includes descriptive information about their previous SCUBA diving history.
### Table 2: Previous diving history

**Diving Specialization Groups**

To check if Diving and Coral Reef History (DACRH) Specialization could be adapted to incorporate the new variables, a series of correlation analyses were carried out. The results are presented in Table 3, which shows significant positive relationships between diver experiences categories and all variables analyzed (i.e. total number of dives, ownership of guide book, dive gear and/or underwater camera, number of countries dived, level of certification and year of certification).

<table>
<thead>
<tr>
<th>Variable</th>
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<td>1-10</td>
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<td>11-20</td>
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<td>Open Water Diver</td>
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<td>Advanced Diver</td>
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<tr>
<td>1-10</td>
<td>266</td>
<td>50.2</td>
</tr>
<tr>
<td>11-20</td>
<td>102</td>
<td>19.2</td>
</tr>
<tr>
<td>21-30</td>
<td>60</td>
<td>11.3</td>
</tr>
<tr>
<td>31-40</td>
<td>30</td>
<td>5.7</td>
</tr>
<tr>
<td>41-50</td>
<td>23</td>
<td>4.3</td>
</tr>
<tr>
<td>&gt;100</td>
<td>12</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>530</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dived in other countries</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>60</td>
<td>11.3</td>
</tr>
<tr>
<td>Moz. + 1 country</td>
<td>93</td>
<td>17.6</td>
</tr>
<tr>
<td>Moz. + 2-4 countries</td>
<td>163</td>
<td>30.8</td>
</tr>
<tr>
<td>Moz. + 5-6 countries</td>
<td>78</td>
<td>14.7</td>
</tr>
<tr>
<td>Moz. + &gt;6 countries</td>
<td>135</td>
<td>25.5</td>
</tr>
<tr>
<td>Total</td>
<td>529</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Spearman’s rank-order correlations between the level of diver experience and the variables related

After verifying that variables were positively correlated, divers were classified according to Table 4. Over a third (33.8%) of the sample were ‘intermediate divers’, who are no longer beginners, but have limited experience; 30% were ‘enthusiastic divers’, who have higher level of certification and more dive travel experiences and 15.4% were specialist divers, who have professional credentials and dived in many countries. Only about one fifth (20.7%) were ‘beginner divers’, who had started to dive only recently. There was a positive correlation between divers specialization and their age ($r (526)=0.493, p<0.001$).

### Table 3: Spearman’s rank-order correlations between the level of diver experience and the variables related

<table>
<thead>
<tr>
<th>The Experience level is related to...</th>
<th>Correlation coefficient ($r$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of dives</td>
<td>$r (526) = 0.894, p&lt;0.001$</td>
</tr>
<tr>
<td>Ownership of guide book, dive gear and/or underwater camera</td>
<td>$r (526) = 0.761, p&lt;0.001$</td>
</tr>
<tr>
<td>Number of other countries dived</td>
<td>$r (526) = 0.805, p&lt;0.001$</td>
</tr>
<tr>
<td>The level of certification (training)</td>
<td>$r (526) = 0.796, p&lt;0.001$</td>
</tr>
<tr>
<td>Years of diving</td>
<td>$r (526) = 0.796, p&lt;0.001$</td>
</tr>
</tbody>
</table>
### Table 4: Criterion for the dive specialization categories (adapted from Miller, 2005).

<table>
<thead>
<tr>
<th>Participation</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Enthusiasts</th>
<th>Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years diving years diving</td>
<td>0-1</td>
<td>2-4</td>
<td>5-10</td>
<td>&gt;10</td>
</tr>
<tr>
<td>Total number of dives</td>
<td>0-10</td>
<td>11-50</td>
<td>51-200</td>
<td>&gt;200</td>
</tr>
<tr>
<td>Highest SCUBA diving certification level</td>
<td>Open Water</td>
<td>Advanced Open Water</td>
<td>Rescue</td>
<td>Dive master/Instructor</td>
</tr>
<tr>
<td>Number of other countries dived</td>
<td>1-2</td>
<td>3-4</td>
<td>5-6</td>
<td>&gt;6</td>
</tr>
<tr>
<td>Own book guide, dive gear and/or underwater camera</td>
<td>No for all</td>
<td>Yes for 1</td>
<td>Yes for 2</td>
<td>Yes for all</td>
</tr>
<tr>
<td>Total number of dives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| IDTS | 5-7 | 8-12 | 13-17 | 18-20 |

### Motivation to visit Mozambique

In an open question, divers were asked why they chose to travel to Mozambique. Over a quarter (25.1%) answered that they visited Mozambique because of the diving and other related reasons (e.g. diving and beach), 22% came because of the marine mega fauna (particularly whale sharks and manta rays), 16.5% indicated it was specifically the diving and 5.9% due to work. Other reasons did not achieve 5% and included: ‘recommendation’, ‘to visit a friend’, ‘distance from home’ and ‘volunteer program’. Furthermore, divers were asked to rank from 1 to 5 (not at all – very important) the importance of diving in their decision to visit Mozambique. Almost half of respondents (48.5%) confirmed that diving was ‘very important’, 25.3% ranked it as ‘important’, 11.5% as ‘moderately important’, 5.7% as ‘of little importance’ and 6% as ‘not at all important’. For those respondents that classify diving as ‘few and not at all important’, the main motivations to visit Mozambique were: to work (23%) and to visit a friend (13.1%).

### Diving Tourist Specialization Index (DTSI) and motivation to visit Mozambique

Spearman’s Correlation Index showed a positive correlation between the diving component aspect and DTSI \( r (526) = 0.280, p<0.001 \). Table 5 illustrates the importance of diving for each IDTS group.

<table>
<thead>
<tr>
<th>Importance of diving in the decision to visit Mozambique</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Enthusiasts</th>
<th>Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all important</td>
<td>16.5%</td>
<td>5.1%</td>
<td>1.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Of little importance</td>
<td>9.20%</td>
<td>7.3%</td>
<td>2.5%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Moderately important</td>
<td>18.3%</td>
<td>12.3%</td>
<td>7.4%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Important</td>
<td>32.1%</td>
<td>12.4%</td>
<td>19.8%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Very important</td>
<td>23.9%</td>
<td>27.5%</td>
<td>69.1%</td>
<td>51.7%</td>
</tr>
<tr>
<td>Total</td>
<td>100% (n=109)</td>
<td>100% (n=178)</td>
<td>100% (n=158)</td>
<td>100% (n=81)</td>
</tr>
</tbody>
</table>

Table 5: Importance of diving to each DTSI group
Participation in other tourism activities

There are some other tourism activities in Tofo, but apart from the ‘Ocean Safari’ divers rarely join those activities. ‘Ocean Safari’ is a snorkeling trip to find and swim with big animals, particularly whale sharks. Over half of the divers (54.9%) indicated they had participated or intended to participate in an ‘Ocean Safari’.

Diving Experience

Divers were asked in an open question what were the three best and three worst things about diving in Tofo Beach. The response rate to the ‘best things’ question was 94.7%, while the response rate to ‘worst things’ was 74.5%. The responses were content analyzed and coded into 50 codes about ‘best things’ and 66 codes about ‘worst things’. For ‘best things’ 1377 elements were coded and for ‘worst things’ 861 elements were coded. These data reflect that although there are some negative aspects on diving in Tofo Beach, visitors are likely to find the experience positive.

As expected, the most frequent elements related to best experiences were marine life. On the other hand, the worst elements about diving in Tofo were associated with physical characteristics of dive sites, such as visibility and current (Table 6). The top worst element not related to diving was the accessibility of Tofo, which counted to 24.20% of the total ‘worst elements’ coded for beginners’ divers 10.3% for intermediate divers, 6.45% for enthusiastic divers and 8.57% for specialist divers.

<table>
<thead>
<tr>
<th>‘Best things’</th>
<th>Elements</th>
<th>N</th>
<th>Valid Percent</th>
<th>’Worst things’</th>
<th>Elements</th>
<th>N</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manta rays</td>
<td>213</td>
<td>15.5%</td>
<td></td>
<td>Visibility</td>
<td>127</td>
<td>14.8%</td>
<td></td>
</tr>
<tr>
<td>Whale sharks</td>
<td>208</td>
<td>15.1%</td>
<td></td>
<td>Price of dives</td>
<td>65</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>Marine life in general</td>
<td>93</td>
<td>6.8%</td>
<td>Rough sea waves</td>
<td>64</td>
<td>7.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity of marine life</td>
<td>58</td>
<td>4.2%</td>
<td>Long boat ride</td>
<td>51</td>
<td>5.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dive center in general</td>
<td>49</td>
<td>3.6%</td>
<td>Current</td>
<td>42</td>
<td>4.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whales</td>
<td>47</td>
<td>3.4%</td>
<td>Tofo accessibility</td>
<td>41</td>
<td>4.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Few divers</td>
<td>44</td>
<td>3.2%</td>
<td>Water temperature (cold)</td>
<td>37</td>
<td>4.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dive center staff</td>
<td>41</td>
<td>3.0%</td>
<td>Kind of boat</td>
<td>34</td>
<td>3.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visibility</td>
<td>40</td>
<td>2.9%</td>
<td>Too crowded</td>
<td>32</td>
<td>3.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish (no specified)</td>
<td>37</td>
<td>2.7%</td>
<td>Didn’t see species ‘X’</td>
<td>29</td>
<td>3.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large fish</td>
<td>37</td>
<td>2.7%</td>
<td>Lack of corals</td>
<td>28</td>
<td>3.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dive center service</td>
<td>34</td>
<td>2.5%</td>
<td>Weather condition</td>
<td>26</td>
<td>3.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water temperature (warm)</td>
<td>34</td>
<td>2.5%</td>
<td>Concerns about environment</td>
<td>23</td>
<td>2.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mega fauna</td>
<td>33</td>
<td>2.4%</td>
<td>Boat launching procedures</td>
<td>22</td>
<td>2.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather</td>
<td>32</td>
<td>2.3%</td>
<td>Seasickness</td>
<td>22</td>
<td>2.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmosphere/relaxed</td>
<td>31</td>
<td>2.3%</td>
<td>Distance from home</td>
<td>19</td>
<td>2.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People friendly/nice</td>
<td>31</td>
<td>2.3%</td>
<td>Safety (related to diving)</td>
<td>15</td>
<td>1.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Represents total coded elements, not number of respondents.

Table 6: Worst and best elements of diving experience in Tofo Beach

Diving Tourist Specialization Index (DTSI) and dive experiences

All elements coded were divided into seven themes: (1) marine life, e.g. diversity and whale sharks; (2) physical diving, related to physical characteristics of the ocean such as visibility; (3) other diving elements, e.g. few divers; (4) the dive centre; (5) tourism issues such as accommodation and quality of restaurants; (6) elements linked to the local community; and, ‘other elements’ for instance: weather and distance from home.

The DTSI groups and themes were compared to find out the influence of each theme for divers from beginners to specialists. Table 7 illustrates this analysis. It is interesting to note that ‘on best
experience’ there is a gradual increase in the level of importance of marine life from beginners to specialists. In contrast, the importance of dive centers and physical elements decreased from beginners to specialists.

<table>
<thead>
<tr>
<th>Element</th>
<th>Beginners</th>
<th>Intermediate</th>
<th>Enthusiasts</th>
<th>Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine life</td>
<td>47.7%</td>
<td>62.6%</td>
<td>67.1%</td>
<td>77.7%</td>
</tr>
<tr>
<td>Dive center</td>
<td>14.7%</td>
<td>11.4%</td>
<td>9.2%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Other elements</td>
<td>13.5%</td>
<td>8.9%</td>
<td>9.1%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Physical diving</td>
<td>13.5%</td>
<td>7.8%</td>
<td>4.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Other diving elements</td>
<td>7.5%</td>
<td>6.6%</td>
<td>7.7%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Local community</td>
<td>3.0%</td>
<td>1.6%</td>
<td>2.3%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Tourism</td>
<td>0%</td>
<td>1.0%</td>
<td>0.2%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

*Percentage represents total coded elements, not numbers of respondents.

Table 7: Differences in coded elements from ‘best things’ and ‘worst things’ of diving in Tofo according to the IDTS groups.

Climate Change is likely to affect marine life distribution and dynamic of populations (UNEP & CMS, 2006)
Migratory species, such as whale sharks, manta rays and humpback whales depending on international agreement to effective protection
Whale sharks populations have declined considerable (Norman, 2000). Fisheries is the main threat, but the increase of whale shark tourism is also a concern (Norman, 2000; Rowat, 2007), Manta ray populations declined rapidly where they are targeted for fishing and also caught as by catch (Marshall et al., 2006; Zeeberg, Corten, & Graaf, 2006). Asian market has increased demand for manta ray, raising targeted fishing including in East Africa (Marshall et al., 2006)
Global economic crisis and impacts on international tourism demand
Only 4% of the continental shelf of Mozambique is officially protected (UNEP-WCMC, 2008). Even these areas are poorly managed due the lack of resources and conflicts with local communities living inside the areas (personal observation)
Lack of knowledge and management of current fisheries (Southern African Development Community, 2008).
Manta rays and whale sharks are not protected by national law
Limited knowledge about marine tourism (personal communication, Tourism Ministry, 8/11/08)
Limited assets and capacity to manage marine tourism (Centre for Advanced Training in Rural Development & Humboldt Universität zu Berlin, 2003)
High level of poverty, high rate of illiteracy, weak economy based on the importation of manufactured products and exportation of primary products (Instituto Nacional de Estatística, 2007; República de Moçambique, 2006)
Eventually fishers catch key species for diving (manta rays, sharks and other rays) raising both environmental concerns (Pierce & Marshall, 2008) and conflicts between dive operators and local fishermen (personal observation, 30/05/08 & 20/09/08)
Increase on the use of fishing nets instead of fishing lines in the last few years have raised pressure on the marine ecosystem (J. Gotwalls, personal communication, 09/04/08)
Changes from subsistence use of natural resources to commercialization of natural resources (community meeting, personal communication, 25/05/2008)
Lack of local protected area and management of tourism and fishing
Lack of local linkage (Jamieson, Goodwin, & Edmunds, 2004) - the vast majority of tourist establishments are owned by expatriate (including all dive centers), the dependence of imported products to supply tourism is high and since local community has a very low educational level, employment is reduced to low income jobs and participation in tourism is poor (Centre for Advanced Training in Rural Development & Humboldt Universität zu Berlin, 2003)
Due the nature of diving (costs and training) local people rarely participate in the activity. For instance there was just one Mozambican instructor in the whole country (Macuaca, C, personal communication, 27/02/08). This raises the gap between private sector and local community affecting mutual understanding. Direct employments are mostly for low skill low salary jobs.

Table 8: Summary of some of the risks to the success of diving tourism in Tofo Beach
Risks to the diving industry sustainability in Tofo Beach

Table 8 illustrates some examples of the risks to the diving industry in Tofo Beach based on literature review and personal observation during the fieldwork.

Discussion

Age, gender and educational level of the divers studied here were similar to those of divers sampled in previous studies (Ditton, Osburn, Baker, & Thailing, 2002; Miller, 2005; Mudet & Ribera, 2001). Not surprisingly, marine life was the most important component of the diving tourism experience. These results agree with studies conducted in other parts of the world, such as Spain (Mudet & Ribera, 2001), Australia (Davis et al., 1997; Miller, 2005) and Thailand (Dearden, Bennett, & Rollins, 2006). The results also support the idea that more specialized divers rarely participate in many other activities during their overall trip (Mudet & Ribera, 2001).

The high percentage of specialized divers found shows that the profile of divers in Tofo Beach is more likely to be similar to the ones normally found on live-aboard dive boats rather than on day trips. It is likely that remote diving destinations have similar diver market to live-aboard boats. There are two main reasons why specialized divers prefer live-aboard boats: the remoteness and the focus on key wildlife (Dearden et al., 2006). Remoteness is related to the difficulty in accessing a place and may limit the number of visitors. Access to dive sites near Tofo is relatively easy, but getting to Tofo can be a bit complicated. Even with the recent improvements to the roads and flight connections, the local public transport (‘chapa’) is poor and there is no on-line system to buy flight tickets. The results reveal that accessibility is one of the main ‘worst things’ not related to diving. This is especially true for beginners, which sustains the idea that more specialized divers are more prepared to travel to remote areas. This finding has yet to be confirmed since most research to date has been in diving destinations with easy access (e.g. Barker & Roberts, 2004; Garrod & Gossling, 2008; Rouphael & Inglis, 1995).

Divers’ specialization and implications to the future of diving tourism in Tofo

Specialization level

The diver specialization level is a key factor for diving tourism management (Dearden et al., 2006; Miller, 2005). The findings show that Tofo Beach is of particular interest to divers mainly because of the marine life there, especially a small number of iconic species of marine mega fauna. Whale sharks and manta rays were particularly important for more experienced divers. Whale sharks are not commonly seen while SCUBA diving, yet these animals are highly valued by divers as part of their overall tourism experience. Many divers undertake snorkeling trips to swim with these animals. However, some divers prefer not to go on an ‘Ocean Safari’ because they hope to swim with whale sharks en route to the dive sites (personal observation).

Visibility in Tofo can vary widely from 30 meters on one day to 5 meters the next day (personal observation). The best diving sites are generally deep than 20 meters and current can be unpredictable. Beginner divers were more concerned about such physical features than specialized divers. This underscores the point that the marine environment of Tofo would not be suitable for a high percentage of beginner divers. Recent studies have showing the importance of using Butler’s cycle (Butler, 1980) to manage diving tourism (Dearden et al., 2006). Over time tourism tends to shift from specialized tourism to mass tourism in the absence of active management (Duffus & Dearden, 1990). Therefore, understanding tourism experiences is critical to defining the limits of acceptable change (LAC) and to ensure that attractiveness is not lost for specific groups of tourists (McCool & Cole, 1997).
So far there is no management plan from local to national level that takes into account the diving tourism characteristics in Mozambique. The base document that defines strategies to tourism management in Mozambique is the ‘National Strategic Plan for Development of Tourism’. According to the plan, diving is a key market for the Southeast of Mozambique, but it shows that there is no understanding about this market. For example, no mention was made about divers segmentation or actions to avoid the shift from specialized diving tourism to mass tourism. Controversially, the plan affirms that diving is “increasingly popular among young people (…). Among backpacker and regional tourists” (Ministério do Turismo, 2004, p. 44), which differ from the divers profile found in Tofo Beach. The intention of keep the South Mozambique as “the main destination for regional and domestic market, with emphasis on sun, sand and sea, family holidays, water sports and entertainment and fun” (Ministério do Turismo, 2004, p. 55) may be conflicting with the wish to improve international market based on diving and careful management will be necessary to avoid loss of such specialized market. In addition, actions from international level to local level will be necessary to minimize environmental and socio-economic risks and ensure the sustainability of diving tourism in the long term.

CONCLUSION

Diving tourism based on highly specialized divers is a good opportunity even given the current stage of tourism development in Mozambique. However, the need for capacity building and understanding about marine tourism is urgent. In Tofo Beach tourism management is basically non-existent. The flux of benefits from tourism to the local communities is still poor, there is no protected area in the region and there is a lack of understanding about marine tourism from the individual to institutional level. Such a scenario raises the risk of biodiversity lost and collapse of an industry that is highly based on specialized divers.

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SILENT INVASION: INVESTIGATING OREGONIANS’ SELF-REPORTED AWARENESS, UNDERSTANDING AND BEHAVIORS TOWARD INVASIVE SPECIES

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ABSTRACT

A statewide research study framed within behavior change research, such as the Theory of Reasoned Action and Planned Behavior, and free-choice learning, investigated Oregonians’ awareness, understanding and behaviors toward invasive species, both marine and terrestrial, prior to an educational effort: a documentary film, Silent Invasion, focused on Oregon invasive species, followed by a year-long action campaign to further engage Oregonians in learning about and taking action against invasives. Follow-up strategies include: A garden guide and web site that the public can use to identify and report invasives, and action-oriented activities to alleviate the impacts of invasives (e.g. beach cleaning). Two research approaches were utilized with four stakeholder groups who influence invasives (boaters, anglers, hunters and Master Gardeners): a web-based and
paper version of a questionnaire probing knowledge, current activity and attitudes toward invasives and focus groups probing knowledge, attitudes and barriers towards preventing invasives. In addition to these four groups, two others participated in the survey (general public and public broadcasting members). Findings suggested that Oregonians are concerned about invasive species, have some understanding of the topic and are willing to learn more. Their knowledge was highly contextualized within their stakeholder groups and was very place-based. Despite this understanding, they perceive tangible barriers to tackling the issue and are looking for leadership from state and federal agencies and NGOs. Findings from this study informed the development of the public broadcasting program and the follow-up action campaign elements. A follow-up study will assess the effectiveness of this comprehensive effort.

Keywords: Invasive species; awareness and action campaign; public broadcasting; free-choice learning; Behavior change research

BACKGROUND

Invasive species are increasingly an economic and environmental detriment in Oregon. This study attempts to elucidate the attitudes and beliefs of key stakeholders (recreational fishers, boaters, hunters & gardeners) regarding invasive species. Some of these attitudes and beliefs may prevent these stakeholders from changing their behavior to help stop the introduction and spread of invasive species.

In partnership with a public broadcasting organization, a local community-based environmental organization and a national environmental organization, the legislatively-mandated Oregon Invasive Species Council (OISC) led a statewide public awareness, prevention and action campaign focused on invasive species, both aquatic (marine and freshwater) and terrestrial, perceived as a major environmental threat in the state (Colston, 2008; Binimelis, Rodriguez-Labajos & Monterroso, 2007). The goal of the effort was to prevent and control the spread of harmful invasive species by building awareness of the problem, offering action-oriented ways for the public to engage in solving the problem, with the ultimate goal of changing the behavior of Oregonians toward more pro-conservation-oriented activities (in this case defined as understanding the issue of invasive species and working toward solutions).

The awareness component of this multi-faceted campaign was a specially produced documentary program, *Silent Invasion*, focusing on the topic of invasive species in Oregon and China which premiered in Oregon in April, 2008. A year-long public education and action campaign following the program includes a *GardenWise* booklet distributed through nurseries in the state designed to help consumers make wise choices when they choose plants for their gardens, a web site that allows citizens to report sightings of invasive species, and opportunities to participate in activities such as beach clean-ups or the removal of invasive species such as English ivy in forest systems.

An essential component of this effort was the development and implementation of a comprehensive research plan, including front-end, formative and summative research. Such a comprehensive research thread enables education, awareness and action components to be based on sound theoretical foundations and to be specifically targeted to the knowledge, understanding and behaviors of the people to whom the effort is addressed. It also enables informed revisions and modifications along the way to improve the product; and ultimately provides feedback and insights about the impact and effectiveness of this campaign specifically, and provides a laboratory in which to understand the nature of behavior change around environmental issues and such comprehensive efforts generally. A longer-term goal is to catalyze and establish a new research relationship between a public broadcasting organization, a university and other community-based organizations, in which university faculty members’ understanding of free-choice learning can help to inform the
development and evaluation of public broadcasting educational efforts and contribute to understandings about how to influence behavior change in the public (Ballantyne & Packer. 2005). This paper describes the initial baseline research study to investigate Oregonians’ self-reported awareness, understanding and behaviors toward invasive species prior to the educational intervention.

RESEARCH GOALS & RESEARCH QUESTIONS

The goals for this phase of the research project included the following:

(1) Determine baseline knowledge, interests and behaviors related to invasive species, particularly barriers that prevent people from changing their behaviors by conducting focus groups with resource users and stakeholders in the state whose actions potentially impact the spread of invasive species (Master gardeners, boaters, anglers & hunters) and by conducting a statewide survey of those 4 groups, as well as a sample of public broadcasting members & the general public.

(2) Work closely with the public broadcasting organization to see that findings from this research are incorporated into the script of the Silent Invasion program and any ancillary printed or web-based materials created that will be a part of the year-long campaign to strategically craft an effective approach for the education/awareness/action campaign.

The research question was:

(1) What is the baseline knowledge, interests, attitudes & behaviors toward invasive species of stakeholders & resource users in Oregon whose actions potentially impact the spread of invasive species (gardeners, boaters, anglers, & hunters), as well as a sample of OPB members & general public?

(2) What barriers to behavior change vis-à-vis invasives do people perceive and what solutions do stakeholders feel could impact the spread of invasive species?

These research questions are framed within behavior change, science communication and free-choice learning research. A variety of theories relating to behavior change can be found and most focus on the notion of changing KAAB (Knowledge, Attitude, Affect and Behavior) variables as a central component. Early research assumed a linear and hierarchical relationship between these variables, moving from knowledge gain to changes in attitude and affect, culminating in behavior change. Subsequent research demonstrates that this is not the case; these variables are intertwined in complex ways and some are more important depending upon the person, his/her background and the context of the situation. Affect is also extremely important, probably more than the model initially acknowledged. The emotional component of how a person feels about the issue, the change and their motivation to change, as well as their capacity to influence the situation, is also critical.

This more complex model of behavior change appreciates that there is great variability among a group of people in terms of their range of experiences, knowledge, attitudes, interests, and motivations. These differences directly affect how each person responds to conservation messages, how he or she processes and perceives these messages and ultimately, the degree to which the messages are integrated into the person’s thinking such that his/her subsequent action is influenced. Theory, specifically the Prochaska Stage Model of Behavioral Change (Prochaska and DiClemente, 1986; Prochaska, DiClemente & Norcross, 1992; Prochaska, Redding, Harlow, Rossi, & Velicer, 1994, a model for change adapted by John H. Falk from the public health arena (Falk, 1998), would
suggest that the way a person responds to a conservation message will be highly personal and quite
variable across individuals and that for any particular behavior there actually is a continuum of
behavior change possible—in other words, people are at different points of readiness to change
their behavior. In addition, free-choice learning research demonstrates that people need to not only
understand the issue (the K of KAAB), but care and feel that behavior change is important (the
Attitude and Affect of KAAB) and that their behavior change will lead to improving the situation.
This means that they need to know what they can do in their own lives to influence this issue and
these ideas need to be reinforced, particularly if these are new behaviors.

Based on this research, the questionnaire and focus group protocols were framed around four issues
to determine baseline knowledge, interests, attitudes, behaviors and barriers to behavior change vis-
à-vis invasives. First, it was important to understand what Oregonians knew about the topic: for
example, do they know what common invasive species in Oregon are, the ways in which these
species are introduced and spread, and the harm caused by them. Second, questions explored
attitudes and emotions held regarding how people feel about the introduction and spread of invasive
species and what people believe about how their activities impact the introduction or spread of
invasive species and the behaviors they need to adopt in order to prevent spreading invasive species.
Third, questions investigated the barriers that people themselves perceive to changing their
behaviors and last, were possible solutions from stakeholders whose actions potentially impact the
spread of invasive species. These solutions included ideas about invasive species messaging content
and venues that might be effective in fostering behavior change, as well as activities that might
entice people to become engaged in being part of the solution to the introduction and spread of
invasive species in Oregon.

METHODOLOGY

Two research approaches were utilized:

(1) A web-based and paper version of a questionnaire on invasive species was administered
statewide to six stakeholder groups (general population, public broadcasting members, boaters,
anglers, hunters and Master Gardeners in the state; and,

(2) Focus groups probing knowledge, attitudes and barriers towards invasive species prevention
were conducted with four stakeholder groups (Boaters, anglers, hunters and Master Gardeners).

Sample

Survey Six groups of individuals participated in the survey portion of this study. Three samples
were obtained through the Oregon State Marine Board and the Oregon Department of Fish and
Wildlife. Research participants from these agencies included (1) individuals that own a boat; (2)
individuals who have a fishing license (anglers); and, (3) individuals who have a hunting license. In
addition to these three groups, Oregon Master Gardeners residing in the metropolitan areas
surrounding Portland were surveyed. Oregon Public Broadcasting also sent the questionnaire to a
random sample of their members via email and a probability sample of Oregon households was
selected in order to survey a random sample of Oregon residents.

Two approaches were used to collect the survey data in this study. Some individuals were invited
to participate in the study and complete the survey on the web, while others were asked to complete
a paper version of the survey. A sample of 300 individuals was selected for each group and snail
mail correspondence to recruit them into the study was the only form of contact for four of the
groups (boaters, anglers, hunters and general population). A pre-notification letter was first mailed
to them. Later, a letter containing the URL to the online survey was mailed and two weeks later a
A reminder/thank you postcard was sent, followed by a third and final request to complete the online survey.

In the case of the general population, mailing addresses for the sample were obtained from the U.S. Postal Service (USPS) through the Genesys Sampling Company, using the delivery sequence file (DSF) which is a computerized file that contains all delivery point addresses serviced by the USPS. Three methods were tested in the general population sample to assess response rates when the Internet is used for the general population with 700 individuals in each of the three methods included in the sample. Four possible contacts by mail were made for each of these methods. Individuals in the first method (i.e., group) were asked to complete the questionnaire by mail only and sent a paper copy of the survey. A pre-letter introducing the upcoming survey, first mailing of the questionnaire, and a follow-up thank you postcard were sent to all these individuals. A final mailing of the questionnaire was sent to all those in this group who had not responded. Individuals in the second and third groups were asked to complete the survey online initially, but then a paper copy of the survey followed for those that had not responded. A pre-notification letter was first mailed, followed by a letter containing the survey URL. The difference between these two methods was a detailed instruction insert on how to find the online survey which was given to the individuals in the third method. Both groups received a reminder/thank you postcard in the mail. A final mailing to those who had not responded to earlier requests included a paper copy of the questionnaire.

Master Gardeners and public broadcasting members were notified by email to complete the survey online. Three hundred Master Gardeners and 982 OPB members were randomly selected to participate in the study. A pre-notification email was sent to Master Gardeners and public broadcasting members. One follow-up contact was made to all those in the public broadcasting group who had not responded. Two follow-up emails were sent to Master Gardeners to improve response rates for the study.

Individuals in the two groups that were asked to complete the survey on the web were provided an access PIN number. The PIN number was provided so that only one questionnaire could be completed by that household and so that researchers could track which households had responded so that they would not receive unnecessary recruitment requests. An identification code was also on all paper versions of theses questionnaires. The final sample for the survey was 1,000 with an adjusted response rate of 23.8%.

**Focus Groups** Public records were initially used to recruit focus group participants with current boating, hunting and fishing licenses, as well as those who were master gardeners (public records of master gardeners are available through university extension services). To begin recruiting participants a list of 93 licensed Oregon boaters’ names and addresses were obtained from the Oregon Marine Board. These potential participants were contacted through a mailed IRB approved letter introducing the project and including an invitation for participation. Enclosed in this letter were an informed consent form and a contact information form. Those recruited were asked to complete and sign both forms if they would like to participate. If they chose not to participate, they could complete and return the contact information sheet with the appropriate box marked indicating that they did not wish to participate.

Due to a low response rate from this method, and difficulty in obtaining other public records for recruitment purposes, recruitment methods were modified. A networking system was used for recruiting a purposive sample. Leaders of organizations for each group, who had access to the different user groups targeted, were contacted. The researcher contacted Oregon Master Gardener coordinators, and lead fishing, hunting, and boating organizations. Utilizing this modified strategy, most networking for participant recruitment was done by email, along with follow-up phone calls.
For confidentiality purposes, most recruitment contacts preferred to contact potential participants directly, rather than giving the researcher the participant’s contact information to contact them directly. To accommodate this preference, each recruitment contact was sent a ‘request for recruitment’ email that included participant information. The ‘request for recruitment’ email included an invitation to directly distribute all the included information to any parties who might be interested in participating or those who may also be able to help recruit participants. All recruitment methods were approved by the IRB. Those people interested in participating or gaining more information contacted the researchers directly, usually via email. Every person who initiated contact with the researcher received follow-up communications to help ensure participation and to receive information about the dates and location of focus groups. The final n for focus groups was 40.

Data Analysis

Survey Frequencies for each of the items on the web-based questionnaire were calculated and where appropriate weighted according to responses from each of the 6 groups. Cross-tabulations for appropriate questions were also conducted as a function of stakeholder group, geography within the state, organizations / groups they currently are a member of or support age, gender and educational level, as well as appropriate tests of significance.

Focus Groups Focus group data was analyzed qualitatively utilizing open-ended coding and content analysis.

FINDINGS

Results could be organized into four

Oregonians are concerned about invasive species and were pleased to be asked their views. Almost a quarter of those surveyed (225) took time to respond to an open-ended question with detailed, written answers (only 4-5 were negative about the survey and/or the importance and threat of invasive species). Responses included:

“I like that someone is asking the public what it is they think of this….Thank you for allowing me to take this survey and voice my concern.”

“Glad the state is doing a survey about this topic.” “Thanks for the information and concern for our environment.”

“Hope your survey gives you good information.”

“Thank you so much for this e-mail. The last reminder we got from you in the “snail” mail gave us an alternative option for entering the species survey. It worked very well and we sent in the survey last week. Thank you again for helping with the computer access issue. I thought the survey was very interesting as well a pertinent.”

Oregonians have some understanding of invasive species and appeared willing to learn more. More than three-quarters (79%) of those surveyed were able to describe what an invasive species is and many were concerned about the issue. The general population’s understanding was most similar to anglers, boaters and hunters; master gardeners and public broadcasting members were more knowledgeable and likely to be aware of or to have participated in activities about invasive species, their harms and ways to ameliorate or prevent their introduction and spread. Many of those responding (65%) were also willing to learn more, expressing this willingness in a variety of ways:
“Making more people aware by using any & all means to get their attention & educate them will help control the problem of invasive species.”

“Best thing is for volunteer rangers/etc. to include information in their talks at campgrounds and area kiosks.”

“I will be interested to learn more, and will watch for future outreach.”

**Despite some understanding and concern, the data revealed that there are real barriers to tackling the issue.** Many of those responding lacked detailed information about the prevention of invasive species (what, where, when, how), who in government is responsible for the issue (state, county, local); and particular laws and regulations. Many also held the perception that local and county governments are least effective even though many prevention efforts (e.g. most weed control) are at the county level.

There were also misunderstandings about specific invasives (e.g. more people knew about Douglas fir than wheat; few know about yellow-flag iris and even fewer still about quagga mussels. The term feral as in feral pig also was not well understood.

The majority of the general public surveyed felt that their own actions and those of their family/friends would be minimally effective in preventing and stopping the spread of invasive species. A majority of the general public (72%) said they would *not* actively participate in the prevention or spread of invasive species by joining a group that takes action (through education and outreach) to stop the spread of non-native plants and animals. This viewpoint was expressed in a variety of ways but like the earlier research demonstrated that even if people cared and felt that the behavior change was important (in this case the prevention and spread of invasive species) they did not believe that their individual behavior change would lead to improving the situation:

“Part of the reason why I don't get involved with being active in this problem is that I do not feel I can make a positive contribution. After all, I can remove Ivy from my local park, but the entire state is plagued...How can that possibly help?”

**Oregonians are looking for leadership.** Among those who responded to the questionnaire, state agencies, NGOs, OPB, OSU Extension, hobby clubs, and newspapers were identified as useful sources of environmental information. Those surveyed perceived that these institutions were essential actors in developing solutions to the issue. The majority said these entities could be “very” or “moderately” effective in the fight against invasive species (in approx. descending order): State agencies, Federal agencies, NGOs, hobby clubs.

**DISCUSSION**

Findings from this baseline study were used to shape the public broadcasting program and its ancillary components. Early indications are that the majority of the public was aware of and attended to the “Stop the Invasion” program and media campaign and its related informational and action efforts. In addition and even more importantly, many who watched the program chose to participate in the action-oriented activities after its airing.

As noted earlier, research for many years had assumed a linear and hierarchical relationship between the variables of knowledge, and changes in attitude, affect and subsequent behavior change. More recent research suggests that this is not the case; these variables are intertwined in complex ways with some being more influential than others depending upon the person, his/her
background and the context of the situation. This complexity was strongly reinforced by this study. Research participants’ stance on the issue of invasive species varied according to their background, knowledge and interests. Anglers were concerned about fish and the quality of their habitats, while master gardeners were most knowledgeable and concerned about how invasive species affected plants in general and their own gardens specifically. Some interesting patterns were observed across groups though. Although most of those surveyed were able to define what an invasive species is and many were concerned about the issue, the general population’s understanding was most similar to anglers, boaters and hunters; master gardeners and public broadcasting members were more knowledgeable and likely to be aware of or to have participated in activities about invasive species, their harms and ways to ameliorate or prevent their introduction and spread. Context is important.

Affect also emerged as extremely important. Researchers were struck by how many of those surveyed took time to fill in an open-ended question with detailed, written answers (even those filling out the web-based survey!) and how emotion-laden their responses were, expressing not only how the person felt about the issue, but the motivation to change their behavior, as well as their sense that any actions they took would influence the situation. Despite their strong emotions and relative understanding of the problem, the majority of the general public surveyed felt that their own actions and those of their family/friends would be minimally effective in preventing and stopping the spread of invasive species. This viewpoint was expressed in a variety of ways but as the Theory of Reasoned Action demonstrates even if people care and feel that a particular behavior change is important (in this case the prevention and spread of invasive species) they do not necessarily believe that their individual behaviors will lead to improving the situation, rather they are influenced by social norms and the sense that the problem (and unfortunately the solution!) is outside them and their sphere of influence.

In all fairness to people, some of their sense of helplessness in being able to tackle the problem was framed within a larger societal frame. Research participants identified very real barriers to being able to act in more responsible ways vis-à-vis invasive species. Boaters and anglers described the difficulties of cleaning boats and finding the necessary tools and supports in parks; a few people were also aware of the challenges of invasive species being introduced through nurseries, pet stores and other retailers, which makes the problem even more difficult and insidious.

Initial data analysis also indicates that there likely is a continuum of behavior change exhibited by those responding—people are at different points of readiness to change their behavior depending upon their background, experiences and knowledge. This will be explored further in a more in-depth analysis to be conducted later in the summer.

These findings have important implications for the design of public awareness and action campaigns. The focus of such efforts is often on providing information about the problem however these findings would suggest that most people, even those in the general public, were aware of the problem. What they lack is an understanding of what they can do in their own daily lives to help and the understanding that their individual actions can be effective—if enough other individuals make that same decision to act. In many ways this seems to be the crux of the matter—to develop strategies and messages that communicate that if enough people make that individual choice to act, that those individual choices add up and can be effective in fighting the problem. It is about changing the discourse and action from the typical top-down approach—provide information about the problem and what those people should do to change, to one of grassroots empowerment, in other words, the creation of a movement in which isolated individuals discover each other, form groups around a common concern and empowered by this community, learn to translate individual ideas and actions into public issues and action (Palmer, 1992). There was some effort to build these ideas into the PBS program itself for example a powerful story of one woman who has empowered
groups of people to work together to clear English ivy in the Portland area was included but it would be interesting to be even more purposeful about this in the future and to build in a stronger research component to investigate this aspect of behavior change.

One final implication is important to note. It is the recognition that one size does not fit all when it comes to building awareness and encouraging behavior change. Given the range of what people know and the context in which they know it, as well as their point of readiness to change their behavior along some continuum of behavior change, one message or one empowerment strategy will not be effective. This is another area in which fruitful research could be conducted.

It is important to note that this study did not collect data on actual behavior change but rather on intended action, which the Theory of Reasoned Action suggests is a good indicator of actual behavior change. Ultimately though, following people up, both those who watched the program but also some who chose to participate in some aspect of the ancillary programs is critical to understanding the complex system that leads to decision-making and action. Researchers are seeking support for the next phase of the study which will be a follow-up effort to assess the effectiveness of the campaign and determine which of the interventions or some combination, most influenced changes in knowledge, awareness and action focused on invasive species.

REFERENCES


DUDE FISHING AS AN EMBRYONIC TOURISTIC FORM: THEORY AND PRACTICE

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ABSTRACT

Macinko (1997) anticipated the development of “dude fishing” in commercial fisheries. In this paper, we review recent evidence suggesting that dude fishing has indeed arrived. We revisit and extend the original conceptualization of dude fishing, developing a theory of dude fishing as a “larval stage” in the development of a distinct form of tourism experience. We posit that this form has the potential to become “serious leisure” (Stebbins, 1992; 2007) for a paying client and expressive work for the commercial fisher who hosts the client.

Keywords: dude fishing, serious leisure, commercial fishing, expressive work, fishery/tourism interactions

REFERENCES


A FOCUS ON COASTAL SCENERY AND LANDFORMS: THE GEOTOURISM POTENTIAL OF COASTAL ENVIRONMENTS

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ABSTRACT

Geotourism is a specialised form of tourism where the focus of attention is the geosite. A geosite can be a landscape, group of landforms, a single landform, a rock outcrop, a fossil bed or assemblage of crystals. Many such sites and features are exposed in coastal environments and those countries with extensive coastlines provide much scope for geotourism. Examples of existing geotourism locations are described and the case of enhancing the tourism product along the coastline of Kalbarri National Park in Western Australia via geosite interpretation is described. Materials that can be used to assist in interpreting geosites include, information panels, brochures, books, displays, video, slide shows, interactive touch panels, models, specimens, computer animations and activities. In addition an essential part of presenting geotourism to the visitor is the role of the tour guide, a trained interpreter who can deliver the information and inspire the geotourist. Any coastal landscape has geotourism potential. Developing geotourism requires recognition of resources (resource inventory) and a tourism strategy that incorporates education/interpretation and on-site visitor management.

Keywords: geotourism, coastal landforms, interpretation

REFERENCES

ENHANCEMENT OF SOUTH AFRICAN TOURISM AND HOSPITALITY ENTERPRISE WITHIN THE SUPPLY CHAIN: THE CASE FOR BARTER MEMBERSHIP

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ABSTRACT

South Africa’s tourism and travel industry is a key factor in its economy and a significant creator of jobs. The country invests resources to publicize its holiday and leisure time offerings, and is developing a national service excellence strategy for this sector of the economy.

The recent global economic turmoil has created major concerns about difficulties the tourism sector may be facing; at the same time, global experts claim that tourism may be a key for overcoming the economic difficulties and may play a vital role within the green economic new deal, while advancing intercultural dialogue.

One of the most interesting processes that has become an increasingly attractive and strategic option for businesses as the economy goes down, is barter – an exchange of goods and/or services – ideally with no currency involved.

Bartering has many financial advantages, and tourism barter between countries has proven to be a success strategy. However, conducting a direct swap in the international arena may not always be a readily acceptable option and can limit choosing among different opportunities. The increased emphasis on the supply chain has brought a technological solution in the form of an e-marketplace system which is a network of various businesses interested in barter transactions. Membership into the system provides an option for tourism and hospitality enterprise managers who are searching for ways to supplement their traditional activity of market development within their supply chain, thereby enabling an enhancement to their organization as well as the country’s in the tourism and hospitality realm, which in turn may contribute to economic prosperity.

Keywords: Tourism, Barter, Trade exchange, Leisure time

INTRODUCTION

The tourism industry is a global growth business contributing to the global economy and social welfare, while the high rates of tourists’ arrivals around the world are growing increasingly with each year. Tourism also plays an important role in South Africa’s (SA) economy and a significant creator of jobs. The country invests resources to publicize its holiday and leisure time offerings, while improving its service excellence strategy for this sector of the economy.

The recent global economic turmoil has created major concerns about difficulties the tourism sector may be facing; however, the tourism industry may be a key for overcoming the economic difficulties and play a vital role within the green economic new deal, while advancing intercultural dialogue.
While concerns of the global economic downturn are rising and fears of the worst to come are showing up, one of the most interesting options of international countertrade that is being even more appealing in recession times is the barter— an exchange of goods and/or services – ideally with no currency involved. One of the many areas the barter has proven to be successful is the tourism – among tourist organization, among countries, and also for businesses owners and professionals that have discovered the barter as the ultimate discount travel.

With the development of technology which supports the growing needs of the globalization process, electronic tools have arise that have promoted the barter into a new level; though barter has been around long before the e-commerce, it is a natural direction for development. A new form of form of e-marketplace system which is a network of various businesses interested in barter transactions has emerged, enabling businesses with many trade opportunities. Membership into the system provides an option for tourism and hospitality enterprise managers who are searching for ways to supplement their traditional activity of market development within their supply chain, thereby enabling an enhancement to their organization as well as the country’s in the tourism and hospitality realm, which in turn may contribute to economic prosperity.

THE TOURISM INDUSTRY

The tourism industry is a global growth business, involving 200 million employees worldwide (Muga, 2009). This industry is important to the global economy, as it accounts for 5 per cent of the world’s economy (Miles, 2008), being the world’s largest generator of wealth and employment, contributing 11 per cent of global GDP (Rita, 2000).

According to the UN World Tourism Organization (UNWTO), International tourist arrivals have jumped 30 per cent since 2003 to nearly 900m in 2007, while the forecasts of UNWTO are that tourist arrivals will reach 1.6b by 2020 (FT.com, 2008). It is therefore not surprising why tourism-specialized countries grow more than others (Sequeira and Nunes, 2008).

A well planned and developed tourism industry positively affects the society and the economy (Jayawardena, 2002), while fostering cultural respect among and between people (Presswire, 2007) and playing a vital part in the global green economy (Leisure & Travel Business, 2008), by financing–touristic sites that require costly conservation and wildlife protection (Goodstein, 2006).

Tourism contributes to the host population standard of living (Proença and Soukiazis, 2008), since successful tourism requires good roads, reliable supplies of electricity, efficient telecommunication, public security and political stability (Muga, 2009), which contributes in turn to the site’s attractiveness to arrivals since a destination with good logistics, assurance for security, value for money, good hospitality and food, can satisfy a customer (Narayan, Rajendran et al., 2008). At the same time, the attention given to the importance of tourism in economic growth has recently increased significantly (Cortés-Jiménez, 2008), as it is an important income generator (Eugenio-Martin, Martín-Morales et al., 2008). Tourism has also a large potential for growth in many developing countries, distributing wealth both internationally and domestically, transferring wealth and investment from richer developed countries or regions to poorer areas (Muhanna, 2007).

As the international tourism business is one of the most vulnerable sectors (David Martin-Consuegra, 2007), major concerns are emerging, since after showing a growth of 2% in from 2007 to 2008, international tourism has showed a deterioration which is expected to continue in 2009 because of the global recession, as tourists will travel to shorter periods and cheaper destinations (OxResearch, 2008). However, as a national economy crisis may be in need for a rapid recovery, as tourism is resilient and has many links to other sectors, it is worthy of a special consideration as a tool for post crisis recovery (Sausmarez, 2007).
South Africa’s tourism industry

The growth of SA’s tourism over the past decade is phenomenal. Africa can’t compete with a global centre of manufacturing to sell widgets to the west, but it can sell many vacations, as any African country has a beautiful scenery and wildlife, having a high probability to bring prosperity through tourism (Muga, 2009).

SA maintains a responsible tourism policy with guidelines by the South African Department of Environmental Affairs and Tourism (Merwe and Wocke, 2007), acknowledging the fact that SA’s tourism and travel industry is a key factor in its economy and a significant creator of jobs (Naido, 2008), while being an important component in the fight against poverty (Muhanna, 2007). The country invest resources to publicize its holiday’s offerings (TTG, 2008) and working on developing a national service excellence strategy for the tourism and hospitality industry (Naido, 2008), while job demand begins to outweights supply of trained and qualified candidates (The Argus, 2009). It is therefore clear that African economies could enhance their economic growth by strengthening their tourism industry (Fayissa, Nsiah et al., 2008).

SA is experiencing an economic slowdown which is expected to continue this year with weak consumption growth and worsening terms of trade (Observer, 2008). Being a key factor of SA economy, fears are rising with estimates that SA’s tourism industry is about to face the worldwide downturn, lagging behind the rest of the world in its timing (Bills, 2008). Therefore, employing strategic measures to support this valuable industry may be critical for SA economy.

Types of tourism and SA

There are various types of tourism sectors, in which SA shows a dominant presence. They include: The medical tourism – people travelling to another country to obtain health care (Cheung and Wilson, 2007), a recent global phenomenon with increasing importance for developing countries (Chambers and McIntosh, 2008). This type of tourism is booming due to the inexpensive and high quality medical services around the world (Chung, 2008), while lower costs and shorter waiting times are being motivating factors (Cheung and Wilson, 2007). The medical tourism market was worth $60 billion in 2006 and can rise to $100 billion by 2012 (Hansen, 2008). The medical tourism is expected to boost South African economy (Xinhua News Agency, 2006); accordingly, SA have set a goal of increasing medical tourism to raise income (Siegel, 2007). For example, SA is one of the places that are specializing in elective and plastic surgery, leading the pack in cosmetic tourism (Cooperman, 2007).

Ecotourism – a travel to experience natural environments or settings (Herbig and O’Hara, 1997), which is a highly visible and growing rapidly form of tourism (Carrier and Macleod, 2005), and where SA is considered to be a strong performer (Macdonald, 2008). SA has a large potential to attract tourists searching new experiences in areas of unexploited natural beauty and rich cultural resources (Briedenhann and Wickens, 2004), and has national parks which are seen as a major tourism asset, since wildlife is a major attraction for international visitors to the country (Saayman and Saayman, 2006).

Business tourism – people that travel for attending at meetings, conferences, exhibitions and incentives events (Hankinson, 2005). This is a highly lucrative and competitive sector of the tourism industry (Haven-tang, Jones et al., 2007), which is becoming a valuable sector of tourism in SA (Macdonald, 2008), while intentions are to grow SA into a premier global business tourism destination (Meeting News, 2008). In 2007, 652,000 business travelers arrived to SA, 7.17 percent of total arrivals, which exceeded the 490,000 in 2006, which in turn exceeded the 398,000 business arrivals in 2005 (Harmon, 2008).
Sports tourism – traveling in order to participate in or observe sporting activities (Thwaites, 1999). It is a sector which has received a growing demand throughout the world, because of the increase emphasis on health and fitness, and the increase of the use of sporting events in order to attract tourists (Herstein and Jaffe, 2008). Hosting an international sports event provides both the media exposure for the host nation, and an expectation for a positive return on the large investment for this event – an urgent benefit for SA which hosts the football’s World Cup in 2010 (Maennig and Plessis, 2007), an event that is considered a business opportunity with the expected influx of 3.5 million tourists (International Trade Forum, 2007).

THE BARTER

The globalization process has emphasized the advantages of international countertrade as means of economic development. One of the major forms of countertrade is the barter process (Leenders, Johnson et al., 2007), which is a fair exchange of goods or services between two businesses, often providing financial and marketing bonuses for both sides (Malitz, 1998). This process becomes an increasingly attractive option for businesses as the economy goes down (Friedman, 2002). The barter has many advantages, as it embodies a way for companies to save money and hold onto cash reserves (Doehrman, 2004). The corporate barter can be a good solution for excess inventory, vacant office space, or limited distribution (Briggins, 1996). Every blank slot, empty table, or vacant room means a lost revenue (Lazanov, 2001), while the major advantage for businesses is that they are paying for goods or services effectively at the cost of their own (Kellerman, 2003).

Figure 1 demonstrates an example for the barter exchange flow.
Barter attitude survey

In order to get a general impression of the attitude of industry professionals to the barter process, a survey was presented in 2004 to Small and Medium Sized Enterprise (SME) professionals and managers from Europe and Turkey, including government officials, ministerial departmental staff and interested local business persons, and to selected MA student at an Israeli University, which have participated in a logistics management program for people with managerial position in the industry in 2008. As a general survey of attitudes and feelings amongst those in attendance, the participants were asked to comment on whether barter membership could be effective in the areas below as displayed in Table 1:

<table>
<thead>
<tr>
<th>Responses to Survey Questionnaire:</th>
<th>Yes</th>
<th>Unsure</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Dealing with Obsolete or Excess Inventory</td>
<td>19</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>B Exchanging Trade Credits for A/R Payments</td>
<td>23</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>C Media / Advertising</td>
<td>16</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>D Hotel Accommodations</td>
<td>12</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>E Airline Travel</td>
<td>14</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>F Courier and Telephone Services</td>
<td>11</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>G Shipping</td>
<td>13</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>H Printing</td>
<td>9</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>I First Year Insurance Premiums</td>
<td>9</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>J Computers / Copiers</td>
<td>14</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>K Office Furniture &amp; Fixtures</td>
<td>12</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>L Raw Material</td>
<td>18</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>M Business deals, hard currency not available</td>
<td>23</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>N Trading services for other services</td>
<td>14</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>O Trading products for other products</td>
<td>22</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>P Other areas</td>
<td>21</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Q Know Barter Trade Company?</td>
<td>7</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>R Barter deal within the past 5 years?</td>
<td>6</td>
<td>0</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 1: Responses to Survey Questionnaire

Responses and findings of survey

With a total of 36 out of 71 (response rate of 50%), only 6 were or had been engaged in barter within the recent 5-year period. This volume of responses may reflect the perception of the need to circulate / publicize the advantages of barter processes and of the need for greater efficiencies in the relationships between the SMEs and barter services companies – particularly with the advent of e-marketplace applications.

From the perspective of the SME benefiting from barter exchanges, there is evidence that they are largely interested in the scope of the barter deal package and into other applications within the corporate environment.

Barter and tourism

One of the many areas that barter can be show efficient results is tourism. Thousands of businesses owners and professionals have discovered the barter as the ultimate discount travel (Ortega, 1995). Barter tourism has been proven to be successful among tourist organizations (Stafford, 2003), but also between countries (Xinluo, 1994), for example, the tourism is one of the Sino-Russian trade, as
Russia becomes China’s second largest source of visitors after Japan (China Business Information Network, 1998).

An important tool that have emerged and supports the expansion of barter tourism is the barter trade exchange (Post, 2000).

**THE BARTER TRADE EXCHANGE**

Barter has been around long before the e-commerce, but it’s a natural direction for development (Friedman, 2002). While the barter is the oldest form of reciprocal trade (West, 2001), it has become more formalized and widespread thorough the development of barter exchange organizations (Kellerman, 2003), when a new generation of barter company executives began to replace their older predecessors, attracting businesses and thus creating a network (Strugatch, 2001).

The barter exchange network acts as a broker for its clients’ goods and services, having thousands of clients that carry many sources of business needs (Malitz, 1998), therefore providing their members with more bartering opportunities they could find themselves, protecting the trade by some rules and regulations (Leder, 2002). The exchange establishes an account for the company that wishes to become a member, and the trades are reduced to monetary value—debiting spends and crediting trade sales (Doehrman, 2004). Therefore, a major advantage of the barter exchange is that they don’t require an even trade, enabling the accumulated credit from trades to be use for purchasing other different items (Halper, 2006). Nevertheless, though the exchange network’s can be quite advantageous, one must take into consideration that is requires a sign-up fee about $300 to $600, a transaction fee of 12-to-15 percent trade value, split between the buyer and seller (Doehrman, 2004), and the value of trade dollars received must be included in the gross income for tax purposes (Malitz, 1998). Moreover, though theoretically the barter is a cashless transaction that removes the need for hard currency generation, it is still used in some instances when difficulties arise, but is the least common (West, 2001).

**THE E-TOURISM MOVE: TOURISM ON THE NET**

The globalization process, followed by advanced technological tools have stressed the need for e-commerce integration into the business’s process; the success of companies of the new economy depends on their ability to integrate their business operations effectively in the internet environment (Jones, 2000), forcing the emergence of a virtual economy (Lancaster, 2008).

The internet has made bartering easy for individuals (Tablac, 2007) and for businesses, where participants can explore business opportunities and exchange goods or services across borders (Phoosuphanusorn, 2006). A growing number of businesses is using it to save cash, build their customer bases and buy merchandise they wouldn’t normally be able to afford (Forgrieve, 2000). One of the opportunities available is the trade of tourism services or products. Information communication technologies have revolutionized the travel industry, contributing to all processes in the value chains of the tourism industry (Buhalis and Deimezi, 2004), thus, the electronic distribution of tourism information and product are becoming a major consumer source for selecting a destination (Middle East Company News, 2007).

The tourism industry is well suited to the business online community model, which allows businesses to communicate with their customers and participants to exchange ideas (Stockdale, 2007). For example, one of the transactional processes between service suppliers and travel agencies is customer-supplier participation in online tourism communities (Thao and Swierczek, 2008).
With the recent boost in the exposure to e-tourism technology, especially the online barter exchange networks, it is clear that the industry may use these online opportunities – not only to survive the worldwide downturn, but also enjoy the electronic possibilities that support this most valuable industry.

FUTURE RESEARCH

Following the globalization process and the new digitalized economy, the tourism industry has entered the online realm with most efficiency. While the new online barter network exchange provides many opportunities for the tourism industry, the academic literature lacks information about information and especially empirical assessment of these benefits. Such a research may shed light about the best practices in order to aid the valuable tourism industry.

Furthermore, the responses of a barter survey are presented in order to have a general notion about the familiarity of the available tools for business professionals. A deeper analysis is needed in order to understand actual trends and most used opportunities. Successful results of such an analysis will enable the development of a practical strategic model that may aid business professionals and serve as a decision making tool to support strategic business decisions.

CONCLUSIONS

The tourism industry is a global growing business, playing an important role in the economy and society’s welfare. Over the past decade, SA have experience a phenomenal growth in tourists arrivals, contributing significantly to the country’s economy. However, with the world’s economical downturn, major concerns are rising with the predictions of the negative effect on the important tourism industry.

At the same time, the barter exchange - one of the most interesting options of international countertrade is being more appealing and attractive for businesses as the economy goes down. With the evolution of the new digital economy and technological capabilities, a barter system of online network exchanges has emerged, enabling a numerous trading opportunities, including the tourism commodities and services, and thus, providing SA with the ability to use this highly important industry as an aiding tool for surviving the global economic turmoil, while supporting its resistance in the face of the upcoming recession.

REFERENCES


Y GENERATION AND BEACH SAFETY

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ABSTRACT

The Y Generation is the generation born between 1982 and 2002 (7 to 27 years of age in 2009). They are characterised as conventional and committed, with respect for authority and with civic pride. They are special, sheltered, confident, team oriented, pressured and achieving. And they are the most educated generation in human history. The United Nations World Tourism Organization (2008) describes these student and youth travellers as ‘a major component of global tourism’ and ‘a unique market that must be understood for its specialist needs’. They are also depicted as ‘intrepid travellers’. Y Gen has a particular interest in beach culture as evidenced by their keen support of the multi-million dollar beach clothing industry, but they are also identified as a specific ‘at risk’ group for drowning, especially at surf beaches. This presentation describes the training of Y Gen surf lifesavers in Australia and their role in providing a safe beach environment for Y Gen tourists.

Keywords: Y Generation, Beach Safety, Visitors, Lifesavers, Beach Tourism

REFERENCE

KEY STAKEHOLDER VIEWS OF MARINE RESEARCH TOURISM IN AUSTRALIA

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ABSTRACT

Marine research tourism (MRT) is defined as marine ecotourism where marine research is an important part of the tourism attraction. The aim of this study was to further understand the supply side views of Australian MRT stakeholders towards the present and any potential development of MRT in Australia. An online survey of 49 key stakeholders views and subsequent analysis was undertaken. Stakeholders were asked 19 questions about their views on; the benefits of, driving forces, issues, and opportunities for, and the role of private industry and government in MRT in Australia.

This study identified three likely benefits of MRT that can be considered to be a core competitive advantage for MRT when compared with many marine tourism or ecotourism ventures. The potential for increased opportunities and benefits of MRT to indigenous Australians is also identified. Survey respondents also identified a range of potential coordination and service provision roles for Australian indigenous groups, environmental conservation organisations and marine education societies in any coordinated development of MRT in Australia. Academic publications and the involvement of marine research agencies with MRT were identified as important or essential to MRT.

Overall, conservation organisations, marine education societies, marine research students, tour organisations, and MRT operators had positive views about MRT in Australia. However, many marine managers, researchers and tour operators appeared to have a reticence towards MRT. This reticence is partly due to MRT related concerns that have not previously been identified in the literature. They are; possible independent influence from other MRT stakeholders on established marine research agendas, possible competition by MRT for traditional research funding, and the possibility of popular MRT science competing with less popular but important marine research priorities. To address such concerns, this paper recommends a range of strategies for any coordinated strategic plan to develop MRT in Australia.

Key Words: Marine, Science, Tourism, Stakeholder, Ecotourism

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The author thanks Dr. Heather Zeppel for the PhD supervisor overview of the PhD research that supports this paper.
INTRODUCTION

Marine research tourism is defined as marine ecotourism where marine research is an important part of the tourism attraction (adapted from Benson, 2005). This paper reports on a study that aimed to further understand the views of key stakeholders towards the supply of present and future of MRT in Australia. The following topics were addressed;

1. The potential benefits of marine research tourism
2. Private industry involvement in marine research tourism
3. Government involvement in marine research tourism
4. Driving forces and issues for marine research tourism in Australia
5. Opportunities for marine research tourism stakeholders in Australia

For this paper, key Australian marine research tourism (MRT) stakeholders include marine researchers, marine managers, marine conservation groups, marine education groups, marine tour operators, and tourists from Australia and elsewhere (adapted from Coghlan, 2007, Cuthill, 2000, Musso & Inglis, 1998). Furthermore, a MRT product must last for one or more days, be advertised publicly, take paying tourists or paying volunteers, and operate on a commercial basis (adapted from Ellis, 2003a). Additionally, likely features of a MRT product are considered to be (Benson, 2005):

1. There is an opportunity for tourists and/or volunteers to be involved with marine research activity
2. There are researchers who are engaged in genuine marine research pursuits
3. There is an official research centre that supports research activity
4. There is active involvement of the tourist in the marine research experience
5. There is research supervision for any tourist marine research activity

Significantly, this study uncovered some key stakeholder concerns or issues that have not been previously identified in the academic literature. It also identifies and discusses a range of stakeholder views, driving forces, benefits, opportunities, and other concerns or issues about the present and future of MRT in Australia. Study outcomes include a range of recommended key strategies for any coordinated strategic plan to develop MRT in Australia.

STUDY

Marine research tourism globally and in Australia

Both marine and terrestrial research tourism have developed from a handful of localised operators in the late 1960s to early 1970s to at least twenty well known regional and globally focused operators (Cousins, 2007; Ellis, 2003b; Morse, 1997). These days, the majority of regional or globally research tourism operators are companies based in the United Kingdom or United States of America (Cousins, 2007; Ellis, 2003b; Lorimer, 2008; Whatmore, 2008). Those companies include the Earthwatch Institute, the Oceanic Society, Conservation Volunteers Australia, the Tethys Institute, Global Vision International, and the Whale and Dolphin Conservation Society. The distribution of these research tourism products is not evenly distributed with Central and South America accounting for 30%, North America 20%, Europe 17%, and Australia/New Zealand and the Pacific 14% (Ellis, 2003b).

A brief assessment of MRT in Australian indicates that it is mostly characterised by about twenty five small, autonomous, and privately owned enterprises that operate about 30 ventures across Australia (}
There is a notable absence of regional and globally based operators in Australia. The exception is the Earthwatch Institute who offers whale shark research and sea turtle research marine ecotourism ventures in northern Australia. Ten of these twenty five enterprises offer MRT experiences on a regular basis, while the remainder offer MRT experiences on a seasonal and/or one off basis. Furthermore, ten enterprises offer MRT experiences that last one or more weeks and seven enterprises offer predominantly marine education experiences that can last up to one day. Examples of MRT ventures in Australia include; the Undersea Explorer (1 on Figure 1), Landscape Expeditions (7), The Pacific Marine Life Institute (12), Kangaroo Island Marine Tours (15) and the Lakes Explorer (19). 11 of these enterprises operate in the Great Barrier Reef region in Australia, 12 operate in temperate Australia, 5 in north Western Australia, and two in the Gulf of Carpentaria.

When compared to the globalised MRT from the United Kingdom or United States of America, it can be reasoned that the MRT industry in Australia is relatively under developed or at least under-coordinated. This could be considered as surprising as, in world terms; Australia has a relatively mature marine tourism industry, an advanced marine research sector, a wealth of marine wildlife and other natural assets, and a large ocean and coastal region. It could be proposed that Australian MRT has potential (albeit an undetermined potential) to be further coordinated and developed.

**Known stakeholder issues**

Key MRT stakeholders often have conflicting views as to the operation and development of MRT ventures (Coghlan, 2008; Cuthill, 2000; Musso & Inglis, 1998). For example, research tourism participants often seek substantial personal benefits from their volunteer tourist experience (Henderson, 1981). However, volunteer expedition leaders are typically more focused on their research rather than the interests of the tourist (Coghlan, 2008). Additionally, the marine tour
operator may be too busy and not suitably trained to effectively support the interests of marine researchers (Musso and Inglis, 1998). Environmental managers and scientists can have very different perceptions and expectations regarding the role of science in managing wildlife tourism (Rodger & Moore, 2004). Furthermore, conservation organisations who may also seek to promote conservation outcomes from MRT ventures but may not appreciate the business requisites of the marine tourism operator (Cousins, 2007; Vaughn, 2000). To address such conflicting views and form partnerships, Cousins (2007), Coghlan (2007), Cuthill (2000) and Musso & Inglis (1998) all recommend that the views of stakeholders should be understood and satisfied.

The research aim

Ellis (2003a) reasoned that research tourism may continue to grow if there is an increase in the involvement of stakeholder’s who are skilled and knowledgeable about MRT operations and development. It is also reasonable to suggest that increased stakeholder involvement is more likely if they have favourable views towards MRT. If key stakeholders have conflicting views towards MRT, then to progress MRT and form partnerships, these concerns would need to be addressed. However, no research has specifically reported on the views of key stakeholders about MRT in Australia. Therefore, to address this research gap, the aim of this study is to further understand the supply side views of Australian MRT stakeholders towards the present and any potential development of MRT in Australia.

Method

An anonymous online survey was devised for key stakeholders to undertake. The survey was taken by 49 key stakeholders between April 2007 and September 2007. There were 19 questions (Table 1) within this self administered survey. These survey questions were derived from a literature review and preliminary discussions with approximately 10 key stakeholders. Of the 49 survey respondents, 44 were from Australia and 5 were from elsewhere. Survey respondents were identified through word of mouth recommendations from other stakeholders, and direct contact with marine tourism, research, conservation and education institutions across Australia, and elsewhere.

Survey responses were interpreted according to the knowledge of the principal researchers, one of whom has 15 years experience as MRT operator. This knowledge was also acquired through evaluation of previous literature, previous discussion with approximately 10 key stakeholders, analysis of survey results, and follow up discussions with approximately 30 key stakeholders.

Furthermore, all survey respondents were professionals from their stakeholder group. They were also, at least from their stakeholder view point, somewhat knowledgeable about MRT. Many stakeholders had high levels of expertise in this topic. Given this, it is proposed that the survey respondent’s views carry notable credence, and could, if they were asked, represent an official position from their relevant stakeholder organisation. A breakdown of the stakeholder groups of all survey respondents is shown in Table 2.
<table>
<thead>
<tr>
<th>Question No.</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits of marine research tourism</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>What are the likely benefits of marine research tourism?</td>
</tr>
<tr>
<td>2</td>
<td>From a list, which key stakeholders possibly benefit from MRT?</td>
</tr>
<tr>
<td>3</td>
<td>Who else could benefit from MRT?</td>
</tr>
<tr>
<td><strong>Private industry involvement in marine research tourism</strong></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Can MRT be used to successfully diversify marine tourism in Australia?</td>
</tr>
<tr>
<td>5</td>
<td>Can MRT be used to effectively compete with international marine tourism attractions?</td>
</tr>
<tr>
<td>6</td>
<td>Can the commercial viability of existing marine tourism operators be improved by one or more MRT experiences?</td>
</tr>
<tr>
<td>7</td>
<td>A review of existing MRT venture web sites indicates that more than 95% of MRT ventures are privately operated. Would you be able to comment on why this is so?</td>
</tr>
<tr>
<td><strong>Government involvement in marine research tourism</strong></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Should MRT marine research programs always be relevant to Government marine research or management priorities?</td>
</tr>
<tr>
<td>9</td>
<td>Can MRT ventures involve popular marine science that does not address current Government marine research or management priorities?</td>
</tr>
<tr>
<td>10</td>
<td>How important are academic publications and conference presentations to a MRT venture?</td>
</tr>
<tr>
<td>11</td>
<td>Could increased academic publications or conference presentations from MRT ventures be an incentive for governments to be further involved in MRT ventures?</td>
</tr>
<tr>
<td>12</td>
<td>How important is the involvement of government marine management agencies in MRT across Australia?</td>
</tr>
<tr>
<td>13</td>
<td>How important is the involvement of government marine research agencies in MRT across Australia?</td>
</tr>
<tr>
<td><strong>Driving forces, major factors, issue, and constraints</strong></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>What are the driving forces behind MRT?</td>
</tr>
<tr>
<td>15</td>
<td>What issues would concern you most about any expansion of MRT across Australia?</td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>How could the benefits from marine research tourism be increased?</td>
</tr>
<tr>
<td>17</td>
<td>What are the likely roles of Australian indigenous people towards the development of MRT?</td>
</tr>
<tr>
<td>18</td>
<td>What are the likely roles of environmental conservation groups towards the development of MRT?</td>
</tr>
<tr>
<td>19</td>
<td>What are the likely roles of marine education societies towards the development of MRT?</td>
</tr>
</tbody>
</table>

Table 1: Survey questions

Results and discussion

<table>
<thead>
<tr>
<th>Occupation of respondent</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postgraduate marine research student</td>
<td>3</td>
</tr>
<tr>
<td>Marine manager</td>
<td>6</td>
</tr>
<tr>
<td>Marine research tour operator</td>
<td>5</td>
</tr>
<tr>
<td>Marine researcher</td>
<td>9</td>
</tr>
<tr>
<td>Marine tour operator</td>
<td>6</td>
</tr>
<tr>
<td>Marine education society</td>
<td>7</td>
</tr>
<tr>
<td>Tourism organisation</td>
<td>5</td>
</tr>
<tr>
<td>Environmental conservation organisation</td>
<td>7</td>
</tr>
<tr>
<td>Not known</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>49</td>
</tr>
</tbody>
</table>

Table 2: The stakeholder groups of survey respondents
The likely benefits of marine research tourism

Question 1. What are the likely benefits of marine research tourism?

Likely benefits of MRT to stakeholders are said include; financial and human resource contributions to marine research and management programs, education benefits to marine research tourists, and a marketing brand for marine ecotourism (Curtin & Wilkes, 2005; Cuthill, 2000; Darwall & Dulvy, 1996; Dearden, Bennett, Rollins, 2006; Ellis, 2003a, 2003b; Foster-Smith & Evans, 2003; Musso & Inglis, 1998; Villeneuve, Bouchard, & Laliberte, 2002).

Table 3 shows the views of survey respondents to the question about likely benefits of MRT. These suggested MRT benefits can be considered to be a core competitive advantage for MRT when compared with many marine tourism or ecotourism ventures. For example, MRT can provide better research access to remote marine locations, increased and faster monitoring, data collection and processing, increased spatial range and research effectiveness, and increased funding for marine research. It is likely that such potential benefits would be considered highly desirable by many marine research and management agencies.

MRT can also result in increased community (i.e. the tourist and the broader community) education, awareness and stewardship of the marine environment. This result infers that seeking such outcomes is or should be an intended objective of MRT. Five survey respondents identifies that MRT can result in increased community ownership, support and capacity in marine management and research. There are also identified opportunities for the tourist to participate through professional development and contributing their skills and worldviews to the marine research, discovery, management, and conservation process.

<table>
<thead>
<tr>
<th>Identified likely benefit</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased community awareness and stewardship of research and conservation issues</td>
<td>17</td>
</tr>
<tr>
<td>Increased funding and other resources for marine research</td>
<td>17</td>
</tr>
<tr>
<td>Increased and faster monitoring, data collection and processing</td>
<td>11</td>
</tr>
<tr>
<td>Increased community ownership, support and capacity in marine management and research</td>
<td>5</td>
</tr>
<tr>
<td>Increased speed, spatial range and effectiveness of research</td>
<td>2</td>
</tr>
<tr>
<td>Better access to remote locations</td>
<td>2</td>
</tr>
<tr>
<td>Co-management and funding of resources</td>
<td>1</td>
</tr>
<tr>
<td>Diversity of tourist worldviews and skills that can assist the research process</td>
<td>1</td>
</tr>
<tr>
<td>Professional development of tourists</td>
<td>1</td>
</tr>
<tr>
<td>Tourists who feel they have contributed to something important like a significant marine conservation outcome</td>
<td>1</td>
</tr>
<tr>
<td>Improved the tourist’s experience by exceeding their expectations of depth of involvement with the marine environment and researchers</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 3: Likely benefits of marine research tourism

Finally, these results highlight two potential key objectives of MRT that can enhance the tourist’s experience and increase their awareness and stewardship of the marine environment. That is, MRT can seek to; encourage the tourist to feel that they have contributed to something important such as a significant marine conservation outcome, and also exceed the marine tourist’s expectations in terms of the depth of interaction with the marine environment and researchers. These two objectives are also important as they relate to a need to appeal to and satisfy the marine conservation and discovery preferences of marine research tourists as described by Wood and Zeppel (2008).
Question 2. Which key stakeholders could possibly benefit from MRT?

Figure 2 shows that key stakeholders considered indigenous Australian organisations, private marine researchers, dive training organisations, and government marine management and research agencies are likely or very likely to benefit from MRT in Australia. Perhaps surprisingly, is the listing of indigenous Australian organisations as the most likely to benefit from MRT as just 1 (i.e. venture no. 4) of the 30 MRT ventures shown in Figure 1 is known to involve indigenous Australian organisations. Such a result indicates then there is potential growth for MRT in Australia that involves indigenous Australian organisations.

![Figure 2: Possible beneficiaries from MRT](image)

On average, key stakeholders also considered the marine research tourist as just a ‘possible’ beneficiary of MRT in Australia (Figure 2). Analysis of the underlying data indicates that much of this low outcome can be attributed to the unfavourable survey responses of marine managers, researchers, and tour operators. All other stakeholders considered the marine research tourist to be a likely beneficiary. It’s possible that this is explained by these three stakeholder groups being less familiar or more sceptical about tourists receiving benefits from being involved with marine research. A possibly suitable response to address the latter concern is that, if a MRT experience can be correctly delivered, then suitably
motivated tourists will greatly benefit from that experience in terms of a deeper and closer encounter with the marine environment. This in turn, may result in their increased education and awareness of marine research, conservation and management practices and issues.

**Question 3.** Who else could benefit from MRT?

Key stakeholders were also asked who else could benefit from MRT. Responses included universities and technical colleges, the broader tourism industry, tourists, local businesses, schools, children, the wider public, marine wildlife and habitats, commercial fisherman, and seafood consumers. This information indicates that if MRT is developed appropriately then there may be many potential beneficiaries from MRT.

**Supply - Private industry involvement in marine research tourism**

**Question 4.** Can MRT successfully diversify marine tourism in Australia?

Figure 3 illustrates that most key stakeholder groups had positive views (i.e. yes or maybe) that MRT can be used to successfully diversify marine tourism? Such a result may indicate that, depending on commercial viability, there is an opportunity for an increased MRT role in some marine tourism ventures in Australia. Just two stakeholders (i.e. a marine manager and a current MRT operator) considered that marine tourism could not successfully diversify MRT in Australia. However, in other survey results, these two stakeholders positively commented about potential opportunities for MRT in Australia. A possible interpretation of their views is that they consider popular marine tourism, with its mass tourism characteristics, as unlikely to adapt or successfully support a MRT experience.

![Figure 3: Using marine research tourism to successfully diversify marine tourism](image_url)

**Question 5.** Can MRT be used to effectively compete with international marine tourism attractions?

Figure 4 illustrates that most key stakeholder groups were of the positive view that MRT can or may be used to effectively compete with international marine tourism attractions? This result indicates that there is an opportunity for Australian tourism product developers (e.g. tourism...
operators and marketing organisations) to actively support the development of MRT products in Australia so as to increase the competitiveness of the Australian marine tourism industry.

Figure 4: Using MRT effectively compete with overseas marine tourism attractions

**Question 6.** Can a MRT experience improve the commercial viability of marine tourism?

Figure 5 shows that 30 key stakeholders had positive responses (i.e. likely or very likely) to this question. Not surprisingly, 5 out of a total 5 MRT operators considered that a MRT experience as likely or very likely to improve the commercial viability of a marine tourism venture. Tourism organisations had a more positive view (i.e. 3 likely and 1 possibly) to this question, and this may indicate an inclination of tourism organisations to favour diversification and product development where possible. Many marine education societies, environmental conservation organisations, and marine research students also had favourable views towards this question. This is likely to represent their overall enthusiasm for the potential of MRT in Australia and perhaps reflects some naivety to the requisites of operating a commercial marine tour.

However, other marine tour operators had mixed views with 3 favourable views and 2 not favourable views (i.e. possibly or unlikely). This indicates that some marine tour operators are sceptical about the commercial viability of including a MRT experience in their marine tour. Furthermore, marine managers and researchers had mixed views as well and this may indicate that these stakeholder groups are reticent to have a service role that delivers marine research as an attraction to marine tourists.
Figure 5: Possibility of improving commercial viability of marine tourism

**Question 7.** Why is more than 95% of Australian MRT ventures privately operated?

A pre-survey review of existing Australian MRT indicated that more than 95% of MRT ventures are privately operated. When asked about this, the overall response from survey respondents was directed at government caution to be involved, the tourism industry’s higher capability to operate tourism ventures, and business and lifestyle benefits to MRT tour operators. Full results are listed in Appendix 1. Government caution was said to be due to marine research quality issues, bureaucracy, scepticism of MRT as a reliable marine research capability, and occupational health and safety issues. Such a result provides many reasons as to why government marine research and management agencies appear to be cautious when considering their involvement and role in MRT.

**Supply - Government involvement in marine research tourism**

**Question 8.** Should the marine research programs on MRT venture’s research programs always be relevant to government marine research or management priorities?

Figure 6 indicates mixed views by stakeholders towards the relevance of MRT marine research programs to government marine research or management priorities. Notably, 5 out of 8 marine researchers considered marine research program relevance as not important. Only 1 of 6 marine managers considered marine research program relevance to be compulsory. These results clearly indicate that many marine researchers and managers do not believe that marine research programs on MRT ventures programs should always be relevant to government marine research or management priorities. Notably, 3 of 7 representatives of environmental conservation organisations considered marine research program relevance to be compulsory. This could be interpreted as some environmental conservation organisations having an aspiration to contribute and maybe influence government marine research and management programs through MRT.
Question 9. Can MRT ventures involve popular marine science (e.g. whale, turtle and shark research) that does not address current government marine research or management priorities?

Figure 7 shows that 9 of 49 survey respondents had positive views towards this question. These were representatives from environmental conservation organisations (3), marine education societies (3), marine researchers (2) and a marine tour operator (1). However, 15 of 40 survey respondents had a negative view (i.e. no). These were representatives from environmental conservation organisations (3), marine education societies (2), marine researchers (4), marine managers (3), tourism organisations (2) and a MRT operator (1). This indicates that amongst Australian MRT stakeholders, this question is controversial.

Some of this stakeholder concern may be due to their valid views that, in some cases, popular science focused MRT ventures will mainly focus on popular science and not focus on or contribute to less popular but perhaps more important research priorities. To these stakeholders, such research could seem like a wasted use of costly resources. Furthermore, because of the likely popularity of these ventures to tourists, these ventures may be; financially independent of government funding, therefore less directly dependent on government influence, and potentially less concerned with government research priorities.

However, when asked to address such concerns, a MRT operator stated that MRT research successes can inform and positively influence government marine research or management priorities. Examples include the role of the Undersea Explorer (Arnold & Birtles, 1999; Birtles, Valentine, Curnock, Arnold & Dunstan, 2002; Dunstan, 2009) in developing minke whale, shark and nautilus research, and the initiation of Reef Check Australia. Other examples are the Whale Shark monitoring research of Ecocean in Western Australia, turtle and ghost nest monitoring and conservation by Cape York Turtle Rescue in Queensland, sea bird research in the outer Coral Sea by Ecology Solutions, and sea dragon research by the Sapphire Coast Marine Discovery Centre in New South Wales, Australia.

Survey respondent feedback also indicates that some marine management or research organisations may be cautious about the potential redirection of traditional marine research investment from
organisations such as the Australian Government into MRT operations that demonstrate that they can undertake successful marine research, conservation and education at a lower cost than them. In some cases, this is likely to be a valid concern as many MRT operators will seek to obtain investment from marine research investors and hence directly or indirectly seek to compete with some marine research or management agencies. However, many MRT operators would contend that without harnessing the tourism dollar, many of their marine research, management, conservation and education outcomes would not have occurred. MRT operators would further contend that their tourism subsidised research capability can more frequently access a great number and/or more remote of marine research locations.

Figure 7: Popular marine science and current government marine research or management priorities

Question 10. How important are academic publications and conference presentations to a MRT venture?

Figure 8 shows that most key stakeholders believe that academic publications and conference presentations are important and/or essential to MRT. The exceptions are a marine tour operator, a MRT operator, a marine manager, and a marine researcher. A possible explanation is that these survey respondents believed that MRT can plausibly operate outside of the marine research peer review process. Such an occurrence could appeal to some MRT operators as they would have fewer publishing obligations while still attracting a suitable market and delivering conservation outcomes. However there are potential benefits to MRT operators from producing academic publications from MRT. For example, a MRT operator commented that academic publications are important for longer term credibility of the venture, attracting scientists to participate, involving conservation groups, and perhaps gaining government funding.
Question 11. Can academic publications and conference presentations increase government involvement in MRT?

Figure 9 indicates that most key stakeholders believe that academic publications and conference presentations will or may increase government involvement. The exceptions to this overall view are some marine managers and marine researchers who believe that academic publications and conference presentations will not or maybe will increase government involvement in MRT. These latter results may again indicate a reticence by marine managers and marine researchers towards increased government recognition of MRT and any potential increase in government research funding of MRT. Responding to these concerns, a MRT operator stated that publications and presentations would be an effective way to potentially convince some cautious key stakeholders that the tourism dollar can be successfully harnessed to fund worthwhile marine research projects.
Question 12. How important is the involvement of government marine management agencies in MRT across Australia?

Figure 10 indicates that most key stakeholders would believe that government marine management agency involvement in MRT is important and/or essential to MRT. Conversely, three survey respondents considered marine research agency involvement as not important. This indicates a low but existing likelihood that some stakeholders could readily participate in MRT without the involvement of marine management authorities.

Notably, 9 of 44 survey respondents would or could not answer this question. These survey respondents were from key stakeholder groups such as tourism organisations, environmental conservation organisations and marine researchers. The reason for this is not known. However, it is speculated that such reticence could be due to a respect for the jurisdiction and independence of marine management agencies, or self acknowledgement by the survey respondents that they do not have the appropriate knowledge to satisfactorily respond to the question.

Figure 10: Importance of the involvement of government marine management agencies

Question 13. How important is the involvement of government marine research agencies in MRT?

Figure 11 shows that 37 of 42 key survey respondents believed that government marine research agency involvement in MRT is important and/or essential. This indicates that a majority of MRT stakeholders in Australia would consider that the involvement of marine research agencies is important and/or essential. This is in contrast to the 3 negative views towards the involvement of marine management agencies in MRT as identified in question 12. Seven survey respondents could not or would not answer this question.
Table 4 shows that key stakeholders considered the changing nature of tourists as the most important driving forces behind MRT. That is, increasingly educated, active, conservation volunteer focused, environmentally responsible, marine documentary watching, and alternative tourist market is the most likely driving force behind MRT. Driving forces such as the need for increased funding of marine research and monitoring were considered possible to likely driving forces behind MRT. Increasingly advanced and easy to use marine research technology, and increasingly safe and comfortable marine tourism ventures were considered as just possible driving forces behind MRT.

There are, at the very least, six key stakeholder groups that could directly benefit, if these driving forces were appropriately responded to. That is, environmental conservation organisations would seek to appeal and leverage support from the above potential marine research tourist. Marine education societies could provide marine education services to those tourists. Marine researchers and managers could use MRT to fund some of their marine research and monitoring. Existing MRT operators would benefit if the above driving forces of MRT experiences were further harnessed. Existing MRT operators could also diversify into MRT if these stated driving forces are valid.
Table 4: Driving forces behind marine research tourism

Question 15. What are the issues regarding any expansion of MRT across Australia?

Table 5 illustrates that issues that involve the marine research tourist were the biggest issues regarding any expansion of MRT in Australia. These were occupational health and safety, public liability insurance, keeping the tourist satisfied, and quality of the tourist’s research contribution. Key stakeholders also considered the collaboration required between marine researchers, marine managers and marine tour operators as an important issue. The lowest rated issues were a shortage of suitably skilled tourists and interested marine tourism operators, however they were both considered as above somewhat important.

Table 5: Issues regarding any expansion of marine research tourism across Australia

Opportunities

Question 16. How could any benefits from marine research tourism be increased?

Table 6 summarises the suggestions by survey respondents regarding how to increase the benefits from MRT. These suggestions related to the operation and development of the MRT venture, the involvement of marine researchers and managers, and the involvement and satisfaction of MRT tourists. Popular suggestions include increased funding for any training and supervision of volunteer tourists (i.e. 6 responses), and increased recognition of MRT benefits by marine research and management agencies (i.e. 5 responses).
<table>
<thead>
<tr>
<th>Suggestion</th>
<th>Desired benefit</th>
<th>No. of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Venture related</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A quality assured training regime for any volunteer tourists. Increased funding for training and better supervision.</td>
<td>Greater reliability in data collection and processing</td>
<td>6</td>
</tr>
<tr>
<td>Development of accredited marine research tourism guides recognised by ecotourism, marine tourism and marine research authorities</td>
<td>Reduce the marine researcher’s obligations to look after the tourist. Reduce the workload of the marine tour operator to support marine research. Supervise the tourist. Reduce OH&amp;S and public liability issues. Improve the tourist and marine researcher experience, and hence improve MRT outcomes.</td>
<td>2</td>
</tr>
<tr>
<td>Special permits for access to special sites for best practice MRT operators</td>
<td>Increase the desirability of MRT amongst MRT operators. Improved experience for the tourist.</td>
<td>1</td>
</tr>
<tr>
<td>Quality insurance when involving tourists in marine research</td>
<td>Reduce liability of marine tour operators and other stakeholders if a research related accident occurs.</td>
<td>1</td>
</tr>
<tr>
<td>Invest in this form of tourism in a strategic manners</td>
<td>Further development of quality MRT products</td>
<td>1</td>
</tr>
<tr>
<td><strong>Marine research and management related</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased recognition of MRT benefits by marine research and management agencies</td>
<td>Potentially increased investment in MRT by marine research and management agencies and hence more benefits from MRT</td>
<td>5</td>
</tr>
<tr>
<td>Develop coordinated lines of communication amongst potential users of the marine research and key stakeholders.</td>
<td>Increase the usefulness and communication of marine research outputs</td>
<td>4</td>
</tr>
<tr>
<td><strong>Tourist related</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make as many tourists as possible feel part of the research. Provide feedback to the tourist. Increase the presence of well known marine researchers or conservationists on MRT ventures.</td>
<td>The tourist will feel part of something and will contribute to more marine research and conservation programs</td>
<td>3</td>
</tr>
<tr>
<td>Seek to provide consistent and simplified marine research information to the tourist. Provide a quality hands on marine research tourism experience to the tourist.</td>
<td>A potentially more satisfied, educated and aware tourist</td>
<td>1</td>
</tr>
<tr>
<td>Profile the demographics and motivations of marine research tourists</td>
<td>Assist with development of MRT products that satisfy the tourist and harness their potential contribution</td>
<td>1</td>
</tr>
<tr>
<td>Promote the unique research and conservation benefits of MRT to the marine tourism market</td>
<td>Increased demand for a MRT experience and hence increased marine research and conservation outcomes</td>
<td>1</td>
</tr>
<tr>
<td>Increase accessibility and reduced costs for a MRT experience</td>
<td>Increased demand for a MRT experience and hence increased marine research and conservation outcomes</td>
<td>1</td>
</tr>
<tr>
<td>A mechanism to capture the tourist’s thoughts on future research directions.</td>
<td>A potentially more satisfied tourist, and potential suggestions to improve marine research activity</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 6: How the benefits from MRT could be increased?
Question 17. What are the likely roles of Australian indigenous people towards any development of MRT?

Table 7 indicates that there are many stakeholder suggestions about Indigenous Australians within Australian MRT. These suggestions focus on the paid involvement of and benefit to Indigenous Australians to share their unique Indigenous cultural and marine environmental knowledge with marine research tourists, and the opportunity to be involved in collaborative marine management through MRT. It is likely that when survey respondents were referring to these roles and type of involvement when they collectively stated that indigenous Australian organisations were very likely to benefit from MRT (Figure 2).

This study had logistics related difficulties in identifying a group of indigenous Australians who were available to represent likely indigenous Australian views about MRT across Australia. Hence, the direct views of Indigenous Australian towards MRT in Australia were not acquired in this study. Therefore, given the apparent potential growth for Australian based MRT that involves indigenous Australians, this study highlights that there is a research opportunity to identify and evaluate a representative range of Indigenous Australian’s views of about present and future MRT in Australia. Such a study would be integrated with results from this study.

<table>
<thead>
<tr>
<th>Suggested role or guidance</th>
<th>No. of suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great and rare, knowledge and skills</td>
<td>9</td>
</tr>
<tr>
<td>Custodian/Advocates</td>
<td>7</td>
</tr>
<tr>
<td>Unique Australian experience</td>
<td>6</td>
</tr>
<tr>
<td>Where appropriate, MRT should benefit Australian Indigenous people</td>
<td>5</td>
</tr>
<tr>
<td>Marine research tourism requires consultation with Indigenous communities and TOs</td>
<td>5</td>
</tr>
<tr>
<td>Access to Indigenous lands may be an issue</td>
<td>4</td>
</tr>
<tr>
<td>Traditional knowledge for marine research</td>
<td>3</td>
</tr>
<tr>
<td>Partnership with scientists and/or managers</td>
<td>3</td>
</tr>
<tr>
<td>Guide roles for MRT</td>
<td>3</td>
</tr>
<tr>
<td>Cultural connections with the marine environment</td>
<td>3</td>
</tr>
<tr>
<td>Local knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Training, capacity building for Indigenous Australians</td>
<td>3</td>
</tr>
<tr>
<td>Coastal ventures mainly and not outer the reef</td>
<td>1</td>
</tr>
<tr>
<td>Managing wildlife through MRT</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7: Suggested likely roles of Indigenous Australians

Question 18. What are the likely roles or guidance for conservation non government organisations towards any development of MRT?

Table 8 shows the suggested likely roles or guidance for the involvement of conservation organisations within Australian MRT. Notably, a role as advocate, endorsement, promotion, dissemination and organisation was suggested 9 times by key stakeholders. It was also suggested that conservation groups could provide tourists, marketing services, credibility, leadership, staff and guides, interpretation material, training, resource stewardship best practice guidelines, and research program design. This information indicates that many stakeholders can foresee a coordinating and service provision role by conservation groups for any future organisation of MRT in Australia.
Suggested role | No. of suggestions
---|---
Advocate/endorsement/promote/disseminate/organisers | 9
Provide paying tourists from conservation groups, marketing, and add credibility to ventures | 7
Provide staff and guides | 4
Provide interpretation material | 2
Be present and future leaders and mentors in MRT | 2
Support community engagement | 2
Resource stewards | 2
Focus on rare, threatened, and endangered wildlife, and habitat | 2
Potential benefit from MRT in terms of funding and promotion | 2
Support training | 1
Less constrained than government | 1
Develop best practice guidelines | 1
Research program design | 1

Table 8: Suggested likely roles of conservation organisations

**Question 19.** What are the likely roles or guidance for marine education societies towards any development of MRT?

Similar to environmental conservation groups, many key stakeholders recommend a coordinating and service provision role by marine education societies for any future organisation of MRT in Australia (Table 9). It was suggested that marine education societies are presently limited in their involvement in marine tourism due to a lack of financial means. These results suggest that marine education societies are likely advocates for MRT and likely financial beneficiaries from service provision to MRT ventures. With increased MRT, it is also likely that they would have increased opportunities to deliver educate and increased awareness about the marine environment.

Suggested role | No. of suggestions
---|---
Advocate/endorsement/promote | 12
Trainers of tourists | 4
Trainer of guides | 3
Provide guides | 3
Train students | 2
Benefits to themselves | 2
Providers of students | 1
Provider of tourists | 1
Provide science interpretation | 1
Limited involvement due to lack of funding | 1
Accreditation providers | 1
Partner with ventures | 1
Collaborate with local communities | 1
Guide research direction | 1

Table 9: Suggested likely roles of marine educators

**Discussion**

This study identified a range of potential benefits, driving forces and issues that are associated with MRT. Any coordinated strategic plan to develop MRT in Australia would seek respond to these
driving forces and issues, and increase the identified benefits of MRT. Given the range of inter-stakeholder issues, it is recommended that such a coordinated strategic plan would seek to form partnerships amongst representatives from all the identified key stakeholders. This involvement would depend on understanding and satisfying the views of key stakeholders (Cousins, 2007; Coghlan, 2007; Cuthill, 2000; Musso and Inglis, 1998) towards MRT and its potential development in Australia.

With regards to MRT and its potential development in Australia, this study found that amongst survey respondents, certain key stakeholder groups had consistently positive and certain key stakeholder groups had consistently mixed views. Key stakeholders with consistently positive views are environmental conservation organisations, marine education societies, marine research students, tour organisations and MRT operators. This study suggests that these stakeholder groups would be ready advocates and contributors to any coordinated strategic plan for MRT in Australia. In particular, this study reveals a range of potential roles for environmental conservation organisations and marine education societies in coordinating and providing services for future MRT in Australia.

This study also identified a range of valid reasons as to why many marine managers, researchers and tour operators would have mixed views about MRT. For example, many marine managers and researchers would appear to be cautious about the quality of the tourist’s research contribution, ensuring occupational health and safety for the tourist, public liability insurance, and keeping the tourist satisfied. It has been suggested that a MRT guide role be developed to address such concerns.

This study has identified a number of valid key stakeholder concerns or issues that have not been previously identified in the academic literature. These include valid concerns that MRT may compete with marine researchers and managers for traditional marine research investment. Additionally, there is concern that MRT may also focus on popular science at the expense of research that focuses on more important and less popular research priorities. They may also have a valid concern that environmental conservation organisations may use MRT research, management, conservation, and education outcomes to influence marine management and research agendas. Furthermore, many marine managers, researchers and tour operators may be unaware or sceptical of the stated benefits of MRT for themselves and tourists.

Any coordinated strategic plan to develop MRT in Australia would seek to address and resolve the concerns of marine managers, researchers and tour operators. Suggested strategies to do this would be;

1. Increase the recognition of MRT benefits by marine research and management agencies, and marine tour operators
2. Develop coordinated lines of communication amongst key MRT stakeholders and other potential users of MRT research
3. Seek to ensure that MRT produce reliable research outcomes and academic publications
4. Seek to integrate MRT popular marine research with mainstream marine research programs
5. Increase the involvement of marine research agencies in the development and operation of MRT
6. Train and employ MRT guides that seek to;
   a. Reduce the requirement for the marine researcher to act as a tour guide
   b. Reduce occupation health and safety, public liability issues through the adoption of best practice guidelines.
7. Develop best practice guidelines for MRT.
CONCLUSION

This study has uncovered key stakeholder concerns or issues that have not been previously identified in the academic literature. It also identified three likely benefits of MRT that can be considered to be a core competitive advantage for MRT when compared with many marine tourism or ecotourism ventures. A range of stakeholder views, driving forces, benefits, opportunities, and other concerns or issues regarding present and future MRT in Australia are also identified and discussed. Results indicate that it is likely that many key stakeholders would consider MRT to be a possible option to diversify, compete and possibly increase the viability of a marine tourism in Australia. Towards such a possible goal, this study has recommended a range of key strategies for any coordinated strategic plan to develop MRT in Australia. While the study was focused on Australia, study outcomes could be applied to any coordinated effort to develop MRT.

APPENDIX 1 - Stakeholder comments as to why there is a high level of private company involvement in Australian MRT.

<table>
<thead>
<tr>
<th>Key stakeholder</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private industry capacity</strong></td>
<td></td>
</tr>
<tr>
<td>Marine research tour operator</td>
<td>Private enterprises are able to access resources and make effective commercial decisions in a time frame that is commercially viable.</td>
</tr>
<tr>
<td>Marine researcher</td>
<td>Government agencies are not set up to operate tourism. Private industry is in a better position to respond to the demand for marine research tourism.</td>
</tr>
<tr>
<td>Tourism organisation</td>
<td>The ventures are run for a profit which then either goes to the company or back into more research. This is not a normal government activity.</td>
</tr>
<tr>
<td>Marine research tour operator</td>
<td>The world is increasingly commercial and everything needs to be financially sustainable. Given necessary regulation (i.e. interactions with wildlife), the private sector can achieve this if the project has long term sustainability and can achieve long term goals.</td>
</tr>
<tr>
<td>Environmental conservation organisation</td>
<td>Inherently this demonstrates that it is invariably individuals who are able to perceive a need and respond to it in terms of the overall tourism market place.</td>
</tr>
<tr>
<td>Tourism organisation</td>
<td>The need for flexibility in dealing with the tourists to ensure the tourists are happy is not normally found in government.</td>
</tr>
<tr>
<td>Environmental conservation organisation</td>
<td>Creativity on the part of marine tour operators in creating an appealing product.</td>
</tr>
<tr>
<td>Marine tour operator</td>
<td>Nature of the tourism industry - predominantly small, privately operated business operating for economic gain.</td>
</tr>
<tr>
<td>Environmental conservation organisation</td>
<td>There is less need for government researchers to use tourists when student volunteers and paid tourism staff are available.</td>
</tr>
<tr>
<td>Marine education society</td>
<td>The research tends to be outside government priorities.</td>
</tr>
<tr>
<td><strong>Government capacity</strong></td>
<td></td>
</tr>
<tr>
<td>Marine education society</td>
<td>Government agencies are constrained by red tape and bureaucracy, issues with insurances etc. that restrict their ability to work with community at this level.</td>
</tr>
<tr>
<td>Marine research tour operator</td>
<td>Because the government cannot think outside the box. Government relies on simplistic models of management and not a culture of cooperation. The idea of partners in conservation is too messy for a government body with occupational health and safety, and audit management by numbers.</td>
</tr>
<tr>
<td>Environmental conservation organisation</td>
<td>Government marine research agencies do not currently perceive a need to involve research tourists and are inherently sceptical of the value of their participation.</td>
</tr>
<tr>
<td>Environmental conservation organisation</td>
<td>Because they are economically based investment decisions which governments struggle to make in an opportunistic way.</td>
</tr>
<tr>
<td>Marine tour operator</td>
<td>Government does not like to fund organisations that can make a dollar i.e. have income, this is not a good criteria.</td>
</tr>
<tr>
<td><strong>Marine research tour operator</strong></td>
<td>The government management agencies are afraid of the unpredictability of tourists and the public in general.</td>
</tr>
<tr>
<td><strong>Environmental conservation organisation</strong></td>
<td>Government health and safety regulations.</td>
</tr>
<tr>
<td><strong>Marine research tour operator</strong></td>
<td>There are few (if any) public/government funding opportunities for such activities.</td>
</tr>
</tbody>
</table>

**Marine research quality**

| **Marine manager** | Governments will want to be associated with peer reviewed publications. Peer-reviewed publications need to be high quality. There is a perception that data collection and/or analyses done by volunteers are not as rigorous as trained technicians. |
| **Marine researcher** | Government does not support it. It is perceived as ‘soft science’. |
| **Marine researcher** | Some would likely be conducting bogus research and using the marketing tactic for profiteering. To sort the wheat from the chaff, look for: 1. Government management agency-issued research permits (with appropriate scientific and ethical evaluation and formal reporting requirements) 2. Affiliations with legitimate research institutions (e.g. University or government agency) 3. Publications. |
| **Marine education society** | A long-standing belief by many researchers that volunteers cannot be trained adequately to provide meaningful assistance, yet private operators have recognised and addressed this issue. |

**Benefits to marine research tourism operators**

| **Marine researcher** | Private motives for support such as marketing or just feel good |
| **Marine tour operator** | Great and rewarding business opportunity for individuals |
| **Marine education society** | Initial individual passionate people who have started an organisation towards achieving a goal in the area of their interest. I.e. people have started these ventures because of their passion for it, realised that the way to get assistance in funding is by having paying tourists assisting, which lifts the burdens of needing to find large grants. |
| **Tourism organisation** | Believe that research tourism is driven more by conservationists than by government, as their environmental focus is stronger and they are smart at enlisting celebrity endorsers, media and local community support. |

**Advice**

| **Environmental conservation organisation** | The potential for marine research tourism in Australia is high but underutilised. It is important to link private ventures into government agencies in a form of partnership to ensure that the information collected is validated and can be incorporated into management. The relationship may be direct or indirect through a relationship with a scientific institution/scientist that is linked into the agencies. Collecting scientific information for information sake is not appropriate in our view if better designed programs can ensure the information is used to protect and conserve marine species and habitats, which we would think most research tourists would expect they are contributing to. |

**REFERENCES**


TOWARDS A UTILITARIAN ETHIC FOR MARINE WILDLIFE TOURISM

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ABSTRACT

Ethical issues in wildlife tourism have been the subject of increasing academic interest in recent years; especially in relation to marine wildlife tourism. This paper begins by examining the issues that arise from extending moral consideration to animals through an exploration of the boundaries that are set for a being to be part of the moral community. Issues of animal suffering during wildlife tours are then explored using catch and release sport fishing and aquaria as examples. Utilitarianism (with its emphasis on consequences, welfare and ensuring the greatest good for interested parties) is then introduced and its potential to act as an ethical framework for marine wildlife tourism is considered and evaluated. The paper concludes that although utilitarianism has certain weaknesses as an ethical philosophy its requirement that the interests of both human and animals involved in wildlife tourism interactions are given equal consideration can help ensure more balanced decisions are made regarding the distribution of benefits and costs that result from marine wildlife tours.

Keywords: Wildlife Watching, Ethics, Utilitarianism

INTRODUCTION

Debate about what can be considered to be right and wrong, good and bad have challenged philosophers for millennia. Ethical issues were central to the writings of philosophers such as Confucius, Plato, Aristotle, Kant and Bentham. Within ethical studies consideration about how humans utilise and relate to the natural environment has been a central focus.

Despite the reliance of tourism on the natural environment, consideration of environmental ethics did not become a focus of academic studies until the 1990’s (Holden, 2003). These studies tended to focus on the relationship of tourism to the environment as a whole and it was not until the new millennium that tourism studies began to seriously consider the ethics of human – animal encounters generated through wildlife tourism (for example see Fennel, 2000; Hughes, 2001; Buckley, 2005). This paper aims to contribute to the debate surrounding the ethics of wildlife tourism by exploring the ethics of marine wildlife tourism through the lens of utilitarianism. The paper begins by examining the issues that arise from extending moral consideration to animals, before exploring issues of animal suffering on wildlife tours. It then introduces and evaluates the potential for utilitarianism to act as an ethical lens for marine wildlife tourism and discusses potential implications for those involved in operating, participating and managing wildlife watching tours.

THE STUDY

Extending Moral Consideration To Animals

There has been extensive academic work detailing the impacts, both positive and negative, of wildlife tourism on target species and human participants. From a human perspective Higginbottom,

Debate about whether humans have any moral obligation towards other animals has a long history. The grounds for extending moral consideration to animals have been seen as problematic and have been extensively debated. Many people have considered that animals fall outside the province of morality altogether; for example Christian doctrine has generally excluded animals from moral consideration on the grounds that they did not have souls and pronouncements within the Old Testament classified animals are mere instruments to help satisfy human interest. This position has been described by Midgley (1983) as absolute dismissal and has predominately centered on the grounds that animals were not considered to be conscious beings capable of rational actions.

Aristotle considered animals to be below humans in a natural hierarchy due to their lack of language and rationality. He reasoned that humans had no duty towards them and could therefore utilize animals in any manner (DeGrazia, 2002; Hills, 2005). Although there were some dissenting voices (notably Pythagoras) in ancient Greece, Aristotle’s views became a significant influence on western views regarding the treatment of animals (DeGrazia, 2002). Rene Descartes views on animals in the seventeenth century also considered that humans had no duties towards animals; noting that since animals did not posses language and were not rational beings, they were unable to suffer pain (Cavalieri, 2006). He described them as automata and organic machines and did not consider that humans had any duty towards them. Immanuel Kant identified rationality as the key defining factor in moral consideration. He therefore did not extend moral consideration to animals on the grounds that they were not rational beings and he thought that they could be used in any manner. Kant’s views on the importance of rationality as a defining factor are illustrated in the quote below:

‘Beings whose existence depends, not on our will, but on nature, have none the less, if they are non-rational being, only a relative value as means and are consequently called things. Rational beings, on the other hand, are called persons because their nature already marks them out as ends in themselves – that is, as something that ought not to be used merely as a means – and consequently impose to that extent a limit on all arbitrary treatment of them (and is an object of reverence).’


The position of absolute dismissal using grounds of human rationality and consciousness has been extensively criticised (Midgley, 1983; Singer, 1993; Singer 1995; Gruen, 1993; Regan, 2004). A number of philosophers have argued that by drawing the boundary of moral consideration at rationality you naturally exclude some humans. This criticism has centered on the argument that human infants and humans with severe learning difficulties cannot be considered as rational beings and are therefore excluded, if rationality is utilised as the defining characteristic, from moral consideration. Any attempt to broaden the boundaries of moral consideration to include only the human species has been criticised as speciesist (Singer, 1995). Speciesism is defined as the justification of preference for beings purely because of their membership of a particular species (usually Homo sapiens) and is considered to be similar to other forms of discrimination such as sexism and racism (Singer, 2006). In order to include infants and humans with severe learning difficulties (and avoid criticisms of speciesism) into the sphere of moral consideration its defining
characteristic has been extended to the ability of a being to experience pain. This then naturally brings all sentient beings into consideration.

Peter Singer (1993, 1995) has emphasised that sentient animals should be included in the sphere of moral consideration. He has argued that sentient animals should have their interests equally considered alongside those of human beings ‘If a being suffers, there can be no moral justification for refusing to take that suffering into consideration’ (Singer 1993: 57). The boundary for moral consideration is therefore extended beyond rationality to include all sentient beings (those able to experience pain). The foundation for this argument has been based on the work of Jeremy Bentham in the eighteenth century. Bentham famously wrote:

‘The day may come when the rest of the animal creation may acquire those rights which never could have been withheld from them but by the hands of tyranny. The French have already discovered that the blackness of the skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may one day come to be recognised that the number of legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally sufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? Is it the faculty of reason, or perhaps the faculty of discourse? But a full-grown horse or dog is beyond comparison a more rational, as well as a more conversable animal, than an infant of a day, or a week, or even a month, old. But suppose they were otherwise, what would it avail? The question is not, Can they reason? nor Can they talk? but, Can they suffer?’ (Singer, 2006: 56-57).

It is important to note that while Singer calls for equal consideration of interest, he acknowledges that this does not necessarily mean equal treatment as he identifies ‘the basic principle of equality does not require equal or identical treatment; it requires equal consideration. Equal consideration for different beings may lead to different treatment’ (Singer, 1995:2). In terms of reducing suffering he considers that the priority should be given to relieving the greater suffering (Singer, 1993:59). Sentience is therefore considered to be the boundary of moral consideration for those species that can be said to have interests. Singer (1993: 57-58) states ‘A being not capable of suffering ... there is nothing to be taken into account. This is why the limit of sentience ... is the only defensible boundary of concern for the interests of others.’

Examples Of Animal Suffering In Marine Wildlife Tourism

As stated above, debates about the ethics of the utilisation of animals as wildlife attractions has been receiving increased interest since the turn of the millennia. Two particular examples of marine wildlife products, catch and release sports fishing and aquaria, will now be examined and their potential to cause suffering to animals explored. The ethics of catch and release fishing was central to an interesting debate between Holland et al (1998 & 2000) and Fennell (2000). The debate in the Journal of Sustainable Tourism centered on whether bill fishing (fishing for species such as marlin or sailfish) can qualify as a form of ecotourism. Although the debate centers on definitional boundaries of ecotourism it also highlights interesting questions over the ethical use of wildlife by the tourist industry. The basis of Holland et al’s (1998) argument relates to catch and release fishing as a non-consumptive usage of billfish in Costa Rica which they described as qualifying as ecotourism. In his criticism of this position Fennell (2000) argued that one reason that bill fishing should not qualify as an ecotourism activity was due to the suffering experienced by the fish and the possibility of the activity to cause the death of the fish.
Interestingly Holland et al (2000) responded to this criticism by initially outlining where they saw the boundaries of moral consideration to lie ‘as in many ecological situations, the focus should be on the population as a whole rather than on individual fish’ (p. 346). However this does contradict their previous sentence which advocates ‘catch and release’ fishing with ethical treatment of the fish as a fundamental point’ (p. 346). This contradiction demonstrates some of the problems in defining ethical boundaries. If moral consideration is limited, as they suggest, to the ecosystem level then, in theory, this alleviates any requirement to treat the fish in an ethical manner as by placing the boundary of moral consideration at the ecosystem level this standpoint generally concedes that anything can be done to elements of the ecosystem as long as it does not impact on the survival of the ecosystem as a whole.

Many of those who defend hunting and fishing argue that non-consumptive wildlife tourism can also cause animals to suffer. This is a fact that cannot and should not be denied and there is a significant amount of research relating to the negative impacts of non-consumptive wildlife tourism on species. However, it can be argued that there is a defining difference between hunting and fishing and what can be defined as non-consumptive wildlife tourism and that is the intention of the action. In both hunting and fishing there is the intention (whether explicit or implicit in the motivation of the participants) to cause suffering to the targeted animal.

The growth in catch and release practices in sport fishing has been seen as a positive sign in the evolution of the activity and a sign that it is becoming more responsible in its resource management. However, there is a potential flaw in arguing that catch and release is an ethical practice as there is still intent to cause the target species to suffer. Although in order to be able to accept this there needs to be acceptance that fish are able to suffer. Research carried out by Chandroo, et al (2004) identified a level of cognitive development that they considered suggested a level of sentience in teleost fish and that data relating to anatomy and behaviour suggested that fish were able to experience pain, fear and stress and can therefore suffer. If it is accepted that fish can feel pain, fear and stress then this does raise ethical issues for catch and release sport fishing. As stated earlier the grounds for moral consideration can be based on a species ability to suffer and if it is accepted that that species can suffer then it has interests in avoiding this and is therefore worthy of moral consideration. The defining characteristic of sport fishing (whether it is catch and release or not) is that there is clear intention to catch a fish and an inescapable consequence of this intention is that this will cause suffering to the animal irrespective of whether it is released or not. In fact it can also be argued that the more stress and suffering that the fish experiences and demonstrates through fighting on the hook the greater the satisfaction for the angler.

The ethics of keeping animals on public display in zoos and aquaria has been the centre of much debate (Eaton, 2003; Jamieson, 2006; Lindburg, 2003; Regan, 2003). Jamieson (2006:133) considers that ‘there is a moral presumption against keeping wild animals in captivity.’ The central requirement of removing animals from their natural habitat and confining them in enclosures that severely restrict their liberty can cause significant suffering to those animals concerned. Through Shackley’s (1996) identification of differing degrees of confinement (see Figure 1), in which she differentiates levels of confinement from complete confinement through to complete freedom, it can be seen that key marine based attractions such as aquaria, sea life centers and dolpiniaria can be found toward the complete confinement end of the scale.
Jacques Cousteau, referring to the issue of keeping dolphins in captivity, famously stated that ‘No aquarium, no tank or marineland, however spacious it may be, can begin to duplicate the conditions of the sea. And no dolphin who inhabits one of those aquariums .. can be described as a 'normal' dolphin’ (Williams, 2001:62). Confinement has resulted in the life expectancy of marine mammals such as orcas and dolphins to be significantly shorter compared to those of the same species in the wild. Orcas survive on average for 10 years in captivity (Eaton, 2003) and Lück and Jiang (2007) noted the premature deaths of several orcas kept in captivity (whose ages ranged from 6 to 23). These figures do not compare well to those of orcas in the wild where they can have life expectancies of between 70 years for males and 100 years for females and one wild orca was found to have lived to approximately 140 years of age (Eaton, 2003).

Concerns regarding the suffering of marine animals kept in aquaria extend beyond marine mammals. Dobson (2008) noted similar problems with keeping pelagic shark species in aquaria. Whale sharks, the world’s biggest species of fish and known to migrate over thousands of miles are kept in a number of aquaria around the world, which clearly cannot meet their needs. The death of a number of these sharks in several aquaria around the world has resulted in an internet campaign against Resort Worlds at Sentosa in Singapore importing whale sharks for a new exhibition (Whalesharkpetition.com, 2009). PETA further highlight the suffering that marine animals can experience by being kept in aquaria:

‘No aquarium, however large, can simulate the ocean environment or accommodate the natural swimming patterns of fish. Bright lights and streams of gawking visitors distress fish, who cannot escape to dark corners as they would in the ocean. Regulated feeding times are totally unnatural and often make fish bloated and unhealthy. Some fish in aquaria have developed deformities, and others’ eyes have become partially dislodged resulting from the stress of swimming in small tanks.’ (PETA, 2004: 4)
An Introduction To Utilitarianism

Broadly, moral theory can be categorised into two types, non-consequentialist or deontological theories and consequentialist or teleological theories. Deontological based theories have a focus on duty to do right irrespective of consequences (Fennell, 2006) whereas teleological based theories make judgements relating to what can be considered right or wrong based on the consequences of any action that is carried out (Pettit, 1993). Utilitarianism is a teleological-based theory, developed from the writings of Jeremy Bentham and John Stuart Mill in the latter part of the eighteenth and early part of the nineteenth centuries, and has become an important mechanism for framing ethical decisions. Utilitarian reasoning has been influential in calling for women’s rights, the abolition of slavery and improvements to public health and education (Matheny, 2006).

As a consequentialist theory the central tenet of utilitarianism is that one should “act in such a way as to maximise the expected satisfaction of interests in the world, equally considered” (Matheny, 2006: 14) In essence this requires that all the interests of parties affected (both costs and benefits) by any course of action should be considered and the correct action chosen should be the one that results in the satisfaction of the greatest number of interests. As well as being consequentialist Matheny (2006) identifies three other central properties that characterises utilitarianism. Firstly utilitarianism is considered to be universalist because it considers the interests of all those (sentient beings) that are affected by an action. Secondly it is considered to be welfarist as it has a focus on maximising pleasure and minimising pain and finally it is aggregative as the correct result of any action is one that ensures the greatest good for the greatest number of those affected by an action.

Peter Singer, a leading advocate of utilitarianism, developed this theory as a way of thinking about the way humans treat animals and was widely critical of many aspects of the way humans utilise animals, including uses of factory farming and animal experimentation (see Singer, 1993 and Singer, 1995). When discussing the benefits of wildlife tourism many authors identify the consequences of wildlife tours and the costs and benefits that they can bring both to humans and the wildlife targeted by the tours. Higginbottom, et al (2003) identify six key beneficial consequences that are often used to justify the utilisation of animals by wildlife tourism

1. Direct wildlife management
2. Supporting research
3. Providing funding for conservation
4. Providing education about conservation
5. Political lobbying in support of conservation
6. Providing socio-economic incentives for conservation

The next section of this paper will explore the two previous ethical issues that have been raised in academic debates relating to marine wildlife tourism (catch and release fishing and keeping marine species in aquaria) through a utilitarian lens.

Utilitarianism And The Consequences Of Wildlife Tourism

Utilitarianism as a teleological perspective has a focus on the consequences of an action which produces the greatest amount of good. Therefore from a utilitarian perspective it may be possible to justify the suffering to an individual of a species if there are wider beneficial consequences for all those said to have ‘interests’ in the action. The beneficial consequences of wildlife tourism for humans and other animals are often put forward as justification for the activity and are in part putting forward a utilitarian defense of an activity. If there is evidence that the suffering of a few can have benefits for the many then as long as the suffering is minimized as much as possible then it is possible to justify the activity. However, it is an essential part of utilitarianism that any claim to
benefits is subjected to close critical examination in order to check that such claims are valid.

The major consequential benefits put forward to justify catch and release fishing include direct benefits to humans through enjoyment of the activity and through the creation of economic benefits and benefits to the species through creating economic value and therefore incentives for conservation and through contributing to scientific research via the tagging of caught fish. These can be seen in the Holland et al (2000) justification of catch and release bill fishing. As part of the activity in Costa Rica fish are released with a tag to enable scientific research to be carried out on the movements of billfish. This could be considered to be a beneficial consequence that could be part of a utilitarian justification for the activity. However, Fennell (2000) questions that only 13 of 1500 tagged fish were re-caught and surmised that many of the other fish did not survive their catch and release encounter; an accusation refuted by Holland et al (2000) who stated that the habitat distribution of billfish made it unlikely for them to be re-caught. This does raise an interesting question about using the tagging of released fish as an ethical justification for sport fishing. Utilitarianism requires evidence that an action results in the greater good for all those with interests in the action. If only 13 out of 1500 billfish were re-caught this raises questions about whether the tagging of billfish by recreational anglers in Costa Rica is able to generate good quality data that can be used to help in the conservation and management of the wider species (i.e. the greater good).

This is not to say that all catch and release sport fishing that involves tagging is potentially invalid as a consequentialist defense for the activity. For example the UK shark tagging programme has been running since 2004 and involves a number of shark-fishing tour operators from twenty seven ports around the UK. These operators have been trained to tag sharks and record data which is now generating important data relating to the movements of a number of endangered shark species such as the Blue shark (Prionace glauca) and Tope (Galeorhinus galeus). This data has then been used to help influence conservation and sustainable fisheries policies.

Zoos and aquaria are often justified on benefits that they can bring to humans, through economic gains and enjoyment generated through the visit. Education of visitors about the animals that they see and the environment in general is also used as an important justification for the existence of zoos. Debates about the educational benefits of zoos / aquaria are extensive between those who argue that education provides a positive consequence for both visitors and species and those who argue that zoos / aquaria provide nothing more than entertainment with little or no educational benefits. The educational aspects of zoos / aquaria have played a central role in the redefining of their role in the late twentieth century from sites of curiosity and entertainment to sites of conservation and research. However, Lück and Jiang (2007) summarise the problems relating to the education provided at marine parks. They highlight research that questions the quality of educational content and the provision of irresponsible portrayals of human – animal relationships (e.g. trainers riding and kissing orcas etc.). One key aspect of any consequential benefit of education provided at zoos is the impact that such messages have on visitor beliefs and behaviour post visit. Research carried out by Smith, et al (2008) illustrated that information provided by zoos on actions to help the conservation of birds had little lasting impact in terms of effecting changes in visitor behaviour. From a utilitarian perspective more research clearly needs to be carried out into the impact and effectiveness of educational content at zoos and aquaria to evaluate its ability to affect positive attitudinal and behavioural changes in visitors. If education is to be used as a justification for keeping animals in captivity then it must be proven that it has beneficial consequences beyond the immediate experience.

These examples of claims to ethical practice with differing outcomes raises questions regarding at what scale should ethical judgements made? Where should the line be drawn regarding decisions about what can be considered to be an ethical activity? Should it be drawn at the activity level i.e. should all catch and release fishing or all zoos and aquaria be considered unethical due to the
suffering caused to the animals and that the consequences cannot be reasonably shown to benefit the greater good or should it be drawn at a more individual level which would allow for the examination of specific locations / operations. Utilitarianism can be divided between act-utilitarianism which has its focus on individual actions and rule-utilitarianism which aggregates individual actions into a set of rules. Rule-utilitarianism considers the right thing to do is based on the adherence to rules that have shown that they generate the greatest good (Fennell, 2006). Rule-utilitarianism potentially places greater restrictions on what can be viewed as ethical compared to act-utilitarianism. Act-utilitarianism would demand that ethical judgements would be made at the individual level, i.e. individual operator, tourist or management authority. Act-utilitarianism can help differentiate between activities and operators that demonstrate areas of proven good practice from those that do not provide evidence of the beneficial consequences of their actions. Alternatively rule-utilitarianism can provide a set of proven rules that wildlife tourism activities must adhere to be considered ethical. Although generating such rules would be potentially problematic especially in terms of relativistic issues, it would allow for easier comparisons across locations in which similar activities take place.

A further important aspect that needs to be given further consideration is the concept of interests. Utilitarianism requires the interests of all those affected by an action (both human and non-human) to be considered equally. As stated previously equal consideration of interests does not necessarily mean equal treatment and Singer (1995) allows for beings with a higher capacity to suffer to be treated differently to those with a lower capacity to suffer. This could mean that within wildlife tourism human interests which tend to centre on aspects of enjoyment and economic gains could be prioritised over issues of species conservation and animal suffering. However, Midgley (1983) differentiates interests between ‘trivial’ and ‘urgent.’ Trivial interests can be considered to be interests that may be beneficial to sentient beings but are not necessary for the avoidance of pain or long term survival. Urgent interests may be considered to be those which relate to the avoidance of pain or suffering by sentient beings. Midgley (1983) highlights ‘however far down the queue animals may be placed, it is still possible in principle for their urgent needs to take precedent over people’s trivial ones’ (p.17). This consideration can then help manage the problem found in many cases of wildlife tourism where humans enjoy the experience and wildlife suffer it.

The demands made by utilitarianism that the interests of every sentient being affected by the outcome of an action be considered are the theories biggest weakness. Some have criticised that the complexities make any such calculation impossible. For example Regan (2003) identifies the wide ranging interests that would have to be examined in any assessment of a zoo (from those who work at the zoo, to those that run businesses that benefits from the existence of the zoo, to those animals held in captivity to those animals of the same species living in the wild (an added complexity is how do you calculate the interests of animals)). He concludes that any such project would be practically impossible. However, Matheny (2006) believes that such calculations can be achieved with common sense and wise decision making. Although calculations may be difficult and not as straight forward as Matheny suggests any wildlife tourism activity that purports beneficial consequences to either humans or the target species should be able to provide evidence that fully justifies such claims and should also be able to provide evidence that benefits and costs associated with the activity have been equally considered across all those said to have interests in the activity.

CONCLUSION

The ethics of human – animal encounters during wildlife tours has seen a growth in interest since the new millennia. Although extending moral consideration to animals has been problematic for some, drawing the boundary at sentience (the ability to feel pain) raises some interesting challenges for the wildlife tourism industry. It is clear that humans can benefit from wildlife tourism through the enjoyment of the experience while animals can suffer stress, injury and perhaps death from the
same experience. However, wildlife tourism can also bring benefits to target species through research and improved conservation strategies. Wildlife tourists, tourism operators and managers need to be able to evaluate activities and balance the cost and benefits of all those who are said to have interests in the activity (both human and animal). Utilitarianism as a teleological-based theory provides a lens through which the consequences of any action in terms of costs and benefits can be evaluated and decisions made regarding the action which will generate the greatest amount of good for the most number of sentient beings with an interest in the activity. However, utilitarianism does not take claims at face value but requires evidence that benefits are being maximised and costs minimised. It also allows for differing interests (both trivial and urgent) to be considered.

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OPTIMIZATION OF MARICULTURE SITE IN THE TOURISM AREA OF SERIBU ISLANDS, JAVA SEA, INDONESIA

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ABSTRACT

Seribu Islands is an archipelago, consist of 105 islands and located in the Java Sea about 50 km on the northwest of capital city of Indonesia, Jakarta. The islands and waters surrounding them have been occupied not only as habitat, tourism, fishing and mariculture, but also for transportation, waste disposal, mining, energy production and environmental protection area. This group of islands has been used for tourism area for ages since it offers a heaven away from the bustle of city life and golden beaches fringed with coconut palms. The surrounding waters are a paradise for skin divers. They are filled with a myriad of tropical fish, which live among the multicolored corals. Only fourteen islands are inhabited and maricultures are mostly located close to those islands. Mariculture has become an important component for the fisheries in the area since its their productions are highly valued and command good prices on the export market. Potential conflict between tourism and mariculture industry in Seribu Islands has became an essential issue in the development planning of the area. With the potential of a release of property to the civilian sector, appropriate decisions will have to be made to avoid any conflicts. A developed decision support system (DSS) for suitable and sustainable mariculture site selection is reviewed in this paper. The DSS are developed based on optimization of physical, chemical and socio-economical parameters (incl. coastal use such as tourism area) to determine suitable and sustainable location for mariculture site.

Keywords: mariculture, suitability, sustainability, optimization, Seribu Islands

INTRODUCTION

Mariculture or marine aquaculture is a form of bioproduction that involves the propagation, cultivation and marketing of marine aquatic animals and plants in a human controlled environment. It has been intensified over the last two-decades in Indonesia, as well as many other countries in the world since it not only provide healthy and appetizing food, but also has created essential employment opportunities. The development of mariculture may also be initiated by very high demand of fish products in the worldwide market. There is a fact that the world’s population is increasing faster than the total food fish supply. The statistic of fisheries reveals a decrease in capture-fisheries which was to some extent compensated by an increase in aquaculture products (FAO, 2003). As inland aquaculture is limited by the availability of adequate space, offshore aquaculture, or mariculture, had been introduced as an alternative to aquaculture by utilization of coastal and offshore areas (Windupranata, 2007).
However, this development has also augmented environmental and social-economic concerns. Intensive fish farming releases considerable amounts of nutrient waste in dissolved and particulate form into the environment through feed excess, soluble fish excretion and faeces production. Another problem may be the conflict with other coastal uses such as industry, tourism, transportation, fishery and nature conservation. Consequently, appropriate coastal zone management is a very important point to be taken into account. It is recommended that mariculture sites are located in some distance from the other coastal uses or from other mariculture sites to avoid conflicts and mutual pollution. Guidelines on distance restrictions between farms vary tremendously between countries, environments, farmed species and systems used.

It is important to optimize the mariculture site in the coastal area to avoid any environmental and social-economic impact. Hence, before the implementation of fish farming mariculture activities, appropriate site conditions for culturing the species should be selected in order to minimize environmental and social-economic impacts arising from the farming activities (sustainability) as well as to guarantee adequate conditions from the operational point of view (suitability). A decision support system (DSS) for suitable and sustainable mariculture site selection has been developed for Seribu Islands area. The DSS are developed based on optimization of physical, chemical and socio-economical parameters (incl. coastal use such as tourism area) to determine suitable and sustainable location for mariculture site.

SERIBU ISLANDS AS A TOURISM AREA AND AS A POTENTIAL SITE FOR MARICULTURE

Seribu Islands are located in the Southwestern part of the Java Sea, Indonesia (Figure 1). They are under administration of Kabupaten Kepulauan Seribu (Seribu Islands District) of Jakarta Province. Seribu Islands means a “Thousand Islands”, however, the archipelago consists “only” of 110 small islands, with only 11 islands populated by a total number of inhabitants in of about 18,000 (BPS, 2000). Fifty islands have area of less than 0.05 km² and only 24 islands have area of more than 0.1 km². Total land area of the islands is about 8.7 km².

The islands can be reach in about 1 - 2 hours from Jakarta by boat, ferry or by chartered board. Forty-four islands of the group are located in the national conservation zone (Marine National Park). All the resort islands in the Marine National Park are open for public. Visitors can enjoy various exciting tourist facilities, such as exclusive hotels and restaurants, underwater aquarium (on Putri Island), tennis courts, golf courses (on Bira Besar Island), jet skis, banana boats, swimming pools, and many others. Strolling on the beach at night, visitors can also watch nesting behaviours of the Hawksbill Turtle (Eretmochelys imbricata), giant turtles with beak-like mouths, which are listed in the Convention of International Trade in Endangered Species (CITES). The surrounding reefs are home to a wide variety of fishes, making Seribu Islands an ideal spot for diving, snorkeling and fishing. Some of the islands in this group developed for tourism are Bidadari, Ayer, Sepa, Kelapa, Pelangi, Bira, Pantara, Kul-kul and Putri Island. There are also cabins for tourists, besides golden beaches fringed with coconut palms. The surrounding waters are a paradise for skin divers. They are filled with a myriad of tropical fish, which live among the multicolored corals.
Seribu Islands has been also recognized as a potential area for mariculture site. At Panggang Island, there are about 20 seaweeds culture sites and can produce up to 2000 kg seaweeds each culture period (about 4 months). It is an attractive industry for the local fisherman since captured fish are no longer abundant and mariculture is becoming favourite option to increase their income. Increasing number of fish cages are also found close to Panggang, Harapan and Kelapa Island, with total production of about 5000 kg per year.

Small and outer islands are becoming important concern of Indonesian Government since they have very rich natural resources and play important role in national and international politics, such as maritime international boundaries, etc. However those islands are also in concern due to
vulnerability to the sea level rise and climate change. According to Dahuri (1999), two main industries can be implemented in the small islands, being tourism and mariculture industry. Both of these industries have been implemented in the small islands of Seribu Islands. However it is important to manage both industries to live in harmony.

OPTIMIZATION OF MARICULTURE SITE IN THE TOURISM AREA OF SERIBU ISLANDS

Conflict of Mariculture and Tourism Site

As Seribu Islands has ambitions to restore their natural resources as well as to improve their development policy, this means necessity to implement a proper coastal and marine spatial planning. No doubt that the most important sectors for economic development are and will be tourism, services, fisheries and mariculture. This means increased demand for sea food, greater pressure on the environment, more pollution and consequently more conflicts among various coastal users.

Mariculture maybe allowed on a coastal area where there is no significant conflict. The siting of mariculture facilities may be more difficult on an access to commercial activities, recreation, crucial fish and wildlife habitat, tidelands designated for log transfer or storage, or mineral transfer. The coastal area will be available for mariculture if the land manager determines that it is possible to site, design, and operate the two or more uses compatibly in the area; or there is no feasible or prudent alternative for mariculture while such an alternative exists for the competing use (Alaska Department of Natural Resources, 1988). Mariculture will not be allowed to foreclose access to other coastal use (incl. tourism site) unless feasible or prudent alternative access exists. The siting and spacing of mariculture operations should minimize the risk of disease transmission, competition with wild stocks of fish and shellfish, and water quality degradation through separation between coastal uses.

Conflicts between tourism and mariculture are expected to be very pronounced as the tourists are extremely sensitive to environmental problems that may be generated by overfeeding, noise, bad smell and an aesthetic problem (visual pollution) in the cases when mariculture projects are badly managed and wrongly sited. It must be made very clear at the very early stage that a comprehensive coastal zone plans must be worked out in order to define areas for the various economic activities, including mariculture itself. Development of such a mariculture concept may provide a multifunctional linkage with tourism and create possibilities of implementing mariculture-based tourism. This mariculture-based tourism has been implemented in Seribu Islands as can be seen in Figure 2.
Figure 2. Tourism Activity on the Mariculture Site in Seribu Islands

The study of mariculture site optimization in the tourism area of Seribu Islands was referred to Windupranata (2007) and Pérez et al. (2003). Windupranata (2007) focuses on the development of a Decision Support System (DSS) as a tool for the decision maker in coastal zone management and mariculture for the appropriate selection of mariculture site location. Extensive use of GIS as part of the Decision Support System was deployed in this study. The DSS is based on physical, chemical and sediment criteria as well as on data of conflicting coastal use. The GIS analysis results in a map indicating the suitable areas for the improved method of offshore cage mariculture. Pérez et al. (2003) has developed a GIS-based model to integrate and develop marine fish cages within a tourism area. In this study, decision criteria were grouped into three sub models (distance to beaches, nautical sports and view shed), which were combined to generate a final output showing the most suitable areas for cage culture development in coexistence with tourism.

Process of Mariculture Site Selection

Site selection is an important factor of mariculture business to avoid undesirable impact on the environment, ensure the profitability of the operation as well as to avoid competing demands for coastal space. Mariculture cage installations have to fulfill some requirements in order to maintain a good compatibility with the natural environment and must take the physicochemical characteristics of the environment into consideration. Table 1 present required parameters and their classification for mariculture site. The parameters are classified into four classes for mariculture site, being unacceptable, poor, fair and good.

Assessment of a single mariculture site location in a simple case can be done by direct observation of physicochemical, sediment and social characteristic of the coastal area in question. When required data are available and critical values are known, the location can be classified as suitable for farming or not.

Recently, mariculture activities are no longer subjects of concern of only fish farmers and managers; it involves all other users of the coastal zone. As a result, mariculture can no longer be considered an isolated activity, but should be considered in the general context of Integrated Coastal Zone Management (ICZM). There are also needs for governmental agencies, which are involved in mariculture management, to perform spatial analysis in an area envisaged for mariculture development in order to assess the potential environmental, economic and social impacts of the
future mariculture activities. The decision-making process to manage the development of mariculture should be supported by an expert system in order to provide proper decisions.

Table 1. Parameters and their classification for mariculture site selection (Modified from Windupranata, 2007 and FAO, 1989)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unacceptable</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Minimum Depth at Spring Tide (m)</td>
<td>&lt;3</td>
<td>3-5 or &gt;20</td>
<td>15-20</td>
</tr>
<tr>
<td>Maximum Current Velocity (m/s)</td>
<td>&lt;0.05 or &gt;1</td>
<td>0.05-0.2</td>
<td>0.5-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical</th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Wave Height (m)</td>
<td>&gt;1.5</td>
<td>1-1.5</td>
<td>0.6-1</td>
</tr>
<tr>
<td>Water Temperature (°C)</td>
<td>&lt;15 or &gt;35</td>
<td>15-20 or 33-35</td>
<td>20-27 or 31-33</td>
</tr>
<tr>
<td>Salinity (psu)</td>
<td>&lt;10</td>
<td>10-15</td>
<td>15-25 or &gt;35</td>
</tr>
<tr>
<td>Bottom sediment type</td>
<td>-</td>
<td>Mud</td>
<td>Coral</td>
</tr>
<tr>
<td>Dissolved Oxygen (ppm)</td>
<td>&lt;4</td>
<td>-</td>
<td>4-5</td>
</tr>
<tr>
<td>Ammonia (ppm)</td>
<td>&gt;0.5</td>
<td>-</td>
<td>≤0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate (mg/ltr)</td>
<td>&gt;200</td>
<td>-</td>
</tr>
<tr>
<td>Phosphate (mg/ltr)</td>
<td>&gt;70</td>
<td>-</td>
</tr>
<tr>
<td>Water pH</td>
<td>&lt;3 or &gt;13</td>
<td>3.7-8 or 8.6-13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coastal Uses</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to harbour (km)</td>
<td>&lt;0.2</td>
<td>-</td>
<td>0.2-0.5</td>
</tr>
<tr>
<td>Distance to navigation line (km)</td>
<td>&lt;0.2</td>
<td>-</td>
<td>0.2-0.5</td>
</tr>
<tr>
<td>Distance to industrial area (km)</td>
<td>&lt;1</td>
<td>1-2</td>
<td>2-5</td>
</tr>
<tr>
<td>Distance to tourism area</td>
<td>&lt;0.5</td>
<td>-</td>
<td>0.5-1.5</td>
</tr>
</tbody>
</table>

These conditions have led to augmented interest in the development of an interactive tool for evaluation, presentation and communication of all site selection parameters. This tool includes Geographical Information Systems (GIS) to store spatial information in a way that can be easily accessed, processed, displayed and presented. GIS-based Decision Support System (DSS) provide scientific advice in a form that can readily be understood and evaluated by managers and stakeholders without profound scientific skills. Consequently there is interest in finding simplified ways to represent data in a way that can easily be grasped but which preserves the original information without bias.

In general, development of GIS applied in the Decision Support System includes seven phases, which are (1) identification of requirements, (2) formulation of specifications, (3) development of analytical framework, (4) locating data sources, (5) organization and manipulation of input data, (6) data analysis and verification, and finally (7) evaluation of output [Nath et al., 2000]. Iteration within the overall process, particularly among the first four phases may be necessary.

One of important phase of the DSS development is development of analytical framework. This phase includes reclassification, weighting and overlaying process. An example of a reclassification process is presented in Figure 3. In this figure a bathymetry map was reclassified based on scoring of suitability as shown in Table 1. Since the parameters used in the development of DSS for site selection mariculture do not have the same level of importance, the weighted overlay method is chosen. In this method, each selected parameter is assigned a weight that is proportional to its importance.
Figure 3. Reclassification of minimum water depth (Windupranata, 2007)

Result of the DSS for mariculture site selection in the Seribu Islands is presented in Figure 4. Green areas indicate the most suitable place for mariculture site, following by yellow, orange and red areas as forbidden area to install mariculture site facilities. The results are mostly driven by physical parameters (depth, currents, waves, etc) since most of chemical parameters in the area are suitable for the mariculture site. However the tourism sites on some islands are enhanced the number of unacceptable location, since the mariculture site cannot be placed in the area within 0.5 km from the tourism site (see again Table 1)

Figure 4. Mariculture Site Suitability Map (Windupranata, 2007)

CONCLUSIONS

Mariculture site selection generally is based on two criteria, suitability and sustainability. Suitability is related to the required proper conditions of the location that support the living environment of the fish in the farm. Sustainability is associated to the continuation of the farming itself due to environmental impact of the fish farm.
Conflict between tourism and mariculture in the Seribu Islands need to be avoided, since both of these industries are developed in the area. It need to be understood that tourists are extremely sensitive to environmental problems that may be generated by overfeeding, noise, bad smell and an aesthetic problem (visual pollution) in the cases when mariculture projects are badly managed and wrongly sited. Mariculture site selection is an important factor of mariculture business to avoid undesirable impact on the environment, ensure the profitability of the operation as well as to avoid competing demands for coastal space. Mariculture cage installations have to fulfill some requirements in order to maintain a good compatibility with the natural environment.

Mariculture and tourism activities has to be considered in the general context of Integrated Coastal Zone Management. There are also needs for governmental agencies, which are involved in mariculture and tourism management, to perform spatial analysis in an area envisaged for mariculture as well as tourism development in order to assess the potential environmental, economic, social impacts and conflict between them and other coastal uses in the future. The decision-making process to manage the development of mariculture should be supported by an expert system in order to provide proper decisions.

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Windupranata, W., (2007), Development of a Decision Support System for Suitability Assessment of Mariculture Site Selection, Dissertation, Mathematic and Natural Science Faculty, Kiel University, Germany.
VALUE ORIENTATIONS TOWARD CORAL REEFS IN RECREATION AND TOURISM SETTINGS: A CONCEPTUAL AND MEASUREMENT APPROACH

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ABSTRACT

Research has measured public beliefs about general objects such as wildlife and forests to classify people along protection-use or biocentric-anthropocentric value orientation continuums. Little research, however, has examined value orientations toward coral reefs in recreation and tourism settings. This article tests the validity and reliability of a scale for measuring value orientations toward reefs, segments recreationists into groups based on their orientations, and examines demographic and activity differences among these groups. Data were obtained from 2,821 surveys of users at Pupukea Marine Life Conservation District, Waikiki Diamond Head Shoreline Fisheries Management Area, and Kailua Beach Park on O`ahu, Hawai`i. Belief statements about reefs were combined to measure value orientations (e.g., "coral reefs should have rights similar to rights of humans"). On average across sites, users agreed with protectionist and disagreed with use oriented beliefs. Reliability and confirmatory factor analyses showed that except for one statement ("humans should manage coral reef areas so humans benefit"), the scale provided a valid and reliable measure of value orientations toward reefs. Cluster analysis segmented respondents into three orientation groups (strong protection, moderate protection, mixed protection-use). The largest number of users had strong protectionist orientations and there was no group possessing only anthropocentric or use orientations toward reefs. There were no relationships between value orientations and site, age, and location of residence. Conversely, females, snorkelers, swimmers, and sunbathers held stronger protectionist orientations toward reefs, whereas divers and anglers were more likely to have mixed protection-use or moderate protection orientations. Research and management implications are discussed.

Keywords: coastal recreation and tourism, coral reefs, demographics, validity and reliability, value orientations

INTRODUCTION

Coral reefs are one of the most ecologically diverse, valuable, and productive systems on this planet, and the global decline in health of these reefs is an important conservation concern (Bellwood, Hughes, Folke, & Nystrom, 2004; Dearden, Bennett, & Rollins, 2006, 2007; Friedlander et al., 2005). Threats to coral reefs and reef species include climate change and coral bleaching, disease, coastal development and runoff, pollution, trade in coral and live reef species, ship groundings and anchor damage, overharvesting, marine debris and trash, aquatic invasive species, and oil and gas exploration (Bellwood et al., 2004; Briggs, 2005; Friedlander et al., 2005; Hodgson, 2000). Underlying many of these threats is the reality that immediate returns from destructive practices often outweigh potential long term benefits of coral reef conservation and protection (Dearden et al., 2006).
A number of studies have demonstrated that recreation and tourism activities such as diving and snorkeling are another threat to coral reefs because touching and standing on reefs can cause damage such as coral breakage, abrasion, and mortality (e.g., Barker & Roberts, 2004; Hawkins et al., 1999; Rodgers & Cox, 2003; Rouphael & Hanafy, 2007; Rouphael & Inglis, 2002; Tratalos & Austin, 2001). Many of these studies highlighted the need for understanding why some recreationists and tourists engage in these deprecatory behaviors, and whether these individuals care about the fragility of reefs and other aspects of the marine environment. User awareness and behavior in recreation and tourism settings can be influenced by evaluations of specific conditions and experiences, which are shaped by value orientations, norms, attitudes, and other cognitions (Needham & Rollins, 2009). This article tests the validity and reliability of a scale for measuring value orientations toward coral reefs in recreation and tourism areas, segments individuals into groups based on their orientations, and examines demographic differences among these groups. It is important to understand and measure cognitions such as value orientations because they can influence behavior such as coral trampling and predict support of and receptivity toward management responses for mitigating impacts.

Conceptual Background

Recreationists and tourists are heterogeneous, exhibiting a range of skills, attitudes, and behaviors (Needham, Vaske, Donnelly, & Manfredo, 2007). Given this diversity, researchers have emphasized the importance of segmenting individuals into meaningful homogeneous subgroups to improve understanding of behavior and responses to natural resources (Bright, Manfredo, & Fulton, 2000; Vaske, Beaman, Stanley, & Grenier, 1996). Studies, for example, have differentiated between consumptive and nonconsumptive users (e.g., anglers versus wildlife viewers; Duffus & Dearden, 1990), experienced and less experienced users (Cole & Scott, 1999; Needham et al., 2007), and different demographic groups (e.g., male versus female, urban versus rural residency; Cordell, Bergstrom, Betz, & Green, 2004; Dougherty, Fulton, & Anderson, 2003; Zinn & Pierce, 2002). Studies have also segmented the public based on competing views among interest groups and citizen advocacy organizations (Needham & Rollins, 2005).

Participants in recreation and tourism activities have also been segmented according to their value orientations toward general objects or natural resources (Bright et al., 2000; Vaske & Needham, 2007). Value orientations (Kluckholn, 1951) refer to general classes of objects (e.g., wildlife, forests, coral reefs) and are revealed through the pattern, direction, and intensity of basic beliefs (Fulton, Manfredo, & Lipscomb, 1996; Vaske & Donnelly, 1999). Value orientations toward wildlife, for example, have been measured by asking individuals how strongly they identify with biocentric or protectionist belief statements (e.g., “wildlife should have equal rights as humans”) and utilitarian or use beliefs about wildlife (e.g., “wildlife should be used by humans to add to the quality of human life”). Patterns in these beliefs have consistently factored into bipolar value orientation dimensions such as the protection-use continuum (Bright et al., 2000; Dougherty et al., 2003; Fulton et al., 1996; Vaske & Needham, 2007) and biocentric-anthropocentric continuum (Shindler, List, & Steel, 1993; Steel, List, & Shindler, 1994; Vaske & Donnelly, 1999). An anthropocentric or use orientation reflects human-centered or utilitarian views of the nonhuman world (Eckersley, 1992). This approach assumes that providing for human use and benefit is the primary goal of natural resource allocation and management regardless of whether uses are for commodity (e.g., timber), aesthetic, or physical (e.g., recreation) benefits. Natural resources are seen as a set of materials to be used by humans and there is no notion that nonhuman aspects of nature are valuable in their own right or for their own sake (Scherer & Attig, 1983). An anthropocentric or use orientation emphasizes instrumental value of natural resources for humans rather than any inherent worth of these resources (Vaske, Donnelly, Williams, & Jonker, 2001).
A biocentric or protectionist value orientation is a more nature-centered approach. The value of ecosystems, species, and natural resources is elevated to a more prominent level (Eckersley, 1992). Human needs and desires are still important, but are viewed within a larger perspective. This approach assumes that environmental and natural resource objects have instrumental and inherent worth, and that human uses and benefits are not always the most important uses of these resources. In a natural resource management context, these inherent values are to be respected and preserved even if they conflict with human-centered values (Thompson & Barton, 1994; Vaske et al., 2001). Protectionist (i.e., biocentric) and use (i.e., anthropocentric) orientations are not mutually exclusive; they can be arrayed along a continuum with protectionist orientations at one end and use orientations at the other end; the midpoint often represents a mix of these two extremes (Shindler et al., 1993; Vaske & Donnelly, 1999). Users arranged along the continuum can then be segmented into more meaningful homogeneous subgroups (Bright et al., 2000).

Value orientations can predict higher-order cognitions such as attitudes and behavioral intentions (Fulton et al., 1996; Vaske & Donnelly, 1999). Although value orientations are related to these other cognitions, they are conceptually different. Like value orientations, for example, attitudes are also evaluations of an object. Attitudes, however, differ from value orientations in at least three ways. First, attitudes focus on positive or negative evaluations (i.e., affect or emotions), whereas value orientations are derived from basic beliefs (i.e., cognitions or thoughts). Second, an individual may hold thousands of attitudes, whereas value orientations are limited in number (e.g., protection-use, biocentric-anthropocentric). Third, attitudes have a more focused object than value orientations. If the object, for example, is “feeling toward bears,” the evaluation is an attitude. By comparison, the object of a value orientation is more general such as all wildlife in general (Eagly & Chaiken, 1993; Fishbein & Ajzen, 1975; Vaske & Needham, 2007).

Several studies have examined public value orientations toward forests (Steel et al., 1994; Vaske & Donnelly, 1999), wildlife (DeRuiter & Donnelly, 2002; Dougherty et al., 2003; Kellert, 1987; Manfredo, Pierce, Fulton, Pate, & Gill, 1999; Manfredo, Zinn, Sikorowski, & Jones, 1998; Vaske & Needham, 2007; Zinn, Manfredo, & Barro, 2002; Zinn & Pierce, 2002), and more general environmental issues (Bright, Barro, & Burtz, 2002; Dunlap & Van Liere, 1978; Kellert, 1993). Some of these studies have shown relationships between demographic characteristics and value orientations. Individuals with a biocentric or protection orientation, for example, are often more likely to be females, younger, and live in more urban and developed areas (Manfredo, Teel, & Bright, 2003; Vaske et al., 2001). Little research, however, has examined recreationist and tourist value orientations toward coastal resources such as coral reefs. This article addresses this knowledge gap because value orientations are useful for: (a) identifying diverse groups with different preferences and behaviors, (b) predicting attitudes and behavior associated with natural resource conservation and management, and (c) anticipating receptivity to and polarization over strategies that are designed to reduce or prevent damage to natural resources such as coral reefs (see Manfredo, Teel, & Bright, 2004; Needham & Rollins, 2009 for reviews). Measuring value orientations toward coral reefs in recreation and tourism settings may provide an understanding of cognitive reasons why some recreationists and tourists engage in deprecative behaviors such as handling or standing on coral. This information may be able to assist managers in identifying target groups for information and education campaigns aimed at minimizing resource impacts.

Research Objectives

This article has two primary objectives. First, it tests the validity and reliability of a scale that can be used in onsite surveys for measuring value orientations toward coral reefs in recreation and tourism settings. Second, it segments users into subgroups based on these value orientations and then examines demographic and activity differences among these groups to help identify characteristics of groups who hold different value orientations.
THE STUDY

Study Areas

Data were obtained from summer users visiting one of three coastal sites on the island of O‘ahu, Hawai‘i: (a) Pupukea Marine Life Conservation District (MLCD), (b) Waikiki Diamond Head Shoreline Fisheries Management Area (FMA), and (c) Kailua Beach Park. Pupukea MLCD is on the north shore of the island and includes three bays: Waimea Bay, Three Tables, and Shark’s Cove. Popular summer activities at this MLCD include swimming, beach walking, snorkeling, and diving. Facilities such as restrooms, showers, parking, and trash cans are available. Waikiki Diamond Head Shoreline Fisheries FMA is on the leeward south coast of the island and extends from the Waikiki War Memorial Natatorium to Diamond Head Lighthouse. The popular areas for summer activities such as sunbathing, swimming, and surfing are Sans Souci / Kaimana Beach and Diamond Head Beach Park. Restrooms, showers, parking, picnic tables, and benches are located in this FMA. Kailua Beach Park is on the windward northeast coast of O‘ahu and is renowned for its long sandy beach and turquoise waters. Facilities include showers, restrooms, picnic tables, trash cans, and several parking areas. Summer activities at Kailua Beach Park include sunbathing, swimming, beach walking, kayaking, kite surfing, windsurfing, and fishing. Coral reefs are present at all three sites, although they are slightly more prevalent and popular at Pupukea MLCD (Friedlander et al., 2005; Needham et al., 2008).

Data Collection

Surveys were administered onsite to individuals at these three sites during two weeks in July 2007 and two weeks in August 2007. To increase probability of achieving a representative sample of summer users, sampling at the sites was stratified and alternated so that surveys were administered at each site at least once for each day of the week (Monday to Sunday) and at least once for each of three time periods each day (8:00 AM to 10:30 AM, 11:30 AM to 2:00 PM, 3:00 PM to 5:30 PM). Given that these sites are relatively popular, it was not feasible or necessary to survey every person encountered during the survey periods. Individuals were selected through a systematic random sampling procedure to reduce selection bias (e.g., one random individual selected from every 5th or 10th selected group depending on the size and popularity of the site; Vaske, 2008). In total, 3,227 summer visitors were approached and 2,821 of these individuals completed surveys onsite (overall response rate = 87%). This sample yields a 95% confidence interval with a margin of error of ± 1.8%, which is better than the ± 5.0% convention for most social sciences (Vaske, 2008). The sample size was 975 at Pupukea MLCD (93% response), 925 at Waikiki Diamond Head Shoreline FMA (84% response), and 921 at Kailua Beach Park (85% response).

Analysis Variables

An individual’s value orientation toward coral reefs was constructed from four survey variables designed to measure protectionist (i.e., biocentric) basic beliefs and four variables measuring use (i.e., anthropocentric) beliefs. Respondents indicated their level of agreement with the following protectionist statements: (a) "coral reef areas should be protected for their own sake rather than to simply meet the needs of humans," (b) "coral reef areas should have rights similar to the rights of humans," (c) "recreational use of coral reef areas should not be allowed if it damages these areas," and (d) "coral reef areas have value whether humans are present or not." The four variables measuring use (i.e., anthropocentric) basic beliefs were: (a) "humans should manage coral reef areas so that humans benefit," (b) "the needs of humans are more important than coral reef areas," (c) "recreational use of coral reef areas is more important than protecting the species that live there," and (d) "the primary value or coral reef areas is to provide for humans." Variables were coded on 5-
point scales of -2 "strongly disagree" to +2 "strongly agree" and with the exception of context (i.e., coral reefs), are identical to those used in studies of value orientations toward wildlife and forests (e.g., Fulton et al., 1996; Vaske & Donnelly, 1999).

Three demographic characteristics and two activity related variables were also measured. The two activity variables were site (Pupukea MLCD, Waikiki Diamond Head Shoreline FMA, Kailua Beach Park) and the main activity in which users participated at the site (e.g., swimming / sunbathing, snorkeling, scuba diving, fishing). The three demographic variables were sex (male, female), age, and location of residence.

Data Analysis

Measurement reliability or internal consistency of the eight belief statements measuring value orientations toward reefs was examined using Cronbach alpha reliability coefficients. An alpha coefficient greater than or equal to .65 indicates that variables are measuring the same concept and justifies combining them in further analyses (Cortina, 1993, Nunnally & Bernstein, 1994). Construct validity of these belief statements measuring the two latent dimensions / factors of value orientations toward reefs (i.e., protection, use) was then assessed using confirmatory factor analysis (CFA), which tested the extent that variables measuring each of these two first-order factors provided a good fit. EQS 6.1 software and Satorra-Bentler robust estimation to correct for multivariate non-normality were used for the CFA because data skewness and kurtosis indicated violations of the normal distribution assumption (Byrne, 1994; Chou & Bentler, 1995). Robust corrected comparative fit index (CFI*), non-normed fit index (NNFI*), and root mean square error of approximation (RMSEA*) assessed model fit (* denotes robust corrected estimation and indices). CFI* and NNFI* values greater than or equal to .90 and RMSEA* values less than or equal to .08 suggest acceptable CFA model fit (Browne & Cudeck, 1993).

K-means cluster analysis was then performed on the belief variables to segment respondents into groups based on their value orientations toward coral reefs in recreation and tourism settings. Cluster analysis allows classification of individuals into smaller more homogeneous subgroups based on patterns of responses across variables (Hair & Black, 2000). Bivariate analyses (e.g., $\chi^2$) compared demographic characteristics and activity related variables among these value orientation groups. Cramer's $V$ effect size measures were reported where appropriate. SPSS 15.0 software was used for these analyses.

Results

Table 1 shows that, on average across the sites, respondents agreed with the protectionist (i.e., biocentric) variables and disagreed with the use oriented (i.e., anthropocentric) variables. For example, respondents agreed most strongly with the belief statement that "coral reef areas have value whether humans are present or not" and disagreed most strongly with the statement that "the primary value of coral reef areas is to provide for humans."
Orientations and variables | Item code | Mean | Std. dev. | Item total correlation | Alpha (α) if deleted | Cronbach alpha (α)
--- | --- | --- | --- | --- | --- | ---
Use (i.e., anthropocentric) | | | | | | .76
The primary value of coral reef areas is to provide for humans | V₁ | -1.20 | 1.03 | .64 | .63
Recreational use of coral reef areas is more important than protecting species that live there | V₂ | -1.14 | 1.07 | .61 | .66
The needs of humans are more important than coral reef areas | V₃ | -1.09 | 1.07 | .53 | .75
Protectionist (i.e., biocentric) | | | | | | .74
Coral reef areas have value whether humans are present or not | V₄ | 1.40 | .83 | .52 | .67
Coral reef areas should be protected for their own sake rather than to meet the needs of humans | V₅ | 1.27 | .94 | .55 | .66
Recreational use of coral reef areas should not be allowed if it damages these areas | V₆ | .98 | 1.02 | .53 | .66
Coral reef areas should have rights similar to the rights of humans | V₇ | .59 | 1.18 | .51 | .69
Overall value orientation index | | | | | | .78

1 Variables coded on 5-point scale of -2 "strongly disagree" to +2 "strongly agree."
2 The variable "humans should manage coral reef areas so that humans benefit" was removed from the use orientation scale due to poor reliability. Numbers in the table represent results with this variable dropped from the analysis.

Table 1. Final reliability analyses of protectionist and use value orientations

The alpha reliability coefficients were .76 for the use (i.e., anthropocentric) orientation and .74 for the protectionist (i.e., biocentric) orientation, suggesting that variables for each reliably measured their respective orientation (Table 1). Item total correlations represent correlations between the score on a given variable and sum of other variables associated with the orientation. In general, these correlations should be greater than or equal to .40; all variables in the protectionist (i.e., biocentric) scale and all but one in the use (i.e., anthropocentric) scale (i.e., "humans should manage coral reef areas so that humans benefit," item total correlation = .33) met this criterion. Deletion of any variable from the protectionist scale did not improve reliability of this orientation, but deletion of the variable "humans should manage coral reef areas so that humans benefit" from the use orientation scale substantially improved reliability so it was removed from the analysis (i.e., reliability increased from .69 to .76 by deleting the variable). Reliability of the final seven-item overall value orientation scale was high at .78. These descriptive and reliability results did not substantively differ among the three sites.

CFA demonstrated that the data provided an acceptable model fit and supported the construct validity of the value orientation measures (Figure 1). Factor loadings ranged from .64 to .77 for the use orientation and .59 to .68 for the protectionist orientation. All loadings were statistically significant at \( p < .001 \) and fit indices were strong (CFI* = .97, NNFI* = .94, RMSEA* = .06). Consistent with results of the reliability analysis, deletion of the variable "humans should manage coral reef areas so that humans benefit" was supported by the CFA because the factor loading of .37 was below .40 and the chi-square difference test showed that the model improved significantly after this variable was removed, \( \Delta \chi^2 \) (model 1 [retained] vs. model 2 [dropped]) = 38.67, \( p < .001 \). These confirmatory factor analysis results did not substantively differ among the three sites.
Having demonstrated the factor structure, reliability, and construct validity of variables used to measure value orientations toward coral reefs in recreation and tourism settings, K-means cluster analysis was then performed on these variables to segment users into groups. A series of two to six group cluster analyses showed that a three group solution provided the best fit for the data. To validate this solution, data were randomly sorted and a cluster analysis was conducted after each of four random sorts. These additional analyses supported the solution identifying three distinct groups of individuals, labeled: (a) mixed protection-use orientation (cluster 1), (b) moderate protection orientation (cluster 2), and (c) strong protection orientation (cluster 3). These groups were compared in terms of their responses to the original value orientation belief statements. Respondents with a mixed protection-use orientation (cluster 1) reported the lowest mean scores on all variables, those with a strong protection orientation (cluster 3) had the highest scores, and responses from those with moderate protection orientations (cluster 2) fell in between these two groups. Consistent with past studies, this pattern reflects a value orientation continuum (e.g., Bright et al., 2000; Vaske & Donnelly, 1999; Vaske & Needham, 2007). The largest percentage of respondents was classified in the strong protection orientation group (i.e., cluster 3 = 44%) followed by the moderate protection group (i.e., cluster 2 = 36%). The fewest users were in the mixed protection-use orientation group (i.e., cluster 1 = 20%). The cluster analysis did not identify any discernable group of individuals who possessed only use (i.e., anthropocentric) value orientations toward coral reef areas.
Dependent variable: Cluster groups

Independent variables:

Characteristics
1. Mixed protection-use
2. Moderate protection
3. Strong protection
Total

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1 Cell entries are percentages (%).
2 Dichotomous groups based on median split.

Table 2. Bivariate differences in demographic and activity characteristics among value orientation groups

Table 2 shows relationships between respondents’ value orientations and their demographic and activity characteristics. Consistent with past research (e.g., Vaske et al., 2001), females were more likely than males to hold strong protectionist orientations toward reefs (51% of females, 35% of males), whereas males were more likely than females to hold mixed protection-use orientations (27% of males, 14% of females). This relationship between value orientations and whether respondents were male or female was statistically significant, χ²(2, N = 2,413) = 82.13, p < .001. The Cramer's V effect size was .18. Using guidelines from Cohen (1988) and Vaske (2008), this suggests that the strength of this difference between males and females can be described as "minimal to typical" or "weak to medium." Somewhat contrary to research in terrestrial settings (e.g., Manfredo et al., 2003), younger respondents were slightly less likely to hold stronger protectionist orientations toward reefs, but the relationship between age and value orientations was not statistically significant, χ²(2, N = 2,376) = 5.53, p = .063, V = .05. There was also no relationship between location of residence (e.g., Hawai‘i, international) and value orientations toward reefs, χ²(4, N = 2,390) = 8.21, p = .084, V = .04.

The percentages of users classified in each of the three value orientation groups did not differ among the three sites, χ²(4, N = 2,499) = 4.07, p = .397, V = .03 (Table 2). Value orientations toward coral reefs, however, did differ among main activity groups. The largest activity group, swimmers and sunbathers, were most likely to hold strong protectionist orientations toward reefs (46%). Although fishing was not a popular summer activity at any of the sites in 2007, anglers were least likely to hold strong protectionist orientations (24%) and were most likely to have more mixed protection-use orientations (48%). This finding is consistent with previous research (e.g., Manfredo et al., 2003). Interestingly, snorkelers were statistically more likely to hold stronger protectionist orientations toward coral reefs (43%) than scuba divers (29%); the majority of divers had a more moderate protection orientation (51%). These differences among activity groups in their value orientations toward reefs were statistically significant, but the effect size was relatively "minimal" or "weak," χ²(8, N = 2,445) = 23.78, p = .002, V = .07.
CONCLUSIONS

Objectives of this article were to: (a) test the validity and reliability of a scale that can be used in onsite surveys for measuring value orientations toward coral reefs in recreation and tourism settings, and (b) segment users into groups based on their orientations and examine activity and demographic differences among these groups to identify characteristics of people holding different value orientations. Results showed that users agreed with protectionist and disagreed with use oriented variables. Reliability and confirmatory factor analyses revealed that except for one variable ("humans should manage coral reef areas so humans benefit"), the scale for measuring value orientations toward reefs was valid and reliable. Cluster analysis segmented respondents into three value orientation groups (strong protection, moderate protection, mixed protection-use). The largest number of users had strong protectionist orientations and there was no group possessing only anthropocentric or use orientations toward reefs. There were no relationships between value orientations and site, age, and location of residence. Conversely, females, snorkelers, and swimmers / sunbathers held stronger protectionist orientations toward reefs, whereas divers and anglers were more likely to have mixed protection-use or moderate protection orientations. These findings have implications for management and future research.

Management Implications

From a management perspective, users were somewhat heterogeneous and exhibited a range of value orientations toward coral reefs. Although the largest proportion of users at all three sites had strong protectionist orientations toward reefs, many respondents had more moderate protectionist or mixed protection-use orientations. Value orientations are important because they can be determinants of more specific attitudes that, in turn, can help to explain patterns of human intentions and behaviors toward natural resources such as coral reefs (Fishbein & Ajzen, 1975; Fulton et al., 1996). If people have a more use or anthropocentric value orientation toward reefs, for example, they may be less concerned about the health of the resource and more inclined to engage in depreciative behaviors such as touching or disturbing coral and reef species. Results showed that males and people diving and fishing were less likely to have strong protectionist orientations toward reefs, so managers seeking to encourage conservation related behaviors may want to consider targeting these groups with information and education messages that aim to promote environmentally responsible behavior (Briggs, 2005). Not all recreationists behave in the same manner, so information about value orientations is useful for understanding who may participate in depreciative behaviors and why they might engage in these behaviors.

Understanding subgroups of recreationists and tourists, and knowing the proportion of people who belong to each group can also be useful for estimating possible reactions to management actions (Vaske & Needham, 2007). Given that many users had strong protectionist orientations and others had more mixed protection-use orientations, not all users will respond in the same manner to changes in conditions and management at each site. The largest proportion of respondents, however, had strong protectionist value orientations toward coral reefs, suggesting that recreation or other uses and management decisions that have deleterious effects on reef ecosystems are not likely to be widely supported at each site. There was also no clear group of users with only use or anthropocentric orientations toward reefs, so it is likely that management efforts that attempt to conserve or protect marine resources such as coral reefs will be supported.

Although effecting change in value orientations may be difficult to accomplish, they should not be construed as never changing (Fulton et al., 1996). Research has shown that value orientations in many countries are slowly changing over time as society is shifting to more protectionist or biocentric orientations toward natural resources (Dunlap & Van Liere, 1978; Inglehart, 1990;
Manfredo et al., 2003). Given that value orientations are formed early in life and during socialization, however, they are relatively stable and resistant to change, so shifts in orientations may continue to occur gradually (Fulton et al., 1996). As a result, attempts to inform and educate individuals with protectionist orientations toward coral reefs to consider adopting a favorable attitude and vote in support of actions that may be harmful to reefs are unlikely to be successful.

**Research Implications**

From a research perspective, results showed that females were more likely than males to have protectionist orientations toward coral reefs in recreation and tourism settings. This finding is consistent with public value orientations toward other natural resources (e.g., forests, wildlife) in other terrestrial settings (Manfredo et al., 2003; Vaske et al., 2001). In addition, activity groups such as anglers had weaker protectionist orientations and more mixed protection-use orientations toward reefs. This finding is also consistent with earlier research. Manfredo et al. (2003), for example, found that anglers were less likely to have biocentric values toward fish and wildlife.

One objective of this article was to test the validity and reliability of a scale that can be used in onsite surveys for measuring value orientations toward coral reefs in recreation and tourism areas. In most previous studies of value orientations toward natural resources such as wildlife and forests, data were obtained from relatively long mail surveys (e.g., Fulton et al., 1996; Vaske & Needham, 2007). Respondent burden is of less concern in mail surveys and as a result, scales used to measure value orientations in these studies contained upward of 40 belief statements (Vaske, 2008). Onsite surveys, however, are typically shorter in length to minimize disruption to recreation and tourism experiences (Vaske, 2008). This study adopted a sample of belief statements used in past studies of value orientations toward wildlife and forests (e.g., Fulton et al., 1996; Vaske & Donnelly, 1999) and with the exception of context (i.e., coral reefs), the statements were identical to those in these earlier studies. Reliability and confirmatory factor analyses showed that the statements provided a valid and reliable measure of value orientations toward coral reefs. It is important to recognize, however, that the eight belief statements asked and seven statements retained in the scales are only a partial sample of possible beliefs that could be associated with value orientations toward reefs. In addition, the statement "humans should manage coral reef areas so humans benefit" was not a valid or reliable variable. Research is needed to confirm these results in other marine areas and identify additional belief statements to improve understanding of value orientations toward coral reefs in recreation and tourism areas.

Consistent with past research (Bright et al., 2000; Vaske & Donnelly, 1999), cluster analysis supported segmenting respondents into groups along a protection-use continuum from mixed protection-use to strong protection. Some research, however, has revealed additional value orientation dimensions (e.g., bequest and existence, consumptive and nonconsumptive) that may make it more challenging to classify individuals along a single bipolar continuum (Fulton et al., 1996; Manfredo et al., 2003). Research is needed on the extent that additional value orientation dimensions are important in a marine context in general and in a coral reef context in particular.

Research has shown that value orientations predict attitudes, which can then influence intentions and behaviors (Fishbein & Ajzen, 1975; Vaske & Donnelly, 1999). The goal of this article was not to test relationships among concepts in this cognitive hierarchy model. Rather, an objective was to develop and validate a scale to be used in onsite surveys for measuring value orientations toward reefs in recreation and tourism areas. Research should test path models of relationships among value orientations and other cognitions and behaviors in coastal and marine settings.

Sites in this study included a state-managed marine protected area (Pupukea MLCD), a special resource use management area (Waikiki Diamond Head Shoreline FMA), and a relatively
unregulated county beach park (Kailua Beach). These sites are generally representative of the different coastal and marine recreation and tourism settings in Hawai’i, and could be considered along a continuum of management from an area protected and managed primarily for conservation purposes (Pupukea MLCD) to a beach park that is managed mostly for recreation use (Kailua Beach). Despite these regulatory and jurisdictional differences, value orientations were almost identical across sites. This suggests that perhaps value orientations are not just stable over time, but they may be consistent across coastal and marine settings. It is important to recognize, however, that this study only considered one stakeholder group – people visiting coastal recreation and tourism sites. Other stakeholders may hold different value orientations toward coral reefs in recreation and tourism areas. Future research should examine value orientations of other groups with a vested interest in coastal and marine resources such as managing agencies, first nations (e.g., native Hawaiians), community organizations, and other special interest groups. Incorporation of multiple stakeholders will allow for a more complete understanding of similar or potentially competing value orientations toward natural resources.

Finally, this study was conducted at three recreation and tourism sites on one of the Hawaiian Islands. Across all sites, most respondents had protectionist value orientations toward coral reefs. This finding could be a function of the types of people who dominated each site; most were sunbathers, swimmers, or snorkelers. Findings may not generalize to all coastal and marine environments, especially areas dominated by more consumptive uses such as recreational or subsistence fishing. The applicability of these findings to other activity groups and geographical areas remains a topic for further empirical investigation.

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REFERENCES


A CONJOINT ANALYSIS OF SITUATIONAL INFLUENCES ON ACCEPTANCE OF COASTAL RECREATION MANAGEMENT STRATEGIES IN HAWAI’I

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ABSTRACT

Acceptance of strategies for managing recreation and tourism in coastal areas depends on situational factors including social, resource, and facility impact levels. If an area, for example, has adequate facilities, little crowding, and minimal environmental impacts, modifying an existing management regime may not be supported. Conversely, if an area is damaged and overcrowded, actions such as limiting access may be acceptable to user groups. This article measures acceptance of management actions for minimizing recreation and tourism impacts in coastal areas, and how situational factors differentially influence acceptance of these actions. Data were obtained from 1,399 surveys completed by users at Pupukea Marine Life Conservation District, Waikiki Diamond Head Shoreline Fisheries Management Area, and Kailua Beach Park on the island of O’ahu, Hawai’i. The surveys included eight scenarios depicting varying impacts to four factors: number of people, presence of litter, recreation damage to coral reefs, and condition of facilities. Respondents rated their acceptance of improving user education and awareness, restricting use, increasing facilities, and improving site maintenance for each scenario. Conjoint analyses revealed that the factors differentially influenced acceptance of each action. When rating acceptance of improving user education, utility scores and average importance values suggested that recreation damage to reefs was the most important factor. Use level was the most important factor in rating acceptance of limiting numbers of people, and condition of facilities was the most important in rating acceptance of improving site maintenance and providing more facilities. Research and management implications are discussed.

Keywords: coastal recreation and tourism management, conjoint analysis, norms, situational factors, tradeoffs

INTRODUCTION

Coastal and marine environments are popular settings for recreation and tourism activities. In Hawai’i, for example, more than 80% of the state’s seven million annual visitors engage in coastal and marine recreation activities with a majority participating in scuba diving (200,000 people per year) or snorkeling (three million people per year; Friedlander et al., 2005; Hawai’i DBEDT, 2002; van Beukering & Cesar, 2004). Coastal and marine areas are also important for local residents with approximately 30% of households in Hawai’i having at least one person who participates in recreational fishing (QMark, 2005). Other popular activities in these settings include ocean kayaking, swimming, sunbathing, beach walking, and surfing.
As the popularity of coastal and marine areas for recreation and tourism continues to increase, concerns have been raised that additional use could damage the ecological integrity of resources, reduce the quality of user experiences, deprecate conditions of facilities accommodating users, and generate conflict among stakeholders (see Lück, 2008; Manning, 1999, 2007; Weaver, 2001 for reviews). Regulatory agencies also face a number of challenges in this context as they attempt to implement appropriate management actions that mitigate environmental, social, cultural, and facility effects of increasing public use (Higham & Lück, 2007).

Given recent demographic shifts (Cordell, Bergstrom, Betz, & Green, 2004), changes in attitudes and value orientations (Manfredo, Teel, & Bright, 2003), and the increased effectiveness of interest groups (Needham & Rollins, 2005), a broad spectrum of the public now demands and expects involvement in decision-making on coastal recreation and tourism management issues (Marion & Rogers, 1994). Groups may resort to administrative appeals, court cases, or ballot initiatives if they perceive that their concerns are not being addressed, and management actions lacking public support may be ineffective (Williamson, 1998). It is important, therefore, to understand user opinions about recreation and tourism management strategies in coastal areas (Higham & Lück, 2007). This article examines user support and opposition toward potential strategies for managing recreation and tourism impacts at several coastal sites in Hawai`i and how situational factors such as coral reef damage, use levels, and amount of litter differentially influence support or opposition to these strategies.

**Conceptual Background**

Management of recreation and tourism can be categorized into two general approaches. First, direct management strategies act directly on user behavior leaving little or no freedom of choice. Second, indirect strategies attempt to influence decision factors upon which users base their behavior (Manning, 1999). To illustrate, direct management practices aimed at reducing litter in a coastal area could include a regulation prohibiting littering and then enforcing this policy with fines or other sanctions. An indirect practice could be an education program informing users of undesirable environmental and aesthetic impacts of litter, and encouraging users to stop littering. Additional direct actions include quotas and other methods for limiting use such as zoning, implementing user fees, and prohibiting certain activities. Other indirect strategies include voluntary guidelines and facility upgrades and maintenance (e.g., trash cans, boardwalks).

Norm theory offers a theoretical and conceptual approach for identifying public support and opposition toward direct and indirect management practices, and can also help explain why these practices are judged acceptable or unacceptable. One line of research defines norms as standards that individuals use to evaluate activities, environments, or management strategies as good or bad, better or worse; they are what people believe individual or agency behavior should be in a given context (see Shelby, Vaske, & Donnelly, 1996; Vaske & Whittaker, 2004 for reviews). In a coastal context, norms or evaluative standards may refer to the extent that agency strategies for addressing user crowding or damage to coral reefs would be acceptable or unacceptable to users.

Measuring user norms toward recreation and tourism management strategies has traditionally involved using a series of single-item questions to investigate whether people support or oppose individual strategies (see Manning, 1999 for a review). Users in coastal areas may be asked, for example, whether they feel that providing more educational information in signs or brochures is acceptable or unacceptable (Shafer & Inglis, 2000; Tonge & Moore, 2007). This approach can be problematic for two reasons. First, it can result in a “ceiling effect” where many strategies are supported by most respondents, but implementing all supported strategies may be impossible for logistical or financial reasons (Lawson, Roggenbuck, Hall, & Moldovanyi, 2006; Oh, 2001). Second, acceptance of strategies often depends on situational factors such as the associated levels of
social, environmental, and facility impacts (Kneeshaw, Vaske, Bright, & Absher, 2004). If a coastal area, for example, has adequate facilities, little crowding, and minimal coral reef impacts, modifying an existing management regime may not be supported by users. Conversely, if the reef is damaged and the site is overcrowded, then direct actions such as limiting use may be more acceptable. Practices acceptable in one context may not necessarily be acceptable in another, depending on the norms that individuals hold for a particular context and management action.

This traditional approach of measuring norms toward management strategies rarely reflects the complexity of recreation and tourism management and actual decision-making processes. This approach also generally fails to address contextual or situational factors that differentially influence decisions to support or oppose particular management actions (Kneeshaw et al., 2004; Lawson et al., 2006; Sorice, Oh, & Ditton, 2007, 2009). A need exists in coastal recreation and tourism management to understand both the range of contextual or situational factors influencing management, and how users and other interest groups respond to these factors (Sorice et al., 2009). Understanding these situational influences on public acceptance of management may increase manager confidence when choosing among various potential management alternatives. Given the complexity of most management situations, it may be more useful to examine how individuals tradeoff their support of specific management strategies in light of situational factors such as social, resource, and facility impact levels (Kneeshaw et al., 2004; Lawson et al., 2006).

Recent research using multivariate statistical techniques such as conjoint analysis (Luce & Tukey, 1964) has investigated the relative importance placed on various aspects of a recreation and tourism setting, and the extent that individuals consider tradeoffs among these situational factors in their support of various management practices (e.g., Arnberger & Haider, 2007; Cahill, Marion, & Lawson, 2007; Dennis, 1998; Kneeshaw et al., 2004; Lawson et al., 2006; Sorice et al., 2007, 2009; Teisl, Boyle, & Roe, 1996). Instead of asking individuals to rate their support for a single factor or attribute at one time (i.e., traditional approach), these newer techniques evaluate scenarios describing configurations of a set of factors. Respondents weigh tradeoffs among factors as they evaluate each scenario and report their norms for each management action. This approach provides managers with an understanding of how people could respond to the implementation of management strategies given various combinations of current or future social, resource, and facility conditions (Lawson et al., 2006).

Research has identified several important situational factors and indicators that influence acceptance of recreation and tourism management strategies in coastal and marine settings. Four of these prominent factors (number of people or use level, recreation damage to coral reefs, presence of litter, condition of facilities) were identified in the literature and examined relative to their influence on user norms toward management strategies. These factors were chosen because of their saliency in the literature and their relevance to coastal and marine recreation management. Number of people (i.e., use level) is an important factor because visitation to coastal and marine areas has increased in many parts of the world (Inglis, Johnson, & Ponte, 1999; Lück, 2008; Orams, 1999). Research has shown that crowding and other negative impacts to the quality of experience can occur when users encounter more people than they consider tolerable (Needham, Rollins, & Wood, 2004; Vaske & Donnelly, 2002). Studies have also demonstrated that recreation activities such as snorkeling and diving can cause coral reef damage such as breakage, abrasion, and mortality (e.g., Barker & Roberts, 2004; Hawkins et al., 1999; Meyer & Holland, in press; Rodgers & Cox, 2003; Rouphael & Hanafy, 2007; Rouphael & Inglis, 2002; Tratalos & Austin, 2001). One of the most offensive issues reported by people in a recreation and tourism context is litter (Manning, 1999). Encountering even a small amount of litter can diminish the quality of user experiences (Heywood & Murdock, 2002; Manning et al., 2004; Oigman-Pszczol & Creed, 2007). Finally, many developed coastal recreation areas contain facilities such as trash cans, bathrooms, and showers. Facilities accommodate people, but users can be dissatisfied with the site and their experience if these
facilities are in a state of disrepair (e.g., Lew & Larson, 2005; Manning, 1999; Shafer & Inglis, 2000).

Research Questions

This article applies conjoint analysis to determine the relative importance of these four situational factors and the influence of varying factor levels on normative judgments that users make about coastal recreation and tourism management strategies in Hawai‘i. Two research questions are addressed. First, to what extent would users accept or reject different strategies for managing recreation and tourism at coastal sites in Hawai‘i (e.g., limit use, improve site upkeep, improve user education and awareness)? Second, how do situational factors (e.g., use level, coral reef damage, amount of litter) differentially influence acceptance of these strategies?

THE STUDY

Study Areas

Data were obtained from summer users visiting one of three coastal sites on the island of O‘ahu, Hawai‘i: (a) Pupukea Marine Life Conservation District (MLCD), (b) Waikiki Diamond Head Shoreline Fisheries Management Area (FMA), and (c) Kailua Beach Park. Pupukea MLCD is on the north shore of the island and includes three bays: Waimea Bay, Three Tables, and Shark's Cove. Popular summer activities at this MLCD include swimming, beach walking, snorkeling, and diving. Facilities such as restrooms, showers, parking, and trash cans are available. Waikiki Diamond Head Shoreline Fisheries FMA is on the leeward south coast of the island and extends from the Waikiki War Memorial Natatorium to Diamond Head Lighthouse. The popular areas for summer activities such as sunbathing, swimming, and surfing are Sans Souci / Kaimana Beach and Diamond Head Beach Park. Restrooms, showers, parking, picnic tables, and benches are located in this FMA. Kailua Beach Park is on the windward northeast coast of O‘ahu and is renowned for its long sandy beach and turquoise waters. Facilities include showers, restrooms, picnic tables, trash cans, and several parking areas. Summer activities at Kailua Beach Park include sunbathing, swimming, beach walking, kayaking, kite surfing, windsurfing, and fishing.

Data Collection

Surveys were administered onsite to individuals at these three sites during two weeks in July 2007 and two weeks in August 2007. To increase probability of achieving a representative sample of summer users, sampling at the sites was stratified and alternated so that surveys were administered at each site at least once for each day of the week (Monday to Sunday) and at least once for each of three time periods each day (8:00 AM to 10:30 AM, 11:30 AM to 2:00 PM, 3:00 PM to 5:30 PM). Given that these sites are relatively popular, it was not feasible or necessary to survey every person encountered during the survey periods. Individuals were selected through a systematic random sampling procedure to reduce selection bias (e.g., one random individual selected from every 5<sup>th</sup> or 10<sup>th</sup> selected group depending on the size and popularity of the site; Vaske, 2008). In total, 1,601 summer visitors were approached and 1,399 of these individuals completed the conjoint survey onsite (overall response rate = 87%). This sample yields a 95% confidence interval with a margin of error of ± 2.6%, which is better than the ± 5.0% convention for most social sciences (Vaske, 2008). The sample size was 491 at Pupukea MLCD (93% response), 463 at Waikiki Diamond Head Shoreline FMA (84% response), and 445 at Kailua Beach Park (85% response).
Conjoint Measures

For the conjoint analysis, scenarios were developed and used in the surveys to represent combinations of the four situational factors and factor levels related to impacts associated with coastal recreation and tourism. Two levels were used for each of the four factors:

1. Number of people or use level (low versus high).
2. Recreation damage to coral reefs (minimal versus substantial).
3. Amount of litter (none versus some).
4. Condition of facilities such as bathrooms, showers, signs, and trash cans (good versus poor).

Given that each of these four factors had two discrete levels, $2^4$ or 16 possible combinations or scenarios would be necessary to represent a full factorial design. To reduce respondent burden, a smaller subset of scenarios was generated using an orthogonal fractional factorial design in SPSS Conjoint 10.0 software. This reduced the number of scenarios asked in the surveys to eight (Table 1). Information about main effects for all other possible combinations (i.e., scenarios) can be determined additively from the constants and utility scores generated by conjoint analysis, and can be used to predict acceptance of management actions for scenarios that were not evaluated.

For each scenario, respondents were asked to assume that all four conditions were common at the site and then rate their acceptance of four different management strategies: (a) improve education / awareness of people at the site, (b) restrict the number of people allowed at the site (i.e., limit use), (c) improve maintenance or upkeep of the site, and (d) provide more facilities or services at the site. Most of these are indirect management strategies except restricting numbers of users, which is a direct action. Respondents rated 32 management actions (four for each of the eight scenarios) on 5-point scales of -2 “very unacceptable” to +2 “very acceptable.” These ratings represented user norms about acceptable and unacceptable management strategies.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Use level</th>
<th>Reef damage</th>
<th>Litter</th>
<th>Facilities condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High</td>
<td>Minimal</td>
<td>None</td>
<td>Poor</td>
</tr>
<tr>
<td>2</td>
<td>High</td>
<td>Substantial</td>
<td>Some</td>
<td>Poor</td>
</tr>
<tr>
<td>3</td>
<td>High</td>
<td>Minimal</td>
<td>Some</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>Low</td>
<td>Minimal</td>
<td>None</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>Low</td>
<td>Substantial</td>
<td>None</td>
<td>Poor</td>
</tr>
<tr>
<td>6</td>
<td>Low</td>
<td>Substantial</td>
<td>Some</td>
<td>Good</td>
</tr>
<tr>
<td>7</td>
<td>High</td>
<td>Substantial</td>
<td>None</td>
<td>Good</td>
</tr>
<tr>
<td>8</td>
<td>Low</td>
<td>Minimal</td>
<td>Some</td>
<td>Poor</td>
</tr>
</tbody>
</table>

1 Each factor has two dichotomous levels. Following each scenario, respondents rated four management actions (improve education / awareness of users, restrict number of people allowed in area, improve maintenance or upkeep of area, provide more facilities or services in area) on 5-point scales of -2 “very unacceptable” to +2 “very acceptable.” See Needham et al. (2008) for how scenarios were presented in the onsite surveys.

Table 1. Orthogonal fractional factorial design for scenarios with varying combinations of factors and levels

Data Analysis

Factors (e.g., number of people, damage to coral reef, litter, condition of facilities) are the independent variables in conjoint analysis and acceptance ratings for each management action (e.g., improve education or awareness, restrict use, improve maintenance or upkeep, provide more facilities) are the dependent variables. Conjoint analysis output provides utility scores or part-worth estimates identifying preferences for each factor level, percentages of averaged importance attributed to each factor, and correlations between predicted and observed acceptance ratings. Conjoint analysis decomposes respondent ratings of a management strategy into utility scores for each factor. These utility scores represent the influence of each factor level on acceptance ratings.
for each management strategy for a particular scenario. Utility scores can be added together with
the constant to predict acceptance of each management strategy for all possible scenarios, including
those not asked in surveys. Unlike ordinary least squares regression, conjoint analysis eliminates
cases with missing values or equal ratings across all scenarios. If a respondent rated "restrict the
number of people" for Scenario 1 as "very acceptable," for example, and repeated this answer for
all eight scenarios, these responses would be eliminated from analysis for this management strategy
because he or she would not have a preference for different factors and their associated factor
levels. Averaged importance scores are standardized percentages computed by taking the range of
utility scores for each factor and dividing these by the total range in utility values across all factors.
Pearson R model fit statistics are correlations between predicted and observed acceptance ratings,
provide a measure of the conjoint model goodness of fit, and range from 0 (poor fit) to 1 (perfect
fit). Separate conjoint models were initially run for each of the three sites and for each of the
various activity groups at these sites. Given that these results paralleled those for the overall
combined sample and there were no statistically significant differences among sites or activities (p
> .05), only findings from the entire sample aggregated across all sites and activities are presented.
Conjoint analysis was conducted separately for responses to each of the four coastal recreation
and tourism management actions (improve education / awareness, restrict use, improve maintenance /
upkeep, provide more facilities). Utility scores assessed how factor levels influenced mean
acceptance of each of these management strategies.

Results

Table 2 shows the utility scores for each factor level for each management strategy. These scores
are averages across respondents and assess how factor levels affect mean acceptance. The
magnitude and sign of the utility score (positive or negative) indicate the relative influence of each
factor level on mean acceptance. A positive utility indicates that the factor level increased
acceptance of the strategy (constant + factor level utility); a negative utility suggests that the factor
level decreased mean acceptance (constant – factor level utility).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Improve education / awareness</th>
<th>Limit use / restrict people</th>
<th>Improve upkeep</th>
<th>More facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Averaged utility</td>
<td>Mean rating 1</td>
<td>Averaged utility</td>
<td>Mean rating 1</td>
</tr>
<tr>
<td>Use level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>-0.103</td>
<td>0.924</td>
<td>-0.310</td>
<td>-0.098</td>
</tr>
<tr>
<td>High</td>
<td>0.103</td>
<td>1.130</td>
<td>0.310</td>
<td>0.522</td>
</tr>
<tr>
<td>Reef damage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal</td>
<td>-0.276</td>
<td>0.751</td>
<td>-0.268</td>
<td>-0.056</td>
</tr>
<tr>
<td>Substantial</td>
<td>0.276</td>
<td>1.303</td>
<td>0.268</td>
<td>0.480</td>
</tr>
<tr>
<td>Litter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>-0.057</td>
<td>0.970</td>
<td>-0.057</td>
<td>0.155</td>
</tr>
<tr>
<td>Some</td>
<td>0.057</td>
<td>1.084</td>
<td>0.057</td>
<td>0.269</td>
</tr>
<tr>
<td>Facilities condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>-0.019</td>
<td>1.008</td>
<td>-0.021</td>
<td>0.191</td>
</tr>
<tr>
<td>Poor</td>
<td>0.019</td>
<td>1.046</td>
<td>0.021</td>
<td>0.233</td>
</tr>
<tr>
<td>Constant</td>
<td>1.027</td>
<td>0.212</td>
<td>0.921</td>
<td>0.998</td>
</tr>
<tr>
<td>Model fit 2</td>
<td>0.987</td>
<td>0.988</td>
<td>0.982</td>
<td>0.998</td>
</tr>
</tbody>
</table>

1 Scale for acceptance of management strategies was -2 "very unacceptable" to 0 "neither" to +2 "very acceptable."
2 The model goodness of fit statistic is the Pearson R correlation between predicted and observed acceptance ratings.
   All values were significant at p < .001.

Table 2. Mean acceptance ratings and utility scores of management actions by situational factor levels

Mean acceptance of each of the four management strategies as influenced by each of the eight
situational factor levels is displayed in Table 2. The management strategy "improve education /
awareness of users" was acceptable across all factor levels, which suggests that users believed that improving user education and awareness is currently acceptable and is acceptable even under the best case scenario at all sites (i.e., low use, minimal reef damage, no litter, good facilities). This strategy was most acceptable if reef damage was substantial ($M = 1.30$), use levels were high ($M = 1.13$), litter was present ($M = 1.08$), and facilities were in poor condition ($M = 1.05$).

"Restricting the number of people allowed in the area" was, on average, acceptable across factor levels unless use levels were low ($M = -0.10$) and reef damage was minimal ($M = 0.06$). Use restrictions were not supported unless use levels were high ($M = 0.52$) and the amount of damage to coral reefs was substantial ($M = 0.48$). The strategy was also acceptable if there was some litter present ($M = 0.27$) and facilities were in poor condition ($M = 0.23$). This direct management strategy was, however, less acceptable than the other three actions (improve education, more facilities, better upkeep) across all factors levels and suggests that this is a controversial strategy that should be used as a last resort.

The management strategy "improve maintenance and upkeep" was acceptable across all factor levels, but was most acceptable if facilities were in poor condition ($M = 1.28$). This strategy was also more acceptable if there was some litter ($M = 1.05$), use levels were high ($M = 1.01$), and there was substantial damage to coral reefs ($M = 0.94$). Similarly, "providing more facilities or services" was, on average, acceptable across all factor levels, especially if facilities were in poor condition ($M = 0.96$). This strategy was also more acceptable if use levels were high ($M = 0.67$) and some litter was present ($M = 0.65$). These results suggest that users believed that improving maintenance and providing more facilities are currently acceptable and are acceptable even under the best case scenario at all sites (i.e., low use, minimal reef damage, no litter, good facilities). These conjoint model results describe how situational factor levels differentially influenced acceptance of various management strategies, and Pearson R goodness of fit statistics ranged from 0.982 to 0.998 indicating a strong fit for these models.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Improve education / awareness</th>
<th>Limit use / restrict people</th>
<th>Improve upkeep</th>
<th>More facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use level</td>
<td>23</td>
<td>35</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Reef damage</td>
<td>41</td>
<td>31</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Litter</td>
<td>18</td>
<td>17</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>Facilities condition</td>
<td>18</td>
<td>17</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

1 Cell entries are percentage averaged importance (%).

Table 3. Averaged relative importance of each factor for each management action.
(18% to 23%). These results indicate that the importance of the four factors to mean acceptance ratings substantively differed according to the management actions evaluated.

CONCLUSIONS

This article examined user acceptance of management actions for minimizing recreation and tourism impacts in coastal areas, and how situational factors differentially influence acceptance of these actions. Conjoint analysis revealed that improving user education and awareness was acceptable across all impacts to situational factors (e.g., use level, coral reef damage, litter), suggesting that users believed that improving education and awareness is currently acceptable and is acceptable even under the best case scenario at all sites (i.e., low use, minimal reef damage, no litter, good facilities). Limiting use was acceptable unless use levels were low and reef damage was minimal. This strategy was most acceptable if use levels were high and there was substantial reef damage. Limiting use, however, was less acceptable across all factor levels than improving education, providing more facilities, and improving upkeep, suggesting that it is controversial and should be a strategy of last resort. Improving site upkeep and offering more facilities and services were acceptable across all factor levels, but were most acceptable if facilities were in poor condition. Users believed that improving maintenance and providing more facilities are currently acceptable and are acceptable even under the best case scenario at each site. When rating acceptance of improving user education, recreation damage to reefs was the most important factor. Use level was the most important factor in rating acceptance of limiting numbers of people, and condition of facilities was the most important in rating acceptance of improving site maintenance and providing more facilities. These findings have implications for management and future research.

Management Implications

From a management perspective, these results indicated that situational conditions differentially influenced user normative acceptance of potential strategies for managing recreation and tourism impacts at each site. Results also suggested that users will react differently to management actions in response to future changes in site conditions (Kneeshaw et al., 2004). Providing more educational information to users, for example, would be the most supported management strategy if evidence of substantial coral reef damage from recreation emerges in the future. Users would also support improving site maintenance and upkeep followed by providing more facilities if evidence of litter and facility disrepair occurred in the future. These findings have the potential to inform and more accurately reflect the complexity of manager decisions associated with addressing overuse and other impacts in coastal and marine recreation and tourism environments.

Respondents believed that improved interpretive and educational information, better upkeep and maintenance, and more facilities and services would currently be acceptable at each site. There is currently little educational information at each site except for a few signs stipulating direct rules and regulations. Given state and county funding and personnel constraints, several facilities are also in relatively poor condition. Trash cans are sometimes overflowing on busy weekends and holidays, and many bathroom stalls are damaged and not functional. It is not surprising that users would accept more educational information, improved upkeep and maintenance, and more facilities and services even under current conditions.

Limiting use was the most controversial strategy. Restricting the number of users allowed at each site would currently be unacceptable and this would only be supported if there was evidence of substantial reef damage, prevalent litter, and damaged facilities in addition to high use levels. This management action is often viewed as the only approach to mitigating impacts from recreation use, but there are numerous other direct and indirect options such as spatial and temporal zoning, user
fees, site rehabilitation and hardening, and advertising alternative or underused sites (Manning, 1999, 2007). Results showed that limiting use at these coastal and marine sites in Hawai`i should be used as a last resort and avoided unless absolutely necessary.

Sites in this study included a state-managed marine protected area (Pupukea MLCD), a special resource use management area (Waikiki Diamond Head Shoreline FMA), and a relatively unregulated county beach park (Kailua Beach). These sites are generally representative of the different coastal and marine recreation and tourism settings in Hawai`i, and could be considered along a continuum of management from an area protected and managed primarily for conservation purposes (Pupukea MLCD) to a beach park that is managed mostly for recreation use (Kailua Beach). Despite regulatory and jurisdictional differences, user norms and tradeoffs toward management strategies were almost identical across these sites. This finding suggests that information from this study could be used in planning and managing other coastal recreation sites in Hawai`i, but it is important to recognize that site-specific management will always be necessary to some degree at other locations (Higham & Lück, 2007; Lück, 2008; Orams, 1999).

This article also highlighted that conjoint analysis can reveal information useful for informing management of coastal resources. Utility scores generated in conjoint analysis, for example, can allow managers to anticipate support for or opposition to specific management strategies (Kneeshaw et al., 2004). In addition, the averaged relative importance of situational factors and factor levels indicates their influence in determining user norms and acceptance of management policies. The importance attributed to different situational factors can also allow managers to identify public concerns that need to be addressed (Lawson et al., 2006).
Adding factors and factor levels exponentially increases the number of possible combinations and as a result, more scenarios must be asked in surveys. Future studies, however, should consider other categories to characterize situational factors. Researchers might consider including "moderate" as a third level to the use level factor (Vaske & Donnelly, 2002). Amount of litter was described in this study as either "none" or "some" and these levels could be quantified more precisely (e.g., no litter seen on a visit versus 100 pieces of litter seen). It remains an issue for future research to explore the value of alternative formulations to factors and their associated impact levels.

It is important to recognize that this study only considered one stakeholder group – people visiting coastal recreation and tourism sites in the summer. Other stakeholders may have different norms about acceptance of management actions. Researchers should examine responses of others with a vested interest in coastal and marine resources such as community organizations, first nations (e.g., native Hawaiians), and other special interest groups. Incorporation of multiple stakeholders allows for a more complete understanding of norms about management of coastal and marine settings and activities occurring in these environments. Finally, findings are limited to three sites on one of the Hawaiian Islands and may not generalize to all coastal and marine environments where recreation and tourism is common. Applicability of these findings to other activity groups and geographical areas remains a topic for further empirical investigation.

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SUSTAINABLE MARINE TOURISM DEVELOPMENT: CREATING COMMUNITY AND ECONOMIC GROWTH ON THE WASHINGTON COAST AT SEABROOK, WA

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ABSTRACT

The Washington coast is rich in natural resources and aesthetic beauty offering an abundant supply of tourist and recreational activities. The slumping commercial fishing and timber industries make it necessary for the seaside counties to look for alternative sources of economic development such as the growing coastal and marine tourism (CMT) market. Currently CMT is focused in several towns with sprawled out and ageing infrastructure. While these towns still meet the needs of many tourists, a growing market demand for improved amenities and green building exists along with a desire to return to communities with greater social and cultural benefits. The town of Seabrook, Washington, is being constructed using the principles of new urbanist philosophy, a movement to create small scale, vibrant towns that are connected, walkable, mixed-use and diverse. The developers have been successful in utilizing aspects of nature and architecture to create an attractive environment that contrasts with typical built environments which tourists experience both at home and at local tourist destinations. Residents appear to be experiencing social elements of “flow” as defined by Mikhail Csikszentmihalyi, in addition to evidence of developing touristic solidarity. Seabrook is an example of a developing tourist town filling a social niche market and while mitigating environmental impacts by attempting to use sustainable and eco-friendly building techniques. Seabrook can be used as a model for future social and economic development of CMT infrastructure on the Washington Coast.

Keywords: coastal and marine tourism, new urbanism, sustainability, flow, touristic solidarity.

REFERENCES


TRAVEL MOTIVATIONS OF TOURISTS TO SELECTED MARINE DESTINATIONS

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ABSTRACT

South Africa is well known for its favourable climate, wildlife and golden beaches. Adding to this, its long summers make its coastline (over 3500km) even more attractive to tourists around the world, and so are transforming the South African coast into a major marine tourism attraction. Along this lengthy coastline lie numerous marine destinations attracting thousands of tourists. These destinations offer various activities such as scuba diving, snorkeling, swimming, world class surfing and whale watching to tourists. When trying to capitalise on these assets, marketers clearly state that it is necessary to understand the market that uses them and the reasons people travel. Therefore, the purpose of this research is to determine the travel motives of tourists to selected marine destinations.

Five surveys were conducted at marine resorts by means of a structured questionnaire. Two hundred and two (202) questionnaires were completed at Hartenbos, 210 at Jeffrey’s Bay, 333 at Margate, 237 at Amanzimtoti and 153 at Plettenberg Bay. The statistical analysis entailed descriptive statistics and a factor analysis of the five surveys. The results revealed similarity regarding escape and relaxation as travel motives when compared to other research. However, time usage and personal attachment were unique motives identified by this study.

A combination of psychological motives and of more tangible aspects should be used in tourism marketing strategies in order to attract a higher number of visitors to marine destinations. These results will, therefore, assist marketers and product developers of marine destinations, particularly with the marine tourism product being very similar.

Keywords: travel motivation, motives, Jeffrey’s Bay, Hartenbos, Plettenberg Bay, Amanzimtoti, Margate, marine tourism, factor analysis

1. INTRODUCTION

Tourism comprises the world’s largest industry and beaches (marine tourism) are considered as one of the major attractions of this industry (Phillips & House, 2008:176). In fact, Eagles and McCool (2002) state that the growth rate of marine tourism has exceeded most other forms of tourism. Asafu-Adjaye and Tapsuwan (2008:1122) found that marine tourism is making a significant contribution to the global economy. Basiron (1997:2) and Orams (1999) define marine tourism as “the temporary short-term movement of people to destinations outside their normal environment and activities within a marine setting”. In South Africa marine tourism includes aspects such as ocean and coastal water sport, hotels and restaurants, island and beach resorts, sea sports, recreation, fishing boat operators, cruise ships and charter yacht companies. These activities and
products can be found along South Africa’s coast line of more than 3 000km, stretching from the Namibian coast (washed by the cold Atlantic Ocean) in the northwest to the Moçambique border at Ponta do Ouro in the east (bathed by the warm Indian Ocean) (Myburgh & Saayman, 2001:75; South Africa Government, 2009). The coastline and climatic conditions of South Africa make this country an ideal marine destination, and various people flock to the sunny beaches of South Africa. Harriott (2002:13) indicated that marine tourism does bring numerous benefits for host countries, for example, economic benefits, job creation, development of infrastructure, improvement of conservation, improvement of environmental management and awareness, protection and preservation, to name but a few.

Five of South Africa’s most popular marine tourism destinations on the Indian Ocean coast line form part of this research, namely Hartenbos (most southern destination), Plettenberg Bay, Jeffrey’s Bay, Margate and Amanzimtoti (the most northern destination) (see Map 1). These destinations focus on marine tourism but are also unique in the delivery of the marine experience. Hartenbos forms part of the well known Garden and Whale Route (SA Places, 2009(b)) while Jeffrey’s Bay is home to the international Billabong surfing festival and is rated as one of the best surfing spots in the world (Garden Route, 2008; SA Venues, 2009(a)). Margate and Amanzimtoti are at the heart of the Hibiscus Coast and attract thousands of tourists due to the annual Sardine Run (African Invitation, 2009; SA Places, 2009(a) & (d)). Each is well known for its natural beauty and is one of the most preferred marine destinations for domestic tourists (SA-Venues, 2009(b); SA Places, 2009(a) & (d)). Plettenberg Bay, on the other hand, is regarded as the jewel of the Garden Route and is surrounded by the Outeniqua and Tsitsikamma mountains, and the Outeniqua Forest. Plettenberg Bay is also known as a playground of the rich (SA Places, 2009(e)).

Hui, Wan and Ho (2007:965) indicate that the global tourism industry has become increasingly competitive and that marine tourism, especially, is becoming more saturated (Yoon & Uysal, 2005:46). Therefore, it becomes imperative that the marketing initiatives of destinations should be guided by a thorough analysis of tourist motivation (Yoon & Uysal, 2005:46-47) in order to be successful. Knowledge concerning motivations and the application, thereof, in marketing plans and strategies may enhance competitiveness in the tourism market (Jonker, Heath & du Toit, 2004:1; Pike, 2004:73), ensure long-term profit, survival, and growth of tourism destinations (Saayman, 2006:62). Fodness (1994:555) states that effective tourism marketing is impossible without the understanding of the consumers’ (tourists’) motivations. In this case, what motivates tourists to travel to marine destinations?
Exploring travel motivations is therefore critical in effective market segmentation and it is an important part of any tourism marketing strategy (Slabbert, 2002:16). Further, Saayman and Van der Merwe (2007) state that different tourist attractions or destinations lead to different motives and that travel motives in respect of one destination might not be applicable to another.

The aim of this article is to determine the travel motives of tourists to marine destinations situated on the Indian Coast Line of South Africa. In order to achieve this, the article will be structured as follows: firstly, a review of relevant literature will be discussed, followed by the research method and results of the study. The implications of this study will be followed by conclusions and recommendations.

2. LITERATURE REVIEW

Travel motivation refers to a set of needs that cause a person to participate in a tourist activity (Swanson & Horridge, 2006:672). Geen, Beatty and Arkin (1984) (cited in Chen, Prebensen & Huan, 2008:106) define travel motivations as the operation of inferred intrapersonal processes that direct, activate and maintain behaviour. Motivation is referred to by Pearce (1982) as in Yoon and Uysal (2005:46) as psychological/biological needs and wants, including integral forces that stimulate, direct, and amalgamate a tourist's behaviour and activity. Thus, travel motivation refers to why tourists decide to engage in something, the time they are willing to sustain the activity and how intensely they are going to pursue it (Dörnyei, 1994:274; Mill & Morison, 1985). Motivation also reflects numerous sets of needs that will subsequently affect individuals’ choices in various ways. The fact that individuals do differ, impacts on tourists travel motivations and subsequently will affect individual choice in various ways (Chen, Prebensen & Huan, 2008:107). Park, Reisinger and Kang (2008:161) state that a desire to meet these needs for relaxation triggers a decision to engage in certain behaviour to meet these needs. Marketers in the tourism industry stimulate these individual (tourist) needs by marketing tourism products that meet those needs.

By studying travel motivations, the fundamental starting point in understanding the psychology of tourist travel behaviour is brought to the light (Goeldner & Ritchie, 2003:243). An in-depth literature review was conducted on travel motivation and revealed that there are a range of travel
motives (see Table 1). For the purpose of this research, travel motivations were categorised according to different tourism offerings/products, that is, leisure travel, events and festivals, nature and parks, marine and shopping (Table 1).

<table>
<thead>
<tr>
<th>Researchers</th>
<th>Leisure travel motives</th>
<th>Events and festival travel motives</th>
<th>Travel motives to marine destinations</th>
<th>Travel motives to nature areas and parks</th>
</tr>
</thead>
</table>
• Discovering and evaluating of oneself  
• Recreation and travelling  
• Status  
• Regression  
• Strengthening of family ties  
• Naturalist (those who enjoyed nature surroundings)  
• Knowledge seeking  
• Utilitarian function (punishment, minimisation) | • Utilitarian function (reward maximisation)  
• Safety/comfort seekers  
• Culture/history seekers  
• Novelty/adventure seekers  
• Luxury seekers  
• Cleanliness and safety  
• Facilities, events and costs  
• Natural and historic sites  
• Ego-enhancement  
• Relaxation  
• Socialisation | • Culture  
• Pleasure seeking/fantasy  
• Relaxation  
• Physical attributes  
• Climate  
• Destination attractiveness  
• Adventure  
• Personal attachment  
• Site attributes  
• Personal  
• Education  
• Rural life | • Learning about nature  
• Participation in recreation activities  
• Change from home or work  
• To be free  
• Seeing as much as possible | • Family togetherness/socialisation  
• Site attraction  
• Festival attraction  
• Escape from routine |
• External  
• Socialising  
• Relaxation  
• Family togetherness | | | |
| Tao, Eagles and Smith (2004), Kim, Borges and Chon (2006), Saayman and Van der Merwe (2007), Saayman and | | | | |
Table 1: Summary of research on travel motivations

Table 1 clearly indicates that some travel motivations occur regularly, for example, relaxation, socialisation, novelty, family togetherness and escape. These are somewhat independent of the destinations while others are more destination/product related (learn about nature, photography, climate, culture and festival attributes).

When focussing on travel motivations of marine destinations, the following came to light: Molera and Abaladejo (2007:761) identified five marine travel motives to Murcia (Spain) situated along the Mediterranean Sea, namely nature and peacefulness, physical and cultural activities, family, trip features and rural life. Saayman, Slabbert and Van der Merwe (2009) also identified five travel motivation factors to two marine destinations in South Africa, namely escape and relaxation, destination attractiveness, socialisation, personal attachment, site attributes and trip features. Yoon and Uysal (2005:51) who researched travel motivations of tourists to Northern Cyprus (located in the Mediterranean Sea) identified eight “push” motivational factors (excitement, knowledge/education, relaxation, achievement, family togetherness, escape, safety/fun and away from home and seeing) and nine pull motives (modern atmosphere and activities, wide space and activities, small size and reliable weather, natural; scenery, different culture, cleanliness and shopping, night life and local cuisine, interesting town and village, and water activities). Research conducted by Kozak (2002:224) regarding travel motivations of tourists to Mallorca (Spain) revealed motives such as culture, pleasure seeking/fantasy, relaxation and physical. Kruger and Saayman (2008) found that travel motives of tourists visiting Tsitsikamma National Park, situated on the Indian Ocean in South Africa, were motives such as knowledge seeking, nature experience, photography, escape and relaxation, park attributes and nostalgia.

Again, the analysis of marine travel motives revealed different destinations and products have different travel motives. Saayman et al. (2009) agree and state that the travel motivations of tourists to two marine destinations in South Africa revealed that there are similarities as well as clear differences. This background formed the basis for this research that will assist product owners, government institutions and marketing agencies in developing better marketing strategies for marine tourism destinations situated along the Indian Ocean.
3. METHOD OF RESEARCH

Exploratory research was conducted by means of five surveys distributed at the beaches of Hartenbos, Plettenberg Bay, Jeffrey’s Bay, Margate and Amanzimtoti. The questionnaire was developed by means of a comprehensive literature review and was based on the research by the authors listed in Table 1. Section A focused on the demographic profile of visitors to these marine destinations, while Section B focused on the travel behaviour, with specific reference to travel motivation, of visitors.

Fieldworkers were selected to distribute the questionnaires during the day amongst tourists spending time on the various beaches. In all cases, sampling was based on the willingness and availability of tourists to complete the questionnaires. Two surveys were done in 2007 and 3 surveys in 2008. Table 2 gives a summary of the place of distribution, the number of questionnaires distributed and the number of questionnaires that were included in the final statistical analyses.

<table>
<thead>
<tr>
<th>Marine destination</th>
<th>Date of the survey</th>
<th>Number of questionnaires distributed</th>
<th>Number of questionnaires included in data analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hartenbos</td>
<td>2-6 April 2007</td>
<td>340</td>
<td>202</td>
</tr>
<tr>
<td>Jeffrey’s Bay</td>
<td>4-8 April 2007</td>
<td>250</td>
<td>210</td>
</tr>
<tr>
<td>Plettenberg Bay</td>
<td>26 Sept – 1 Oct 2008</td>
<td>200</td>
<td>153</td>
</tr>
<tr>
<td>Margate</td>
<td>28 Mar – 3 April 2008</td>
<td>350</td>
<td>333</td>
</tr>
<tr>
<td>Amanzimtoti</td>
<td>21 – 28 July 2008</td>
<td>250</td>
<td>237</td>
</tr>
</tbody>
</table>

Table 2: Survey summary

The data for all surveys were captured in Microsoft® Excel®, and the descriptive statistical analyses were performed by using the Statistical Programme for Social Sciences (SPSS 16.0). A total of 1135 questionnaires was used in the final statistical analyses. The statistical analyses included both descriptive analyses and a factor analysis. The latter is explained in more detail in the section that deals with the results.

4. RESULTS

The results comprise two sections - a demographic profile of visitors to the marine destinations, and secondly, motives for visiting marine destinations based on a factor analysis.

Demographic profile and travel characteristics of tourists

Descriptive analysis (Table 3) indicates that a higher percentage of females participated in the survey than males. In terms of age distribution, visitors to marine destinations appear to be middle-aged with the average age being 38. Marine destinations are considered to be family destinations, and these results support this notion. The results indicated that a large percentage of visitors are married, well educated and Afrikaans-speaking. Most tourists to marine destinations originate from Gauteng and the Free State. Research by Petrosillo, Zurlini, Corliano, Zaccarelli and Dadamo (2007:35) who determined a market profile of tourists to marine resorts in Italy, supports the fact that marine tourists are well-qualified and middle aged. The demographic profile of visitors can lead marketers in determining where to find the market.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Percentage: N = 1136</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44%</td>
</tr>
<tr>
<td>Female</td>
<td>56%</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
</tr>
<tr>
<td>&lt; 18</td>
<td>2%</td>
</tr>
<tr>
<td>18-30</td>
<td>22%</td>
</tr>
<tr>
<td>31-40</td>
<td>33%</td>
</tr>
<tr>
<td>41-50</td>
<td>28%</td>
</tr>
<tr>
<td>51-60</td>
<td>8%</td>
</tr>
<tr>
<td>&gt; 60</td>
<td>5%</td>
</tr>
<tr>
<td>Average age:</td>
<td>38</td>
</tr>
<tr>
<td>Language:</td>
<td></td>
</tr>
<tr>
<td>Afrikaans</td>
<td>69%</td>
</tr>
<tr>
<td>English</td>
<td>29%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>73%</td>
</tr>
<tr>
<td>Not married</td>
<td>20%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
<tr>
<td>Province of residence:</td>
<td></td>
</tr>
<tr>
<td>Western Cape</td>
<td>14%</td>
</tr>
<tr>
<td>Eastern Cape</td>
<td>4%</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>2%</td>
</tr>
<tr>
<td>Free State</td>
<td>22%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>33%</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>6%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>5%</td>
</tr>
<tr>
<td>KwaZulu-Natal</td>
<td>5%</td>
</tr>
<tr>
<td>North West</td>
<td>18%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
</tr>
<tr>
<td>No school</td>
<td>2%</td>
</tr>
<tr>
<td>Matric</td>
<td>38%</td>
</tr>
<tr>
<td>Diploma/Degree</td>
<td>38%</td>
</tr>
<tr>
<td>Post graduate</td>
<td>11%</td>
</tr>
<tr>
<td>Professional</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Table 3: Demographic characteristics**

The travel characteristics of tourists to marine destinations revealed that most tourists travel in groups of between four and five people (Table 4). Again, this emphasises the family experience. The statistics showed that the average length of stay at marine destinations is 9 nights with an average spending of R 6 431.81.
Table 4: Travel characteristics

Motives for visiting a marine destination

This section focuses on exploring the underlying patterns of the reported travel motivations by means of a factor analysis.

To determine the appropriateness of principal component analysis (data reduction procedure) for the collected data, a correlation matrix for the motivational data, Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett test of sphericity were examined. The Kaiser-Meyer-Olkin measure of sampling adequacy aims to examine whether the strength of the relationship between variables is large enough to proceed to a factor analysis. The measure obtained was .810, which is highly acceptable. The Bartlett test was found to be significant (p < .00001) and therefore the data reduction by principal components would again be legitimate. A factor analysis with varimax rotation was performed on 16 motivational factors for all five destinations. The varimax rotation method was chosen due to there being very little correlation between factors (see Table 6). The factor analysis was performed to identify the underlying dimensions of the respondents’ motivation to visit these marine destinations. An eigenvalue of 1.0 was used for factor extraction criterion and loadings of .30 were used for item inclusion. This resulted in four factors for travel motivations to marine destinations. The four factors for marine destinations accounted for 51.29% of the total variance.
Factor label | Factor 1: Destination attractiveness | Factor 2: Escape and relaxation | Factor 3: Time usage | Factor 4: Personal attachment
--- | --- | --- | --- | ---
Many activities for my children | .750 |  |  |  
Great accommodation and facilities | .644 |  |  |  
Safe holiday destination | .639 |  |  |  
Various attractions in surrounding area | .556 |  |  |  
Association with language and culture of destination | .524 |  |  |  
Affordable | .518 |  |  |  
Climate | .455 |  |  |  
Distance of the destination | .364 |  |  |  
To relax |  |  |  | .824 
To get away from regular routine |  |  |  | .821 
Family recreation /spend time with someone special |  |  |  | .566 
Explore a new destination |  |  |  | .767 
For events in the area |  |  |  | .718 
Spend time with friends |  |  |  | .548 
Grew up spending my holidays at the destination |  |  |  | .778 
I own a holiday home at the destination |  |  |  | .773 
Cronbach’s Alpha | .722 | .545 | .713 | .511 
Mean Value | 3.42 | 2.90 | 4.16 | 2.13 

Table 5: Factor analysis of travel motives

The factors were labelled according to similar characteristics as follows: Destination attractiveness (Factor 1), Escape and relaxation (Factor 2), Time usage (Factor 3) and Personal attachment (Factor 4). Eigenvalues for these factors ranged from 1.12 to 3.85. Cronbach’s coefficients were also examined for each factor to check the reliability of the data, and to serve as a measure of internal consistency among the items. The Alpha values should be interpreted with caution where a limited number of items (statements) are loaded successfully onto the same factor. All the Cronbach Alpha values were above .4 (see Table 5). The mean values per factor were also calculated, and it is clear that respondents considered the usage of time as very to extremely important (4.16) followed by destination attractiveness (3.42) as important to very important, and escape and relaxation (2.90) and personal attachment (2.13) as less important to important.

Based on the correlation matrix shown in Tables 6, it is evident that these factors are all distinct factors measuring different components of visitor motives.
Correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.000</td>
<td>.092</td>
<td>.284</td>
<td>.198</td>
</tr>
<tr>
<td>2</td>
<td>.092</td>
<td>1.000</td>
<td>.030</td>
<td>.125</td>
</tr>
<tr>
<td>3</td>
<td>.284</td>
<td>.030</td>
<td>1.000</td>
<td>.061</td>
</tr>
<tr>
<td>4</td>
<td>.198</td>
<td>.125</td>
<td>.061</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 6: Component correlation matrix for marine destinations

In the analysis of the results, the following findings can be reported:

Firstly, in terms of studies conducted on travel motives in leisure, event, marine, nature and shopping tourism - relaxation and escape were the most common (see, for example, Crompton (1977); Loker & Perdue (1992); Schneider & Backman (1996); Saayman & Van der Merwe (2007) and Swanson & Horridge (2006)). This study was no exception. The mean value for Factor 2, however, was 2.90 which is low compared to the other factors, but reveals that escape and relaxation are still important motives in tourism, specifically marine tourism.

Secondly, the way tourists use their time was identified as the most important travel motive with a mean value of 4.16. The combination of exploring new destinations, attending events in the area and spending time with family and friends that lead to the motive “time usage” are unique to this study and were not found in any other study conducted.

Thirdly, destination attractiveness is the second most important motive with a mean value of 3.42 and included various aspects such as accommodation and facilities, safety, affordability, climate and so on. These have been labelled by Swanson and Horridge (2006) as tangible resources. The literature review indicated similar motives such as climate (Bansal & Eiselt, 2004), facilities (Jang & Wu, 2006) and destination attributes (Kozak, 2002).

Fourthly, this study identified personal attachment as a motive, which comprised two aspects - growing up with a specific destination as well as owning a holiday, or second, home at the destination. This motive has not been found in similar research, thereby adding a new motive.

Fifthly, most of the motives identified by this research were similar to those found by research conducted in leisure travel, which include both psychological and attraction related motives (see Table 1). However somewhat unique travel motives to nature based products included the learning experience (Bansal & Eiselt, 2004; Tao, Eagles & Smith, 2004; Yoon & Uysal, 2005), participation in activities (Saayman & Van der Merwe, 2007; Saayman & Saayman, 2008) and attractions (Saayman & Van der Merwe, 2007; Molera & Albaladejo, 2007; Kim, Borges & Chon, 2006). Socialising (Backman, Backman, Uysal & Sunshine, 1995; Schneider & Backman, 1996; Lee, Lee & Wicks, 2004), however, seemed more unique as travel motives for events and shopping.

Lastly, as motives tend to be somewhat psychological in nature, this study highlighted the importance of those tangible aspects such as accommodation, activities and attractions, thereby supporting the push and pull theory (Dann, 1977; Crompton, 1979). Pull factors are external forces aroused by the object, product or destination (for example, climate) which encourage tourists to visit a certain destination. Push factors are internal forces, psychological in nature (for example, relaxation) creating the desire to travel. A combination of push and pull factors should therefore be used in marketing strategies to attract visitors.
4. IMPLICATIONS

Based on the results and findings of the research conducted at these marine destinations, the following implications can be identified:

The results give marketers and product developers clear indicators that should be taken into consideration when developing marketing strategies and products. An important indicator is the destination attractiveness for visitors. The latter includes aspects such as the safety of visitors, a variety of activities for children, quality accommodation, and a variety of things to do. The activities could be either on or off the beach.

Further, the results also indicated that visitors wanted to explore new things/destinations and events, as well as to spend time with family and friends. Therefore, in order to remain competitive, marine destinations will have to add new products and experiences to their existing product offerings. This could also imply the re-packaging of existing products and offerings, or the hosting of events, as this also seems to be an effective way to attract marine tourists.

Finally, it seems that, as all five marine destinations offer similar natural products, (for example, good swimming, surfing, fishing, sunbathing and beaches), the challenge lies with man-made products, specifically, how to remain competitive. This aspect of uniqueness is also paramount in the development of a positioning strategy that distinguishes one destination from another. If the results are compared with similar research, the sense that the use of the tourists’ time, and the variety of activities and attractions on offer to them, seem to be the most important results.

5. CONCLUSIONS

The purpose of this research was to determine the travel motives of tourists to selected marine destinations. Results indicated four distinct travel motives, of which some confirm previous findings but additionally, identified unique motives of personal attachment and of time usage. Results also confirmed that motives are product or destination specific, which in turn implies that each destination has its own specific motives. These motives are useful in product development, as well as for developing marketing strategies. The results also indicated that marine tourists are seeking a variety of activities and things to do – much more than compared to other types of tourism products.

One of the major problems experienced in this research was the inconsistent use of descriptors of the motives, and that even common concepts such as relaxation and escape are used to describe different statements. Therefore, this is an aspect that needs attention by researchers across the globe.

REFERENCES


THE SOCIO-ECONOMIC IMPACT OF AFRICA’S OLDEST MARINE PARK

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National Parks (SANParks) in South Africa plays a major role in the tourism industry and has three primary roles, namely to conserve biodiversity, to create tourism and recreational opportunities and to build strong community relations. These parks therefore have a definite socio-economic impact on adjacent communities although little is known regarding this impact. The main aim of this paper is to determine the socio-economic impact of Africa’s oldest marine park, namely the Tsitsikamma National Park, on the region. This was done by conducting three surveys during April 2008: a visitor’s survey (156 questionnaires), a community survey (132 questionnaires) and a business survey (11 questionnaires). It was found that the park has a positive economic impact and that the community is also positive towards the park. The results also indicated that the Tsitsikamma National Park contributes more to the local economy when compared to the Karoo National Park due to its marine status and the fact that the park is located in a tourism area. For a greater impact, however, the park should expand its recreation activities, and communication with the local community could also be improved.

Keywords: Socio-economic impact, tourism, community, partial multiplier modelling, regional economy, marine tourism, national parks.

1. INTRODUCTION

Situated on the Garden Route in the Eastern Cape Province in South Africa, is Africa’s oldest marine park, known as the Tsitsikamma National Park (TNP). In 1964, the park was proclaimed as the first Marine National Park in Africa. Tsitsikamma means “place of much water” and integrates 80km of rocky coastline (marine life and a variety of fauna and flora) (SANParks, 2008). As a very popular ecotourism attraction in South Africa, the park attracts a considerable number of tourists annually and it has an influence on the economic and social well-being of the surrounding community. This park, as well as all the other National Parks in South Africa, has three primary objectives, namely to conserve the biodiversity of the country, to maintain a relationship of community upliftment and capacity building among people living in the areas neighbouring the Parks, and to provide a tourism and recreational outlet that allows people to experience and enjoy the wonders of the Parks.
The second and third objectives are the motivation for undertaking this research, as the socio-economic impact of the Tsitsikamma National Park has not yet been determined. In fact, no socio-economic study has been done for marine parks in South Africa. Telfer and Sharpley (2008:6) refer to socio-economic development as the creation and improvement of wealth and employment as well as accessibility to resources. It therefore signifies a relationship between society and the economy and a socio-economic study therefore determines this relationship.

Myburgh and Saayman (2002:259) already stated in 2002 that it is difficult to understand and incorporate the role of local communities in park structures, even though the importance thereof has long been realised. Conservation played a major role in the sustainability of the parks; however, parks have now become more reliable on tourism to be sustainable and this has an impact on the community, whether it is positive or negative. A higher level of community participation is needed where the community interacts with the environment (Myburgh & Saayman, 2002:267) and hopes to reap certain benefits from these interactions.

According to Hall and Richards (2000:103), the “rights” of the communities, such as participation in decision-making, sharing benefits of development such as job opportunities and enhancement of quality of life because of environmental improvements are to be acknowledged. Streuders (2008:113-114) found that not all communities understand the relevance of a national park and that without the input of the community, park management will not be aware of their needs and how to fulfill these needs.

It is therefore important to determine the socio-economic impact of the Tsitsikamma National Park as this will shed light on the current relationships between the community and park management as well as provide an indication of the economic contribution of the park towards the region and community.
2. LITERATURE REVIEW

Socio-economics, as indicated in the introduction, is the study of the relationship between economic activity and social life. The aim of a socio-economic study is to measure socio-economic development (see Figure 1), usually in terms of improvements in metrics such as Gross Domestic Product (GDP), life expectancy and employment opportunities (Anon 2006). Saayman, Saayman and Ferreira (2009:1) indicated that from a socio-economic point of view, there are four major relationships to be managed and therefore determined. These relationships are captured in Figure 1 and add to the importance and relevance of conducting a socio-economic study. Streuders (2008:45) and Van der Merwe (2008:44) highlighted that it is of utmost importance that the role players in Figure 1 are continuously in consultation with one another to avoid problems and conflict and to encourage socio-economic development, which may ultimately contribute to the quality of life of communities, tourists and businesses. It is therefore not only about the economic contribution of a park, but also the contribution the park makes towards the community’s quality of life (Saayman & Saayman, 2006a:3) and how these are integrated with the three primary objectives of National Parks.

Figure 1: Conceptual framework for socio-economic research in National Parks

Figure 1: Conceptual framework for socio-economic research in National Parks
When managed well within the socio-economic framework, tourism has various positive effects on communities, including economic development, additional employment, the enhancement of community image, improved community-tourist relationships and cultural opportunities, as well as increased community participation (Shone & Parry, 2004:54). However, Tiyce and Dimmock (2000:223-229) indicate that negative social impacts may include transformation in community characteristics and image, an increase in noise pollution, and overcrowding, to name but a few. In terms of the economic impact, money spent by tourists has a multiplier effect within the local and regional economy, and income generated by the park can help in funding other activities, such as nature conservation. On the negative side, the jobs created are often poorly paid and various leakages may exist that do not benefit the community.

The Tsitsikamma NP is situated in a rural area and therefore the level of economical benefits depends on the amount that remains in the area. Because of this, leakages in the form of imported skills and goods are of concern, for it will reduce these benefits. In determining the magnitude of the Park’s economic impact, determinants such as location and size of park, the length of stay (tourists), the number of tourists and how much they spend are important, for they influence these leakages (Saayman & Saayman, 2004:638; Saayman & Saayman, 2006c:570).

Inevitably, local communities experience social and cultural changes because of tourism development. As quoted by Telfer and Sharpley (2008:199), previous studies by Dogan (1989); Ap and Crompton (1993); Costa and Feronne (1995); Williams and Lawson (2001) as well as Kuvan and Akan (2005) found that local communities’ attitudes towards tourists could differ from being welcoming to discardedness. These studies investigated how members of small communities perceived tourism, as well as what they consider important, such as personal values. Most of these studies found that tourism was seen as positive and that community members had favourable attitudes towards tourism development. However, it was also found that community members had a concern for the negative impacts of tourism. Green (2005) also found that changes within the community due to tourism were also perceived as negative and the focus of future tourism development should be on sustainable development. Community involvement was identified as a key success factor for successful tourism development.

Samuelsson and Stage (2007), Mahony and Van Zyl (2002), and Gössling (2001) conducted studies concerning the economic impacts of tourism on the community and local economy. The findings indicated that tourism did have a positive effect on the local communities by improving their livelihood. According to the results, small-scale, high-value tourism is important to maximise a stable income over the long term. Therefore, the local communities need tourism and tourism needs the local communities’ support to contribute effectively and to be sustainable.

Other socio-economic studies that have been conducted include that of the Okavango Delta in Botswana by Mbaia (2003), as well as that of Turco, Swart, Bob and Moodley (2003) regarding the socio-economic impacts of sport tourism in Durban. According to these studies, tourism has contributed positively towards the development of communication facilities, infrastructure, and increased tourist-flow. Therefore, for successful and sustainable tourism development to take place, it is important to focus on the social equity, economic efficiency and ecological sustainability tourism has on the local communities. Loader (1994:143) and Pelser (2003:164) state that in South Africa social involvement is an integral part of conservation. In the case of residents of Kepulauan Seribu Marine Park, Del Este in the Dominican Republic, Macleod (2001:221), and Fauzi and Buchary (2002:167) suggest that poverty should be improved, residents should be the main concern and park management should be based on the agreement and involvement of all stakeholders (Saayman & Saayman, 2006b:77).
In terms of socio-economic studies conducted at national parks in South Africa, the literature review indicated two, namely the Karoo National Park (Saayman, Saayman & Ferreira, 2009) and the Addo Elephant National Park (Saayman & Saayman, 2006a). Both these studies found that the parks had a major impact on employment, production and general income creation in the surrounding areas. It has led to the establishment of businesses and tourism, where particularly protected areas contribute to the development of the regions. According to Saayman and Saayman (2006a:631), and Saayman, Saayman and Ferreira (2009:6), 35% of businesses were established directly as a result of the Addo Elephant National Park, but only 4% of businesses in Beaufort West owe their existence to the Karoo National Park. However, the concern still exists that rural areas usually face high leakages and the local economy does not benefit to its full potential.

However, no similar study was found that was conducted at a marine park.

3. **METHOD OF RESEARCH**

Three surveys were conducted to achieve the goal of this study: a community survey (among the local residents of Natures Valley and Storms River Village) to measure the social impacts; a business survey (including permanent local businesses in and around the park), and a visitor survey (tourists visiting the park) to measure the economic impacts that increase as a result of the park. Secondly, partial multipliers were derived through a process of iteration to determine the economic impact of the Tsitsikamma National Park. Vaughan, Farr and Slee (2000) proposed proportional multiplier analysis in determining local economic impacts of visitor spending to a rural national park. Two methods can be used to derive these multipliers, namely a process of iteration or a partial input-output model. Since the number of firms is very limited in the study area, a process of iteration was used, where the spending is traced through the local economy as tourists buy goods, firms buy stock from suppliers and pay employees. The multipliers thus represent the change in sales and income due to tourist spending.

Thirdly, descriptive analysis was used to determine the community’s perceptions concerning the Tsitsikamma National Park and the effect of the park on the community’s quality of life.

Six post-graduate students assisted in distributing the questionnaires to the selected groups during the April holidays from 25-29 March 2008. These field workers distributed the questionnaires and collected the completed questionnaires later in the evening. The data was then coded and captured on Microsoft® Excel® after which the latter SPSS (version 15) was used in analysing the data. Descriptive analyses were done in order to provide preliminary insights into the nature of the responses obtained, as reflected in the distribution of the values of each variable of interest (Tustin, Ligthelm, Martins & Van Wyk, 2005:341).

3.1 **The survey**

3.1.1 **Survey one: Community survey**

Community data was obtained be means of a structured questionnaire based on the social-impact measuring instrument developed by Fredline, Deery and Jago (2003:29). This instrument was adapted according to the needs of this nature-based product as compared to festivals for which the instrument was originally designed. Residents’ perceptions (main variables for the purpose of this study) were measured using a 3- or 4-point Likert scale. Independent variables, such as community attachment, participation and length of stay were also measured by means of closed-ended questions.
There are approximately 360 households (91 permanent) in Natures Valley and 470 in Storms River Village and they can therefore be considered as small towns. This led to the decision to include all households in the sample frame. Therefore, this part of the study is based on probability sampling where each element in the population has a known, non-zero probability of being included in the sample (Tustin et al., 2005:344). Availability sampling was therefore implemented and residents who were willing and available to complete the questionnaire formed part of the final sample. In total, 132 questionnaires were completed, even though field workers experienced problems such as inaccessible homes and vacant houses.

3.1.2 Survey Two: Business survey

A similar questionnaire to the one that was used for determining the socio-economic impact of the Karoo and Wilderness National Parks was implemented. Research boundaries were determined and therefore this survey included businesses in a 25km radius around the Tsitsikamma NP, therefore including businesses in Storms River and Nature’s Valley. Again, availability sampling was applied and all businesses in the specified area were part of the sampling frame. Only those, however, who were willing and available to complete the questionnaire, participated. Thirty-five (35) questionnaires were distributed (n=35) to businesses that could be identified as a business in the survey area. In total eleven (11) questionnaires were completed and used.

3.1.3 Survey Three: Visitors survey

The visitors’ survey was also done by means of a questionnaire. This questionnaire has been used since 2001 in various National Parks focusing on the visitors to these parks. Questions focused on demographic aspects and expenditure in order to obtain the socio-economic information needed to conduct this study. A convenience sampling was drawn from the visitors to the Tsitsikamma National Park from 25-29 March 2008. Field workers distributed the questionnaires among overnight visitors and 156 questionnaires were completed for the purpose of this study. The number of questionnaires is deemed representative of the total population as the surveys that were conducted since 2001 were done in different months and therefore different seasons. Saayman and Fouche (2007:26) also indicated that the profile of visitors to the Tsitsikamma National Park remained consistent since 2001 and therefore the sample could be seen as representative.

4. RESULTS

The results are divided into two sections. Firstly, the social impact results that were obtained through the community survey, and secondly, the economic impact results that were obtained from both the business and visitor surveys.

4.1 Social impacts

Sustainable socio-economic development is influenced by community perceptions. It is important that the community members of Nature’s Valley and Storms River are positive towards the Park and the management thereof. Table 1 reflects the results of the influence of the park on the community by using a scale of -3 being very negative and 3 being very positive. Respondents indicated that the TNP has a very positive impact on the community of Nature’s Valley and Storms River (68%). The TNP also affects the community’s personal quality of life in a very positive manner (65%). It is therefore clear that the Park has a very positive influence on the community.
Table 1: The influence of the Tsitsikamma National Park on the community

When considering specific perceptions (see Table 2) of the community, respondents indicated on a positive note that the Park contributes to the increased number of tourists visiting the area (81%), sustains the environment (80%) and conserves the natural resources (80%). On a negative note, however, community members feel that, due to the Park, the prices of some goods and services have increased (76%) and that less parking is available during high season (71%). In general, the TNP is contributing to the development of the area and community members consider the Park as an asset. It is, however, imperative to get community members more involved and park management should continue to maintain positive relationships with these communities.

<table>
<thead>
<tr>
<th>SOCIAL INDICATORS</th>
<th>Totally disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Totally agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The appearance of the area has improved</td>
<td>6%</td>
<td>20%</td>
<td>56%</td>
<td>18%</td>
</tr>
<tr>
<td>Nature resources of the area are conserved</td>
<td>3%</td>
<td>11%</td>
<td>59%</td>
<td>21%</td>
</tr>
<tr>
<td>Noise levels in the area have increased</td>
<td>16%</td>
<td>37%</td>
<td>42%</td>
<td>5%</td>
</tr>
<tr>
<td>Employment opportunities in Nature’s Valley/Storms River have increased</td>
<td>9%</td>
<td>18%</td>
<td>57%</td>
<td>16%</td>
</tr>
<tr>
<td>The range of things to do in Nature’s Valley/Storms River has increased</td>
<td>8%</td>
<td>25%</td>
<td>51%</td>
<td>16%</td>
</tr>
<tr>
<td>The number of people in the area has increased</td>
<td>5%</td>
<td>16%</td>
<td>58%</td>
<td>21%</td>
</tr>
<tr>
<td>Rowdy and delinquent behaviour has increased</td>
<td>14%</td>
<td>39%</td>
<td>33%</td>
<td>14%</td>
</tr>
<tr>
<td>Property values in the area have increased</td>
<td>10%</td>
<td>25%</td>
<td>48%</td>
<td>17%</td>
</tr>
<tr>
<td>Crime has increased</td>
<td>19%</td>
<td>35%</td>
<td>36%</td>
<td>10%</td>
</tr>
<tr>
<td>Participation in community activities has increased</td>
<td>11%</td>
<td>24%</td>
<td>56%</td>
<td>9%</td>
</tr>
<tr>
<td>Opportunities to relax have increased</td>
<td>11%</td>
<td>27%</td>
<td>53%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>8%</td>
<td>16%</td>
<td>53%</td>
<td>23%</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Prices of some goods and services have increased</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The pride that Nature’s Valley/Storms River residents have in their town has improved</td>
<td>15%</td>
<td>21%</td>
<td>50%</td>
<td>14%</td>
</tr>
<tr>
<td>The overall cost of living has increased</td>
<td>10%</td>
<td>28%</td>
<td>41%</td>
<td>21%</td>
</tr>
<tr>
<td>Litter in the area has increased</td>
<td>17%</td>
<td>31%</td>
<td>37%</td>
<td>15%</td>
</tr>
<tr>
<td>Damage to the environment has decreased</td>
<td>12%</td>
<td>23%</td>
<td>50%</td>
<td>15%</td>
</tr>
<tr>
<td>Opportunities to meet new people have increased</td>
<td>8%</td>
<td>21%</td>
<td>57%</td>
<td>14%</td>
</tr>
<tr>
<td>Opportunities for local business have increased</td>
<td>10%</td>
<td>27%</td>
<td>51%</td>
<td>12%</td>
</tr>
<tr>
<td>The number of tourists visiting Nature’s Valley/Storms River has increased</td>
<td>6%</td>
<td>13%</td>
<td>58%</td>
<td>23%</td>
</tr>
<tr>
<td>Excessive drinking and/or drug use has increased</td>
<td>17%</td>
<td>38%</td>
<td>38%</td>
<td>7%</td>
</tr>
<tr>
<td>The number of people moving to Nature’s Valley/Storms River permanently or buying holiday homes here has increased</td>
<td>12%</td>
<td>19%</td>
<td>56%</td>
<td>13%</td>
</tr>
<tr>
<td>Public funding for community activities has increased</td>
<td>12%</td>
<td>34%</td>
<td>46%</td>
<td>8%</td>
</tr>
<tr>
<td>The rights and civil liberties of local residents have increased</td>
<td>16%</td>
<td>39%</td>
<td>38%</td>
<td>7%</td>
</tr>
<tr>
<td>Roads and public facilities are better maintained</td>
<td>23%</td>
<td>23%</td>
<td>47%</td>
<td>7%</td>
</tr>
<tr>
<td>Interactions between locals and tourists have improved</td>
<td>15%</td>
<td>20%</td>
<td>59%</td>
<td>6%</td>
</tr>
<tr>
<td>Facilities available to local residents have improved</td>
<td>14%</td>
<td>34%</td>
<td>47%</td>
<td>5%</td>
</tr>
<tr>
<td>Social and moral values have improved</td>
<td>16%</td>
<td>36%</td>
<td>42%</td>
<td>6%</td>
</tr>
<tr>
<td>The natural resources of the area are being over-used</td>
<td>18%</td>
<td>35%</td>
<td>42%</td>
<td>5%</td>
</tr>
<tr>
<td>Property prices have increased</td>
<td>10%</td>
<td>22%</td>
<td>53%</td>
<td>15%</td>
</tr>
<tr>
<td>More investors are focusing on development in Nature’s Valley/Storms River</td>
<td>9%</td>
<td>19%</td>
<td>57%</td>
<td>15%</td>
</tr>
<tr>
<td>Investment opportunities are limited</td>
<td>11%</td>
<td>38%</td>
<td>44%</td>
<td>7%</td>
</tr>
<tr>
<td>The natural environment has been sustained since the establishment of the</td>
<td>7%</td>
<td>13%</td>
<td>61%</td>
<td>19%</td>
</tr>
</tbody>
</table>
During high season the availability of parking decreases by 8%, 21%, 53%, and 18%.

During high season traffic congestion in the area increases by 7%, 25%, 56%, and 12%.

During high season the turnover for local businesses increases by 9%, 21%, 52%, and 18%.

<table>
<thead>
<tr>
<th>Perception</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of parking</td>
<td>8%</td>
<td>21%</td>
<td>53%</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic congestion</td>
<td>7%</td>
<td>25%</td>
<td>56%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnover for local businesses</td>
<td>9%</td>
<td>21%</td>
<td>52%</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Perceptions concerning TNP

4.2 Economic impacts

Visitors to the Tsitsikamma National Park can be grouped into two broad categories, namely day visitors and overnight visitors. Since the Park offers both camping facilities and chalets, the overnight visitors are thus further divided into campers and visitors who overnight in chalets. Table 3 indicates the total guest numbers, as well as the overnight visitors in terms of both camping and chalets. It should be noted that the camping numbers are in person nights sold, while the chalets are in unit nights sold – indicating that there might be more than one person staying in a chalet.

What is also evident from Table 3 is that there has been a steady decline in visitor numbers from 2003 to 2006, but overall visitor numbers seem to have turned around again in 2007. The decline can mainly be ascribed to a decline in chalet unit nights sold until 2005, while 2006 showed a huge decline in camping nights sold. In this case, 2006 was clearly an atypical year in the Park’s history. It is also interesting to note that camp person nights and chalet unit nights sold for 2007 compare very well to those of 2003. Yet the total visitor numbers were much higher in 2003, which might be an indication that people are travelling in smaller groups.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Guests</th>
<th>Camp Person Nights</th>
<th>Chalet Unit Nights</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>203 678</td>
<td>43 562</td>
<td>24 580</td>
</tr>
<tr>
<td>2004</td>
<td>200 840</td>
<td>42 001</td>
<td>23 972</td>
</tr>
<tr>
<td>2005</td>
<td>180 231</td>
<td>50 876</td>
<td>22 655</td>
</tr>
<tr>
<td>2006</td>
<td>162 549</td>
<td>38 890</td>
<td>23 038</td>
</tr>
<tr>
<td>2007</td>
<td>185 116</td>
<td>49 354</td>
<td>24 568</td>
</tr>
<tr>
<td>2008</td>
<td>177 722</td>
<td>60 236</td>
<td>24 655</td>
</tr>
</tbody>
</table>

Table 3: Visitor numbers to the Tsitsikamma National Park (year ending March 2008)

The visitor survey revealed that campers visiting the Tsitsikamma National Park travel in groups of average size 3.4, while visitors staying in chalets travel in groups of average size 3.6. This information is valuable since camping numbers are in “person nights”. This is also an interesting observation, since campers generally tend to travel in larger groups when visiting other national parks.
The visitor survey was again consulted to determine the spending by tourists. Spending has been grouped into the selected sectors used in the iteration process. According to the survey, campers spend on average R2 707.45 while staying at the Tsitsikamma National Park. This amounts to R530.87 per group per day. Spending of chalet tourists is on average R3 194.80 per group, exceeding that of campers, and results in a spending per day of R887.44 per night per group. The spending patterns of campers differ from those of visitors in chalets, with campers spending a relatively higher percentage on food and restaurants than visitors in chalets do (Table 4). However, for both campers and chalet visitors, spending on accommodation and food and restaurants amounts to approximately 80% of total spending, with very little being spent on curios. Note that transport to the Park is excluded from the analysis, since it cannot be certain where the car has been filled or to which company transport costs accrue.

<table>
<thead>
<tr>
<th>SPENDING CATEGORY</th>
<th>VISITORS CAMPING</th>
<th>%</th>
<th>VISITORS IN CHALETS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation</td>
<td>R1 235.87</td>
<td>45.6%</td>
<td>R1 869.38</td>
<td>58.5%</td>
</tr>
<tr>
<td>Food and restaurants</td>
<td>R 855.06</td>
<td>31.6%</td>
<td>R 711.20</td>
<td>22.3%</td>
</tr>
<tr>
<td>Tourism services</td>
<td>R 258.91</td>
<td>8.7%</td>
<td>R 244.14</td>
<td>9.4%</td>
</tr>
<tr>
<td>Retail</td>
<td>R 235.14</td>
<td>8.7%</td>
<td>R 300.70</td>
<td>9.4%</td>
</tr>
<tr>
<td>Transport</td>
<td>R 122.46</td>
<td>4.5%</td>
<td>R 69.38</td>
<td>2.2%</td>
</tr>
<tr>
<td>Total</td>
<td>R2 707.45</td>
<td>100%</td>
<td>R3 194.80</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4: Spending per visitor group according to categories

Approximately 74% of respondents indicated that they also spend money in the area outside the Park. The businesses most visited by the respondents are petrol stations and general dealers (retail/food), restaurants and the bottle store.

SANParks provided the income and expenditure account for the Tsitsikamma National Park for the year ending March 2008. According to this account, expenditure, excluding depreciation, amounted to approximately R15 million. A rough breakdown of these costs reveals that the highest spending item is personnel (56.5%), followed by operational costs (31%), and maintenance (12.5%). To allocate these cost items to the various sectors in the model, some assumptions are made, including that 90% of operational expenses do not take place in the area surrounding the Park, and the remainder is bought from retailers; only 50% of maintenance cost accrues to the local economy and is equally divided between retail and other service providers (such as electrical services); no finance cost accrues to the local area since the bank is located in Plettenberg Bay.

Since unit nights already exclude the problem of “spending per person” versus “spending per group”, only the numbers of campers are divided by the average group size for campers (3.4) and the average length of stay (5.1 nights), to estimate the camper groups. According to this method, 3 474 camper groups visited the Park in 2007/8. To determine the number of chalet visitors, the unit nights sold are divided by the number of days that a group stays (3.6). The result is 6 849 groups. Table 5 indicates the magnitude of visitor spending, which was calculated by making use of the above estimates and the average spending per visitor group, as indicated in Table 4. In the calculation of the multipliers, the transport cost is omitted, since the nearest service station lies outside the study area. Therefore, the spending in the Table below is spending without any transport cost. It can be seen that visitor spending is estimated at approximately R30.4 million.
### Table 5: Estimated total expenditure by visitors (2008)

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>NUMBER OF GROUPS</th>
<th>AVERAGE SPENDING PER GROUP</th>
<th>TOTAL SPENDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalets</td>
<td>6 849</td>
<td>R3 125.42</td>
<td>R21 406 001.58</td>
</tr>
<tr>
<td>Camping</td>
<td>3 474</td>
<td>R2 584.99</td>
<td>R8 980 255.26</td>
</tr>
<tr>
<td>Total</td>
<td>10 323</td>
<td></td>
<td>R30 386 256.84</td>
</tr>
</tbody>
</table>

As suggested by Vaughan et al. (2000), two methods can be employed to determine the impact on the local economy, namely iteration and matrix inversion. The authors decided to use iteration, since the local economy surrounding the Tsitsikamma National Park is very small and has no municipal, manufacturing or wholesale sectors. In terms of output, one additional tourist group (change in demand) in each category creates the following additional output (Table 6). The multipliers created by the iteration process are in line with those determined for the Addo Elephant National Park, but the multiplier is much smaller than that for the Karoo National Park. The latter is expected since the surrounding towns near Tsitsikamma are less diversified and industrially developed than Beaufort West (in the case of the Karoo National Park).

### Table 6: Output and Income multipliers

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>CHANGE IN DEMAND</th>
<th>CHANGE IN OUTPUT</th>
<th>MULTIPLIER</th>
<th>CHANGE IN INCOME</th>
<th>MULTIPLIER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalet</td>
<td>R3 125.42</td>
<td>R3 455.16</td>
<td>1.105</td>
<td>R934.35</td>
<td>0.30</td>
</tr>
<tr>
<td>Camp</td>
<td>R2 584.99</td>
<td>R2 869.16</td>
<td>1.110</td>
<td>R813.52</td>
<td>0.32</td>
</tr>
</tbody>
</table>

To determine the total effect on income (direct, indirect and induced), the process had to be expanded to include the effect of household spending and wages. The assumption was made that the consumption pattern of locals in the study area is similar to that of the National consumption pattern (as defined in the 2005 nationwide input-output table). It is evident that spending directly translates into income for a business, and as this business expands its production, the income of other businesses also expands. This process captures the direct and indirect effects of income for businesses. Yet, not all income that businesses receive translates into income for consumers. The income is used to buy stock, pay for operational expenses and services and thereafter to pay labourers and, hopefully, to provide profits. What is sought is the latter – in other words, how does this translate into income for consumers (households) in the Tsitsikamma area? The results of the analysis are indicated in Table 7.

The income multiplier generated by the iteration process for people holidaying in chalets and for campers, is in line with that found for the Addo Elephant National Park, but it is lower than the income multipliers of the Karoo National Park. It is interesting to note that the effect of one camping group is larger than that of tourists staying in chalets. One of the reasons might be that campers spend money on a wider variety of products and services in the local economy.

While these estimates reflect the spending by visitors, the spending of the Park in its operations is not yet reflected. If a similar process is repeated for Park expenditure, the output multiplier for Park expenditure is 1.10, while the income multiplier is 0.27. Yet these income effects now exclude the income paid to its employees by the Park. Therefore, the total income effect of Park expenditure is adapted to include both the direct, indirect and induced income effects of Park expenditure. The total impact of the Park on the local economy is indicated in Table 7.
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Table 7: Total impact of the Tsitsikamma National Park on the local economy

The years of existence of the different businesses provide a good indication of how business has developed in the region. Isolating the influence of the Park is a non-accomplishable task, since tourist activity along the Garden Route where the park is located has increased significantly and the area is renowned for its scenic beauty and tourism potential. However, it is interesting to note that none of the businesses in the area is older than the Park. It is evident that the tourism service industry (especially recreational activities in the area) only started to boom in the past few years. Many businesses indicated that they rely heavily on tourist spending (see Table 8 below), as could be expected, since the area boasts a thriving tourism destination for both locals and foreigners. Table 8 presents a breakdown of the businesses in the area that completed the business survey, as well as an indication of the employment levels and the number of permanent versus part-time personnel.

Table 8: Breakdown of businesses, employment and other ratios

On average, accommodation establishments sell 81% of their business to tourists and 19% to locals. It should be remembered that some of the accommodation units also offer other products (such as a restaurant, or small retail outlet), which may contribute to the relatively high percentage of turnover ascribed to locals. Tourists are also the main customers of tourism and recreation services, while restaurants, food stores and retailers are reliant on both tourist and local business for their existence. This is indicated in Table 6 and it again highlights the importance of the tourism industry as a
source of employment and income in the local economy surrounding the Tsitsikamma National Park.

Regrettably, it is difficult to determine with any accuracy the exact number of jobs that can be ascribed to the existence of the Tsitsikamma National Park, because not all businesses in the area were willing to complete the questionnaire and some businesses did not indicate the percentage turnover they ascribe to the Park being in the vicinity.

The accommodation establishments indicated that they owe 35% of their turnover to the Park, while 12% of retail turnover is due to the Park. Due to a lack of additional information, the authors assume that the same percentages that were indicated in previous studies can be applied to Tsitsikamma for the restaurant (7.5%) and tourism and recreation services (33.3%). If this is taken as an indication of the number of employment opportunities created due to the Park, it can be concluded that the Park led to 44 additional job opportunities in the businesses surveyed (presuming a linear relationship between turnover and employment). The National Park alone employs 86 people.

This survey captured 157 beds as part of the accommodation sector, while the Tourism Association indicates that there are 620 beds available. Thus, approximately 25% of the accommodation products were surveyed. If this were true for all the business sectors, extrapolating the employment results would indicate that 176 additional jobs were created by the Tsitsikamma National Park. With the Park employment, total employment is thus 262. Seen in the light of there being 561 households in Storms River and Nature’s Valley, it can be concluded that the tourism industry, sparked by the Tsitsikamma National Park, provides employment opportunities for approximately 46.7% of all the households. This shows that the area is very reliant on tourism.

5. IMPLICATIONS

Based on this research, the following implications can be identified.

Firstly, the results indicate that by protecting marine areas national parks could have a similar impact on surrounding communities that benefit communities, conservation, tourists and businesses and that a marine park such as the one under investigation has a bigger economic impact than that of the Karoo National Park.

Secondly, the communities bordering this park have a positive perception about the park; however, improved communication structures are recommended in order to improve community involvement.

Thirdly, the Park has directly contributed to the existence of 25% of the businesses in Nature’s Valley and Storms River, which is higher than the 4% for the Karoo National Park, but lower than the 35% for the Addo National Park. However, a much higher percentage of businesses indicated that tourism activity contributes significantly to their turnover. This might be an indication that the businesses in Nature’s Valley and Storms River underestimate the impact that the Park has had on their activities.

Fourthly, in order to increase the socio-economic impact, it is important to increase tourist activities as well as to increase tourists’ length of stay. More marine activities could be introduced since the park does not offer much in this regard.

Fifthly, the Park is achieving its goals of conservation, creating economic opportunities and getting the community involved. From the results, it appears that the Park has a balanced approach in terms
of its three main objectives. What is clear is that the area is dependent on tourism and that the Park contributes greatly. The Park can therefore be seen as the draw card/stimulator of development.

Lastly, marine conservation is highly valued by the community; therefore, it should be maintained by ensuring quality water, natural habitats for animals and a pollution-free environment. These are aspects that one expects national parks to contribute towards.

6. CONCLUSIONS

The purpose of this research was to determine the socio-economic impact of the Tsitsikamma National Park on the local communities. From the results, it has been confirmed that the Tsitsikamma National Park has a significant socio-economic impact on the communities of Nature’s Valley and Storms River Village. It has therefore also been confirmed that marine destinations can have a significant impact from an economic, social and conservation point of view. Nevertheless, this can only be achieved by maintaining high standards of conservation, effective communication and participation between role players. This research was the first of its kind at a marine national park and highlighted the fact that little research in this regard has been done. Therefore, more research at other national parks is required in order to draw comparisons.

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TOURIST INJURIES ON U.S. NATIONAL SEASHORES

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ABSTRACT

National Seashores in the United States consist of 10 beaches that are federally designated as being of natural and recreational significance. Covering a total area of 1,938.4 km² and administered by the U.S. National Park Service, National Seashores reported 15.9 million visitors in 2008. Maintaining the health and safety of this many visitors to National Seashores is a challenge for the National Park Service as National Seashores account for some of the highest injury rates within the agency and the most costly injury-related tort claims. This study profiles the injury scenario at Padre Island National Seashore (Texas) and Cape Hatteras National Seashore (North Carolina). The most common injury at Padre Island involves children stung by jellyfish and Portuguese Man-O-War. The most common incidents at Cape Hatteras are the result of rip currents and other water-based activities.

Keywords: Tourist, Beach, Injury, National Seashore

INTRODUCTION

Beaches are popular tourist destinations (Ballantyne, Carr & Hughes, 2005; Wearing, 2003). Popular for activities such as swimming, snorkeling, diving, sun tanning, and surfing, beaches have spurred the development of tourist resorts and vacation homes and are recognized as a key driver of tourist economies (Wilks & Davis, 2003; Preston-Whyte, 2002; Houston, 2002; Baldwin, 2000; Meyer-Arendt, 2001; Shackley,1999). Unfortunately, despite their popularity and perception as places of leisure, sport, and enjoyment, beaches are also an environment comprised of numerous hazards and potential danger to the unsuspecting tourist (Ballantyne et al., 2005; Morgan, 2006). Research investigating beach safety and tourist issues in the coastal beach environment is growing. For example, Wilks et al. (2005) described drowning as the second leading cause of injury death to tourists in Queensland, Australia, and discussed the value of life-saving services focusing specifically on visiting tourist populations. Lushine, Fletemeyer, and Dean (1999) found the majority of beach drowning deaths in the State of Florida, USA, to be rip current related and Staines, Morgan, and Ozanne-Smith (2005) recently concluded that the majority of beach deaths in Victoria, Australia, resulted from water submersion incidents. Moreover, the risks and injuries associated with tourists interacting with coastal marine wildlife such as jellyfish, stingray, sea urchin, sharks, and fish are described by Harrison et al. (2004) and Taylor, Ashby, and Winkel (2002), the risks and injuries associated with tourists involved in ocean and beach sport-related activities in Hawaii and Australia were discussed by Hartung et al. (1990) and Ashby and Morgan (2004), and the acute injuries and chronic disabilities specifically resulting from surfing injuries were described by Taylor et al. (2004).
In the United States a National Seashore is an area federally designated as being of natural and recreational significance. At present there are 10 National Seashores administered by the U.S. National Park Service with a total area of 1,938.4 km². These 10 seashores are also popular tourist destinations that reported a cumulative total of 15.9 million visitors in 2008 (National Park Service, 2008). Unfortunately, while National Seashores are valued by tourists for their natural and recreational significance, what is less understood about these locations is the role they play in injuries to visiting tourists. To address this lack of knowledge, the aim of this paper is to identify the trends and distribution of tourist injuries on two National Seashores and describe the risk management strategies presently in place to mitigate negative tourist health experiences on the beach.

METHODS

A retrospective analysis was conducted of all visitor incidents reported at Padre Island National Seashore (Texas – Gulf of Mexico) and Cape Hatteras National Seashore (North Carolina – Atlantic Ocean) during 2006 and 2007. Following a reported injury, case incident reports are filed by responding park rangers. These reports include information about the date, time, incident location, and the age, gender, nationality, and number of visitors involved in the incident. The incident report also includes a description of the environment and conditions at the scene of the incident, the visitor activity at the time of the incident, the nature and severity of the injury incurred by the visitor, a narrative description of the incident, and the actions taken in response to the incident by park rangers and other associated personnel. The data collected from each incident report was entered into a spreadsheet and all calculations were performed using SPSS (v. 15.0).

RESULTS

Over the two year period there were 280 identified incidents at Padre Island National Seashore and 220 at Cape Hatteras National Seashore. These numbers include three reported fatalities at Padre Island and 12 reported fatalities at Cape Hatteras. The fatalities at Padre Island were the result of two drowning incidents and one motor vehicle crash. Seven of the fatalities at Cape Hatteras were drowning related to rip currents and the remaining six were the result of a lightning strike (1), sand burial (1), poundings from large waves (2), and a boogie boarding incident (1). Aside from fatalities, the majority of incidents at Padre Island were considered minor treat and release incidents (93%) and only 6% were considered severe enough to require emergency medical transport. At Cape Hatteras 23% of the 220 incidents required emergency medical transport and 46% were considered minor treat and release incidents.

The distribution of injuries by gender found that male visitors were involved in 55% of all incidents at Padre Island and 54% of all incidents at Cape Hatteras. The seasonal distribution of injuries at Padre Island was highest from May through September with the peak months being July (41%) and June (25%). In addition, the majority of visitors involved in all incidents were domestic tourists from the United States (92%) and international tourists from Mexico (4%) and Canada (2%). The seasonal distribution of injuries at Cape Hatteras was highest from May through October with the peak months being July (27%) and August (25%). Moreover, 89% of those injured at Cape Hatteras were domestic tourists from the United States and international tourists from Canada (3%), Germany (3%), and Switzerland (1%).

The distribution of incidents by age found that the vast majority of incidents at Padre Island involved toddlers and children aged 0-9 years (49%) followed by those aged 10-19 years (29%). At Cape Hatteras, 27% of the incidents involved toddlers and children aged 0-9 years and 15% of the incidents involved visitors aged 40-49 years. Out of the 211 injuries incurred by those 0-19 years at Padre Island, 83% were stings to the torso and upper and lower extremities courtesy of Portuguese...
Man-O-War and jellyfish during swimming, surfing, and wading activities. Another 4% were the result of puncture wounds and cuts following contact with sting ray. In contrast to Padre Island, swimming, surfing, and wading incidents at Cape Hatteras accounted for 73 (33%) of the reported 220 incidents. However, only five of these incidents were related to Portuguese Man-O-War, jellyfish, and stingray. Instead, poundings from large waves accounted for 30% of the swimming, surfing, and wading incidents and surfing, boogey boarding, body surfing, and wind surfing incidents accounted for 27% of the swimming, surfing, and wading incidents. Land-based incidents including 13 dog bites and a lightning strike that injured 13 people were also reported along with 10 boating incidents.

DISCUSSION

The purpose of this paper was to identify the trends and distribution of tourist injuries on Padre Island National Seashore and Cape Hatteras National Seashore. Despite both locations being popular national seashores for recreational travel purposes, the two seashores show different injury profiles. For example, rip currents, large waves, and surfing activities are primary factors contributing to visitor fatalities and injuries at Cape Hatteras. In contrast, stings and contact with Portuguese Man-O-War and jellyfish account for over half of the visitor injuries at Padre Island.

Rip Currents at Cape Hatteras National Seashore

Rip currents are a serious hazard posing life-threatening conditions throughout all coastal regions and at any beach with breaking waves (Meadows et al., 2005). They are generally described as channeled currents of water flowing away from shore that typically form at low spots, near structures such as jetties and piers, and breaks in sandbars. Rip currents are stronger when the surf is rough and can extend up to 760 meters in length, be as wide as 9 meters, and move at speeds around 8 km. In Australia rip currents have been implicated in 22% of all surf beach drowning deaths (Morgan et al. 2009). In the United States, rip current related drowning deaths cause more loss of life than hazards such as tornados, hurricanes, and lightning combined (Kinnunen, 2005). In fact, the United States Lifesaving Association (USLA) notes that they perform 18,000 rip-related lifeguard rescues each year which accounts for over 80% of all surf beach rescues (USLA, 2009).

To address rip current concerns, in 2006 the National Park Service joined the National Weather Service (NWS), the National Oceanic and Atmospheric Administration (NOAA) Sea Grant Office, and the USLA on a national rip current initiative. The primary focus of this initiative was drowning prevention through public education about rip currents. At Cape Hatteras National Seashore, visitor displays educating the public about the dangers of rip currents were developed at all three visitor centers. In addition, detailed pamphlets using the slogan, “break the grip of the rip” were made available to all visitors. Other initiatives involved broadcasts about rip current conditions on the NWS radio station, enhanced life guard signs warning of rip current conditions, and web links on the national seashore website to rip current information produced by NOAA. Unfortunately, at the time of writing, there is no evidence that this initiative has been successful at reducing rip current incidents at Cape Hatteras. Web links linking to any safety information for the National Seashore are not obvious and difficult to find on the national seashore website. In addition, links to rip current safety information have not been maintained and no longer work. In fact, any visitor searching for safety information at Cape Hatteras is primarily finding information on nuisance insects, warnings about heat and dehydration, hurricane safety information, and warnings of beach debris such as fish hooks. It has also been found that visitors are more interested in getting on with their beach activities instead of stopping at visitor centers once they enter the national seashore. Moreover, locals and visitors to the area rarely check for information on the NWS radio broadcasts unless there is a chance for hurricanes and other storm systems to move through the area.
Portuguese Man-O-War and Jellyfish at Padre Island National Seashore

Jellyfish stings are a common problem affecting beachgoers and it is estimated that around 150 million people are exposed to jellyfish in recreational settings annually (Kimball et al., 2004; Winkel et al., 2002). The Portuguese Man-O-War, although not a true jellyfish, has also been known to result in severe envenomation and the death of beachgoers who come into contact with them (Fenner & Williamson, 1996). The jellyfish and Portuguese Man-O-War found in the Gulf of Mexico and along the coastlines of Texas and Florida are considered to be of special danger because their stings can be life-threatening to small children (Haddad et al., 2002; Bengston et al., 1991).

For some time Padre Island National Seashore has ran a medical first aid station for jellyfish and Portuguese Man-O-War stings at the Malaquite Visitor Center on Malaquite Beach. This is a high traffic area for the national seashore and the location where the majority of sting incidents take place. To begin addressing stings involving young children and adolescents, Padre Island enlisted the help of a volunteer corps. During periods of high visitation, volunteers wearing uniforms rove beach areas, welcome visitors to the national seashore, and inform them of potential health hazards. Volunteers take a proactive approach in order to not alarm visitors and make of point of specifically informing all groups with young children that Portuguese Man-O-War and jellyfish often get caught in waves and washes ashore. Thus, the attractive clear dark blue and purple air bladder with black threads lying on the beach should not be touched and played with. Group supervisors and especially parents are informed that most stings actually occur on the beach and even if the black thread tentacles are detached from the main body of the Man-O-War, they should not be picked up or touched. At the time of writing, the volunteer initiative has helped reduce the number of stings to children and adolescents by over 50%. The challenge now facing the volunteer initiative is that it does not operate all year and continued funding for volunteer activities is not secure.

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ASPECTS OF THE LEGAL ENVIRONMENT OF COASTAL AND MARINE TOURISM IN SOUTH AFRICA

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ABSTRACT

Until the end of apartheid, tourism and marine affairs were deliberately confined to the White minority and left largely unregulated. Since 1994, the legal landscape has changed dramatically. Firstly, a sea change took place from parliamentary sovereignty to constitutional supremacy, including the wide-ranging entrenchment of human rights. Secondly, one has witnessed the development of a complex system of tourism legislation at national, provincial and local level. Thirdly, maritime legislation was updated. Finally, new legislation was passed to better regulate the management of the national environment. This includes the National Environmental Management Act, 1998, complemented by the National Environmental Management: Protected Areas Act, 2003, the National Environmental Management: Biodiversity Act, 2004, and, a few months ago, the National Environmental Management: Integrated Coastal Management Act, 2008. This paper is the first integrated description of a rapid and profound revolution in the statute book, which has made available a sophisticated set of legal tools to meet the multi-faceted challenges of coastal and marine tourism in South Africa. It concludes by alluding to the substantial material and human resources that will have to be mobilized as a matter of urgency to implement and enforce that legislation.

Keywords: environmental law, human rights, marine law, tourism law, ubuntu.

INTRODUCTION

The South African coast is about 3 000 kilometers long. For 500 years, it has been a welcome stage in the long journey of countless travelers between Europe and Asia/Australasia. This is indeed why the Dutch established a halfway station at the foot of Table Mountain in 1652, the beginning of a permanent Western presence at the southern tip of Africa. In the years that followed, Cape Town would remain the only port of call, and the most developed part of South Africa, until the discovery of diamonds led to the meteoric rise of Kimberley in the 1870s, and that of gold to the lightning development of Johannesburg in the 1890s. In turn, those developments led to the development of the two nearest coastal cities: Port Elizabeth and especially Durban (Giliomee & Mbenga, 2007).

During the 20th century, coastal development stretched mainly eastwards of Cape Town into the world-famous Garden Route in the Southern Cape, as well as southwards of Durban. In between, the Eastern Cape coast remained mostly pristine until the end of the century. Probably the most striking feature of coastal and marine development during that period is its racial bias. The Natives Land Act 27 of 1913 confined the Black majority of the population to 13% of the national territory, no part of which included either developed coastal areas or areas seen at the time as having potential for such development. This was followed by unsuccessful attempts to stop the process of urbanization of the Black population with tools such as the Natives (Urban Areas) Consolidation Act 25 of 1945. The apartheid Parliament resorted then to the Group Areas Act 41 of 1950, which compelled most urbanized non-White South Africans to reside away from the shore. Parliament also
passed the Reservation of Separate Amenities Act 49 of 1953, which allowed local authorities to segregate public amenities such as beaches. Out at sea, the exploitation of marine resources was adversely affected by racial and other forms of discrimination (*Bato Star Fishing (Pty) Ltd v Minister of Environmental Affairs and Tourism & Others*, 2004 4 SA 490 CC par. 83).

No wonder, under those circumstances, that coastal and marine tourism in South Africa displays so many peculiar features. However, a process of normalization is now underway, guided by a wide array of tourism, maritime and environmental legislation applied in a completely different constitutional environment than the one that prevailed until 1994.

**CONSTITUTIONAL ENVIRONMENT**

When the Constitution of the Republic of South Africa Act 200 of 1993 (the 1993 Constitution) came into effect in 1994, the sovereignty of Parliament which South Africa inherited from Great Britain was replaced by the principle of constitutional supremacy. Today, this principle is proclaimed by section 2 of the Constitution of the Republic of South Africa, 1996 (the Constitution), which stresses that law or conduct inconsistent with the Constitution is invalid (Rautenbach & Malherbe, 2009, pp. 27-28).

*Ubuntu* was referred to in the Postamble of the 1993 Constitution. It was also referred to in seven of the judgments in *S v Makwanyane & Others* (1995 3 SA 391 CC). The combined effect of those judgments was however to deny the concept any transformative potential in the legal sphere (Kroeze, 2002). It is as a result not surprising that *ubuntu* does not feature among the values listed in section 1 of the Constitution as those on which the Republic of South Africa is founded.

As far as it is concerned, the Bill of Rights does not entrench a right to tourism, but protects the right to freedom of movement, the right to leave South Africa and the right to a passport (s 21). Section 24(b) also protects everyone’s right to have the environment protected for the benefit of present and future generations (Currie & de Waal, 2005, 521-530).

Although South Africa is not a federal State, the Constitution provides for a very complex distribution of powers between the national, provincial and local spheres of government. For instance, local government has jurisdiction over beaches and amusement facilities (s 156), with the relevant provincial government monitoring, providing support and regulating the exercise of that power (s 156(6)(a) and s 156(7)). Moreover, the national government also has the authority to regulate in specific cases such as when this is necessary to establish minimum standards required for the rendering of services (s 156(7) and s 44(2)(d)). If a conflict arises between national and provincial legislation, the former prevails (s 147(2)). On the other hand, local government also has jurisdiction over local tourism, but there is no limitation to the right of national government to regulate the exercise of that power (s 156(7) and s 44(1)(a)(ii)). In this case, provincial legislation prevails over national legislation (s 146(5)) except in specific circumstances (s 146(2)-(3)). Much less complicated examples are the conservation of marine resources as well as the regulation of international and national shipping, which fall exclusively within the jurisdiction of the national government (Schedule 4).

Aware of the pitfalls of such a system, the drafters of the Constitution laid down principles of cooperative government and intergovernmental relations which all spheres of government must observe and adhere to (ss 40-41). Structures and institutions to promote and facilitate intergovernmental relations as well as mechanisms and procedures to facilitate the settlement of intergovernmental disputes are provided by the Intergovernmental Relations Framework Act 13 of 2005.
TOURISM LEGISLATION

As already indicated, all three spheres of government have jurisdiction over tourism. Following in the footsteps of its predecessors, the national Tourism Act 72 of 1993 deals mainly with the South African Tourism Board and tourist guides. It does not contain any specific reference to coastal and marine tourism. The member of Cabinet responsible for tourism is the Minister of Environmental Affairs and Tourism, a state of affairs which allows for a greater level of integration of environmental and tourism policies than would probably take place otherwise. The national tourism policy is spelled out in the Tourism White Paper (DEAT, 1996). This document included among the key constraints of tourism development, soil erosion which is causing “coastal estuaries to silt up, thereby depriving these natural resources of the leisure and aesthetic potential to attract tourism” (DEAT, 1996, p. 10). The White Paper lamented that this was merely one specific instance of poor protection of the environment and poor coastal management (DEAT, 1996, p. 10). The authors of the document insisted however that “[a] well-managed tourism industry has the potential to ameliorate, rather than contribute to, South Africa's environmental problems” (DEAT, 1996, p. 37). This could be achieved by introducing mandatory environmental management measures which must, among others, ensure that tourism development “does not deprive communities of access to coastal resources needed for their livelihoods” (DEAT, 1996, p. 38).

At the provincial level, each of the four coastal provinces has its own tourism legislation. For instance, regulations made in 2004 in terms of the KwaZulu-Natal Tourism Authority Act 11 of 1996 forbid coastal and marine tourism service providers such as boat/fishing charters, cruise operators, dive operators, and whale or dolphin watching operators to offer their services unless they are registered (reg 6(1)). In order to do so, a service provider must “(a) be a member of at least one Community Tourism Organisation if it is necessary to the marketing of its service; (b) have a business or trading licence; and (c) have public liability insurance” (reg 3(2)).

MARITIME LEGISLATION

The South African maritime zones system was updated by means of the Maritime Zones Act 15 of 1994. This means that South Africa now has sizeable bodies of internal waters landward of straight baselines stretching between Cape Deseada, northeast of Saldanha Bay, and Cannon Rocks, at the eastern end of Algoa Bay. South Africa also has a territorial sea of 12 nautical miles; a contiguous zone and a maritime cultural zone between 12 and 24 nautical miles from the baseline; an exclusive economic zone extending to 200 nautical miles; and a continental shelf defined in terms of article 76 of the Law of the Sea Convention. A dozen years earlier, Parliament had passed the Marine Traffic Act 2 of 1981, which still regulates ship movements in the internal and territorial waters, including the movements of ships used for sporting or recreational purposes.

The passing of the Maritime Zones Act was followed by a constant stream of legislation aimed at bringing the South African legal system up to speed with the latest global developments in maritime law. For instance, Parliament passed the South African Maritime Safety Authority Act 5 of 1998. SAMSA, the Authority which the Act established, has had a major impact on the regulation of coastal and marine tourism within the framework of the Merchant Shipping Act 57 of 1951 (Hare, 1999) by adopting, for instance, small vessel safety regulations in 2007.

Another example is the Marine Living Resources Act 18 of 1998. The Act requires the Minister of Environmental Affairs and Tourism to “determine the total allowable catch, the total applied effort, or a combination thereof” (s 14(1)). Once this is done, the Minister must “determine the portions of the total allowable catch, the total applied effort, or a combination thereof, to be allocated in any year to subsistence, recreational, local commercial and foreign fishing, respectively” (s 14(2)). Like all other forms of fishing, recreational fishing, meaning “any fishing done for leisure or sport and
not for sale, barter, earnings or gain” (s 1), requires a permit (s 13(1)). The Act also provides for the proclamation of marine protected areas (s 43), such as the Walker Bay Whale Sanctuary. Finally, it is in terms of this Act that permits to undertake activities such as great white shark cage diving are issued.

Finally, many coastal municipalities have made regulations with regard to the seashore and the sea situated within or adjoining their areas of jurisdiction, in terms of the Sea-shore Act 21 of 1935 (Devine, 1990).

ENVIRONMENTAL LEGISLATION

Environmental issues were largely overlooked under the previous political dispensation. An exception is the Sea Birds and Seals Protection Act 46 of 1973, which compels the relevant Minister to exercise control over sea birds and seals as well as over the acquisition, gathering and disposal of all products of sea birds and seals (s 2(1)(a)). The Act forbids to set foot on, or to remain upon, any island; to pursue or to shoot at or to wilfully disturb, kill or capture any sea bird or seal upon any island; or to “wilfully damage the eggs of any sea bird upon any island or collect upon or remove from any island any such eggs or the feathers of any sea bird or any guano, except in the performance of [one's] duties under th[e] Act or under the authority and subject to the conditions of an exemption granted by or under th[e] Act, or of a permit” (s 3). The Act confers certain powers on police officers as well as, provided that they have been generally or specially authorized thereto in writing by the relevant Minister, other officers, persons in charge of an island and commanders of a boat or vessel which is the property of the State and is used in connection with the carrying out of the provisions of the Act (s 10).

A sea-change took place in this regard when the National Environmental Management Act 107 of 1998 came into effect. “Generally the overall tenor of the [Act] is to fashion an environmental management system on organs of state rather than impose a set of regulatory commands on the private sector” (Glazewski, 2005, p. 137). The Act stresses that “[s]ensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure” (s 2(4)(r)). A number of other pieces of legislation were adopted based on the framework set out by the Act.

One of them is the National Environmental Management: Protected Areas Act 57 of 2003. The main objective of the Act is to provide for a rational and comprehensive system for the declaration and management of protected areas in South Africa (s 2(a)). For that purpose, the Act provides that, in fulfilling the environmental rights entrenched in s 24 of the Constitution, “the State through the organs of state implementing legislation applicable to protected areas must (a) act as the trustee of protected areas in the Republic; and (b) implement th[e] Act in partnership with the people to achieve the progressive realisation of those rights” (s 3). The Act distinguishes between different types of protected areas (ch 2). It also provides for a Register of Protected Areas (s 10), all of which can only be proclaimed after a number of procedures, including consultation and public participation, have been followed (ss 31-34) and, for certain kinds of areas, once various requirements have been met (ss 18(2), 22(2), 23(2) and 28(2)). Moreover, the Act provides for the management of certain types of protected areas, which must be assigned to stipulated management authorities according to management plans (ss 38 and 40). Finally, the Act sets conditions of access to various kinds of protected areas (ss 45-47). An example is the draft regulations for the proper administration of the Knysna protected environment published earlier this year.

But probably the most important new legislation from the perspective of coastal and marine tourism is the National Environmental Management: Integrated Coastal Management Act 24 of 2008
(NEMICMA) which, when it comes into effect, will repeal the antiquated Sea-shore Act 21 of 1935. The NEMICMA is based on the White Paper for Sustainable Coastal Development adopted in 2000. The document stressed that local authorities should “continue to carry out many day-to-day responsibilities for coastal management above the high water mark”, including “beach management and tourism” (DEAT, 2000, 11). The White Paper also indicates that “[p]romoting coastal tourism, leisure and recreational development” was identified as one of the priority issues during the course of the policy formulation process (DEAT, 2000, p. 12). The document further pointed out that “[c]oastal economic development potential on a national scale can be explained by two major factors, both related directly to the coastal environment – the access to international trade provided by transport networks and ports, and the attractive lifestyle, recreational and tourism opportunities offered by a coastal location. These features depend on the maintenance of a high-quality coastal environment through effective coastal management” (DEAT, 2000, pp. 21-22). More specifically, the White Paper spells out that “[d]iverse, regionally appropriate tourism, leisure and recreational opportunities that are affordable for a range of domestic and foreign users, including disadvantaged communities, will need to be identified and promoted. In sensitive coastal settings, strict guidelines will need to be applied to ensure non-intrusive, low-impact coast-dependent development where appropriate, and no physical development where such development is not appropriate. Where appropriate, co-management or public-private partnerships will need to be created to foster nature-based coastal tourism and recreational opportunities with community participation. Benefits will need to be retained for local communities, where practicable” (DEAT, 2000, p. 68). “Attention will [also] need to be given to the promotion of the non-exploitative use of living coastal and marine resources, for example, nature-based tourism activities such as mammal- and sea bird watching” (DEAT, 2000, p. 77).

The NEMICMA defines the coastal zone as including the coastal protection zone, coastal access land, coastal protected areas, the coastal public property, the exclusive economic zone and any aspect of the environment on, in, under and above those areas (s 1(1)). In turn, the coastal public property includes the internal waters; the territorial waters; most estuaries; land submerged by, and most islands within those waters; most sections of the seashore; any admiralty reserve owned by the State; any State-owned land declared to be coastal public property; as well as any natural resources on or in any of the abovementioned areas or the exclusive economic zone or the continental shelf (s 7). The ownership of the coastal public property “vests in the citizens of the Republic and [it] must be held in trust by the State on behalf of the citizens of the Republic” (s 11(1)). This means that the coastal public property “is inalienable and cannot be sold, attached or acquired by prescription and rights over it cannot be acquired by prescription” (s 11(2)). It also means that the State must “ensure that coastal public property is used, managed, protected, conserved and enhanced in the interests of the whole community” (s 12). The State must also “take whatever reasonable legislative and other measures it considers necessary to conserve and protect coastal public property for the benefit of present and future generations” (s 12).

This must be done in terms of a national coastal management programme, provincial coastal management programmes, municipal coastal management programmes and a national estuarine management protocol. Those programmes and protocol will have to be adopted within four years after the Act comes into effect (ss 33(2), 44(1)(a), 46(1)(a) and 48(1)(a)). Although the Act does not expressly say so, the municipal programmes can only be adopted once the relevant provincial programme has been adopted, something which requires in turn that the national programme has first been adopted. This is because provincial programmes must be consistent with the national programmes (s 47(1)(c)(i)), and the municipal programmes must be consistent with the national programme as well as the relevant provincial programme (s 49(1)(b)(i)). This requirement of consistency is not limited to the coastal management programmes. Indeed, the Act requires that consistency be also ensured between those programmes and all plans, policies or programmes adopted by an organ of State that may affect coastal management, including environmental
implementation or environmental management plans prepared in terms of the National Environmental Management Act; integrated development plans adopted by a municipality in terms of the Local Government: Municipal Systems Act 32 of 2000; the national biodiversity framework and bioregional plans prepared in terms of the National Environmental Management: Biodiversity Act 10 of 2004; provincial and municipal land development plans; provincial strategic policies and plans concerned with promoting sustainable development as well as the national estuarine management protocol (s 52).

The national coastal management programme is meant to be “a policy directive on integrated coastal management” and to “provide for an integrated, co-ordinated and uniform approach to coastal management by organs of state in all spheres of government, nongovernmental organisations, the private sector and local communities” (s 45(1)). The programme will have to include:

“(a) [a] national vision for coastal management in the Republic, including the sustainable use of coastal resources;
(b) national coastal management objectives;
(c) priorities and strategies to achieve those objectives;
(d) performance indicators to measure progress with the achievement of those objectives;
(e) norms and standards for the management of-
   (i) the coastal zone generally;
   (ii) the specific components of the coastal zone; and
(f) a framework for co-operative governance to implement measures concerning coastal management that -
   (i) identifies the responsibilities of different organs of state, including their responsibilities in relation to marginalised or previously disadvantaged communities that are dependent on coastal resources for their livelihood; and
   (ii) facilitates co-ordinated and integrated coastal management” (s 45(2)).

The Act does not mention coastal and marine tourism in this regard. Whether it features in the programme and, if so, to which extent, will therefore depend entirely on the political process leading to its adoption. In this regard, the Act compels the Minister to invite members of the public by a notice in the Government Gazette to submit to him or her, within 30 days of the notice, written representations on or objections to the programme before it is adopted (s 44(2)). The same applies in the case of the provincial and municipal programmes (ss 46(2) and 48(2)). As far as the latter are concerned, it is worth noting that the Act requires that they include priorities and strategies “to address the high percentage of vacant plots and the low occupancy levels of residential dwellings” (s 49(2)(c)(iii)) and “to equitably designate zones … for the purposes of mixed cost housing and taking into account the needs of previously disadvantaged individuals” (s 49(2)(c)(iv)). This is a clear injunction to address the consequences of the racially and socially skewed pattern of coastal tourism development under the previous dispensation.

The NEMICMA also provides for coastal planning schemes, which are aimed at facilitating “the attainment of coastal management objectives by (a) defining areas within the coastal zone or coastal management area which may (i) be used exclusively or mainly for specified purposes or activities; or (ii) not be used for specified purposes or activities; and (b) prohibiting or restricting activities or uses of areas that do not comply with the rules of the scheme” (s 56(1)).

The NEMICMA protects the right of all individuals to reasonable access to any coastal public property as well as to use and enjoy it (s 13(1)). However, while doing so, they may not (i) “adversely affect the rights of [other] members of the public to use and enjoy” the property; (ii) “hinder the State in the performance of its duty to protect the environment”; or (iii) “cause an
adverse effect” (s 13(1)). In the latter respect, every person who causes an adverse effect on the coastal public property must take reasonable measures to prevent that effect from continuing or, in so far as such harm is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify that adverse effect. The Minister may issue a written coastal protection notice to the person responsible for carrying out, or intending to carry out, an activity that is having, or is likely to have, an adverse effect on the seashore (s 58(1) read with s 28(1) of the National Environmental Management Act). By this means, the Minister may prohibit the activity concerned if it is not already prohibited in terms of the NEMICMA and instruct the person concerned either (i) to take appropriate steps in terms of the NEMICMA or any other applicable legislation to protect the environment; (ii) to investigate and evaluate the impact of the activity in accordance with chapter 5 of the National Environmental Management Act; or (iii) to stop or postpone the activity for a reasonable period to allow for the investigation to be carried out and for the Minister or Member of the Executive Council (MEC) to evaluate the report (s 59(1)). The Minister or MEC may also issue a written repair or removal notice to any person responsible for a structure which (a) is having or is likely to have an adverse effect on the coastal environment by virtue of its existence, because of its condition or because it has been abandoned; or (b) has been erected, constructed or upgraded in contravention of the NEMICMA or any other law (s 60(1)).

A fee may only be charged for access to a coastal public property with the approval of the Minister, unless that property has been leased, or is, or forms part of a protected area or harbour (s 13(3)-(5)). Access and use may be prohibited or restricted (a) if the seashore “is or forms part of a protected area”; (b) “to protect the environment, including biodiversity”; (c) “in the interests of the whole community”; (d) “in the interests of national security”; or (e) “in the national interest” (s 13(2)). Specific activities may also be prohibited if the property is part of a special management area (s 23(4)).

The regulation of the use of coastal public property for recreational purposes falls within the jurisdiction of the relevant MEC of the province concerned after consultation with the national Minister of Environmental Affairs and Tourism and in compliance with any national norms or standards that may have been prescribed (s 84(1)(c)).

CONCLUSION

This overview has shown that the last few years have seen the adoption of a wide range of legislative measures impacting on coastal and marine tourism. Most of them are to be welcome as bringing South African law up to date with the latest global trends. However, their multiplicity is a major problem in that it places a heavy burden on all role players to keep abreast with, and reconcile diverse pieces of legislation falling within the jurisdiction of different spheres of government and departments. The coming into effect of the NEMICMA offers a number of tools to address this issue. But the Act has not come into effect yet. Moreover, it remains to be seen how quickly and to which extent the relevant national, provincial and local authorities will be able to deploy the significant financial and human resources required to implement and enforce the legal provisions now at their disposal. There is little room for lack of commitment in this regard because time is running out, as the coastal mining controversy along the Wild Coast illustrates.

REFERENCES


‘KIA ANGI PUKU TO HOE I TE WAI’
OCEAN NOISE AND TOURISM

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ABSTRACT

The overall theme of the 6th Coastal and Marine Tourism congress is “The Spirit of Ubuntu, Connecting Continents, Places and People”. “The Spirit of Ubuntu” is a traditional African concept, acknowledging interconnectedness between humans and also between humans and nature. This concept is also central to the worldview of Maori, the indigenous people of Aotearoa/New Zealand where the phrase ‘kaitiakitanga’ is used to express the duty of care or guardianship responsibilities Maori have with all living things. Indigenous paradigms such as ‘ubuntu’ and ‘kaitiakitanga’ are pertinent to the emerging issue of ocean noise. There is a growing concern regarding increasing levels human induced noise in the oceans and its effect on marine mammals. Tourism activities contribute to these rising sound levels, however, few studies have focused on quantifying sound produced by tour boats and assessing their effects on marine mammals. Furthermore, no research has been conducted, thus far, to examine the impacts of deliberate use of sound as a mechanism to create and enhance interactions between tourists and marine mammals. As a consequence, there is little to guide management decisions when considering marine mammal responses to noise levels. We argue here that an alternate approach to management is needed with direct actions taken to minimise any potential effects through a sound understanding of the needs of the marine mammal. This is consistent with the precautionary principle and is also well suited to an adaptive management type of approach. Following the spirit of “ubuntu” and “kaitiakitanga” and ensuring that our acoustic impacts on marine environments and on marine creatures are minimised must be a better way forward.

Keywords: Whale-watching, swim-with-dolphins, noise, sound, management.

INTRODUCTION

In February of this year we attended a public presentation on the issue of noise in our oceans. The talk was given by U.S. based marine acoustics researcher, Dr Chris Clark. Because he was a visitor to Aotearoa/New Zealand, he was given a traditional ‘mihi’ or greeting from representatives of local indigenous Maori. As part of this mihi, Rawiri Paratene shared a treasured expression his grandfather had gifted him: “kia angi puku to hoe I te wai” which translated means “move your paddle silently through the water”. As with many such phrases which are passed down the generations within cultures that have a strong oral tradition, this phrase in Maori has multiple meanings. Rawiri explained that for Maori there are many reasons why paddling your ‘waka’ (canoe) silently is important. Efficient paddling technique produces little disturbance of the water
and, therefore, little noise. This was a valuable skill because Maori needed to be able to move through dangerous areas quietly to avoid or to make an attack on rival iwi (tribes). ‘Kai-moana’ or sea-food is an important component of Maori diet, and when fishing and approaching prey, stealth was a significant contributor to success, thus silent paddling was of considerable assistance. Finally, respect and reverence for the realm of ‘Tangaroa’, the god of the seas, was considered of paramount importance if one was to remain in his favour and to avoid bad weather or accident. Thus, for Rawiri his grandfather’s expression holds great significance and wisdom. It is also pertinent to the emerging issue of noise in our oceans.

THE ISSUE

Because of the acoustic and visual properties of water sound is of great significance to marine creatures (Hildebrand, 2005). More specifically, sound travels faster and further underwater than it does in air and conversely, visible light is compromised underwater and diminished by depth, turbidity and the physical make up of salt-water. Thus, in simple terms, it is far easier and more efficient to produce and listen to sounds underwater than it is to see. The consequence of these phenomena is that sea creatures have evolved to use sound in a wide and complex array of ways. They use it for communication, for navigation, for locating food and for stunning and confusing both prey and predators alike. In particular, for large migratory species, such as the great whales that need to navigate over great distances and to locate one another, sound is fundamentally important (Committee on Potential Impacts of Ambient Noise in the Ocean on Marine Mammals, National Research Council, 2003).

The world’s oceans are far from “silent” as Jacques Cousteau described them in 1953. Ambient noise in many of the world seas and oceans (especially in the northern hemisphere) has increased by an average of 3dB per decade over the past 50 years (McDonald et al., 2006; 2008; Hatch and Wright, 2007). This increase is primarily due to human activities. Shipping and other marine transport, fishing activities, drilling and ocean exploration, construction and land ‘reclamation’, dredging and spoil dumping, military activity and tourism have all become major sources of underwater noise. Three specific additional activities have also become more commonplace. The use of explosives to assist with removal of rocks and sea-bed areas which are difficult to dredge, the use of passive low-frequency sonar by the military to detect movement of vessels (especially submarines) and the use of sonic ‘air-guns’ as seismic survey tools to scan for under-sea oil and gas reserves. Ambient noise levels are predicted to increase further due to the significant reduction in ocean’s ability to absorb, sound a consequence of climate change induced ocean acidification. As a consequence, sound propagation distances are expected to increase by a minimum of 30% by 2050 (Hester et al., 2008).

MARINE MAMMALS AND SOUND

It has long been recognised that human produced under-water sound has impacts on marine mammals (Shevill, 1968) and other marine life (Banner and Hyatt, 1973). As human marine-based activities and the related sound produced have increased, concern has grown regarding potential effects on marine mammals’ auditory systems. More specifically, these concerns focus on the effects on marine mammals’ navigational, foraging, reproductive, and hearing capabilities (Richardson et al., 1995) as well as their immune functions and overall health (Romano et al., 2004). Non-auditory effects of acoustic impacts (see Jepson et al., 2003) are also of concern (Weilgart, 2007). For example, it is possible that noise could affect marine mammals indirectly through their prey. Fish show permanent and temporary hearing loss, stress and behavioural reactions to noise (Pearson et al., 1992; Engås et al., 1996; McCauley et al., 2003; Sarà et al., 2007). It is argued that these impacts, particularly their cumulative, longer-term effects could
contribute to population-level declines in species viability, abundance and distribution (IFAW, 2008).

A wide range of studies have confirmed that under-water sounds associated with human activities affect marine mammals. These include: dredging and construction, oil and gas drilling, marine geophysical surveys, military and other sonar, ‘pingers’ and other acoustic alarms, transportation, seismic explosions and oceanographic research (for reviews see: Richardson et al., 1995; Gordon et al., 2003; Nowacek et al., 2007; Weilgart, 2007; IFAW, 2008; AEI, 2008). While it is not been empirically proven, claims have been made that a number of these activities have been associated with mass strandings of marine mammals (Jepson et al., 2003; Jasny et al., 2005; Cox et al., 2006; Parsons et al., 2008).

In addition to general increases in ambient noise, sound associated with specific activity, which is discrete in terms of time frame and location, is also increasing (AEI, 2008; IFAW, 2008; McDonald et al., 2006). While commercial shipping is the main contributor to ambient noise, recreational watercraft and smaller commercial vessels, such as those used for whale-watching, can contribute to noise on a regional and local scale (AEI, 2008).

A number of studies have shown that cetaceans respond acoustically to noise generated by vessels in a variety of ways. These responses include changes in whistle production rates (e.g., Buckstaff 2004; Van Parijs & Corkeron 2001; Scarpaci et al., 2001; Lemon et al., 2006; May-Collado & Wartzok 2008); vocalisation (Finley et al., 1990; Schiefele et al., 2005; Holt et al., 2008; signal frequency (Lesage et al. 1999; May-Collado & Wartzok 2008) and call duration (Lesage et al., 1999; Foote et al. 2004; Buckstaff, 2004). Cetaceans have also been shown to increase their swimming speed and move away from the source of sound (Hastie, 1991; Evans et al., 1992; Gordon et al., 1992). It has also been argued that if such noise persists over a long period of time (in some cases several years), cetaceans may abandon an area altogether (e.g. Bryant et al., 1984; Morton and Symonds, 2002).

There is, however, substantial variation in marine mammals’ responses to underwater sound. Experiments have shown that a given level of sound can cause a wide range of responses, from no detectable change in behaviour to dramatic avoidance, cessation of feeding or reduced reproductive rates (Southall et al., 2007). In addition, there are also intra- and inter-species variations as well as variability in reactions due to different physical and biological factors. For example, a number of studies have identified that reactions are influences by the volume and type of noise, vessel characteristics and the hearing capability of the animals (Watkins, 1986; Blane, 1990; Kruse, 1991; Lesage et al., 1999). Au et al. (2007) showed that in a quiet environment harbour porpoises have a shorter range at which they can detect sound when compared with bottlenose dolphins in the same location. As a consequence, they conclude that it is more difficult for harbour porpoises to inhabit a noisy environment. Thus, the influence of sound on marine mammals is high variable and influenced by a wide range of factors.

Marine mammal tourism and sound

It is widely accepted that understanding and managing the potential impacts of human activities such as whale watching on marine mammals is critical to the long-term conservation of targeted species. Although whale-watching (any commercial tour interacting with cetaceans in the wild) is widely viewed as a viable, sustainable eco-tourism activity, research on a diverse range of species at a wide range of locations clearly identifies that whale-watching is not benign (e.g. Lusseau & Bejder, 2007). Whale-watching (with the exception of land-based observation) does have impacts on the whales or dolphins targeted and these impacts can have long-term detrimental consequences for these animals. The growing body of literature demonstrating these impacts in different locations
and with a range of species has led to some arguing that whale-watching, if not carefully managed, is another form of harmful exploitation of cetaceans (Orams, 1999).

To illustrate, over the past 20 years, the following short-term effects of tourism on cetaceans have been detected: Changes in behavioural state/activity (e.g. Nowacek et al., 2001; Lusseau, 2003; Constantine et al., 2004; Ribeiro et al., 2005; Williams et al., 2006; Stockin et al., 2008); group cohesion (e.g. Bejder et al., 1999; Nowacek et al., 2001; Ribeiro et al., 2005; Miller et al. 2008); dive intervals (e.g. Janik & Thompson, 1996; Nowacek et al., 2001; Richter et al., 2001; Lusseau, 2003; Miller et al. 2008); direction of travel (e.g. Goodwin & Cotton, 2004; Mattson et al., 2005; Lusseau, 2006; Lemon et al., 2006), and habitat use (Sorensen et al., 1984; Baker & Herman, 1989; Wells, 1993; Ostman-Lind et al., 2004; Lusseau, 2004, 2005; Bejder et al., 2006b). Furthermore, more recent research has linked the short-term effects of tourism with long-term biological consequences for the viability and fitness of targeted animals (e.g. Lusseau, 2005; Bejder et al., 2006; Lusseau et al., 2006; Williams et al., 2006).

This body of research has primarily concentrated on detecting changes in the targeted marine mammals’ behaviour as a consequence of the approach and close proximity of tour vessels and, in some cases, tourists swimming in the water nearby. Few of these studies have focused on the specific cause of the disturbance and have tended to measure the speed, approach distance and direction and number and size of vessels. Thus, little is known about whether vessel design, propulsion type, vessel construction or other more specific variables have influence on responses of marine mammals. More specifically, while many studies have pointed to noise produced by marine mammal tour vessels as a potential influential factor, very few have quantified and tested different types and volumes of underwater sound emitted by those vessels (e.g Erbe, 2002; Buckstaff, 2004; Holt et al, 2009). Furthermore, to our knowledge, no studies have specifically examined the deliberate use of sound as a mechanism to create and enhance interactions between tourists and marine mammals.

The deliberate use of underwater sound during cetacean-based tourism

In the 1970s, New Zealand diving and marine exploration pioneer Wade Doak founded an initiative he called Project Interlock (see Doak, 1981; 1988; 1993). He, his family and friends explored opportunities to view and interact with wild dolphins at sea from a sailing catamaran off the coast of northern New Zealand. In exploring these interactions Doak conducted a number of experiments in transmitting sounds to the dolphins. They used a range of mechanisms including using a bell, a whistle, playing musical instruments and broadcasting music through underwater speakers. Doak reported a variety of responses in the dolphins which he interpreted as positive reactions and while these experiments formed a part of his much wider interest in and exploration of cetacean cognitive abilities, he was positive dolphins responded to their use of music and other sound.

Doak is not alone in his attempts to explore options to interact with cetaceans, special relationships between humans and dolphins have been reported over centuries (eg. Pliny the Elder in 70 AD; Pline L’Ancien, 1955) and, in more recent times, interacting with cetaceans has become a booming commercial tourism industry (Hoyt, 2001). As cetacean-based tourism has grown in popularity, so too has the range of techniques and platforms that are used to facilitate these opportunities. ‘Whale-watching’ is now conducted from vessels of all types and sizes, from ocean-going cruise ships to two metre sea-kayaks. It is undertaken using aircraft, from land-based observation sites and from in the water using snorkels and masks and SCUBA diving apparatus (Orams, 1999). In order to reliably sight dolphins and whales, tour operators have taken advantage of a number of naturally occurring phenomena, such as migratory pathways, feeding, breeding and resting sites. Operators have also deliberately developed mechanisms to locate cetaceans (using spotting air-craft, sighting networks and hydrophones) and techniques to facilitate close approaches (by feeding dolphins,
towing swimmers on ‘mermaid lines’ and placing swimmers in the water in close proximity to dolphins and whales) (Hoyt, 2001; Samuels et al., 2003).

The use of artificial underwater signals or sounds by tour operators and private recreational tourists to interact with cetaceans has also been relatively common. In particular, swim-with-dolphins tour operators have encouraged swimmers to use several techniques to “entertain” the dolphins. These include, singing, squealing, bubble-blowing, rewinding underwater cameras, tapping rings on dive masks, clicking fingers, playing with wetsuit zips and making squeaky sounds around the vessel (personal observations, both authors). The production of such sounds has not, to our knowledge, been empirically investigated with regard to its impact on the dolphins. This is surprising given the relatively common practice of tour operators encouraging tourists to participate in such activities and the widely reported concerns regarding noise pollution and its impacts on cetaceans. Perhaps the production of such sounds by tourists is considered relatively low level, intermittent and of low priority with regard to the range of other potentially harmful impacts resulting from marine mammal tourism. However, such an assumption appears dangerous when the range of impacts that have now been shown is considered.

In New Zealand the issue of tourists deliberately using sound to interact with dolphins has been elevated in priority because, over the past few years, Hector’s dolphin (Cephalorhynchus hectori) swim tour operators at Akaroa; (Canterbury, South Island) have been providing stones to their clients onboard their vessels and encouraging them when swimming to bring them together under the water to create sounds (clicks, bangs and rhythms). Anecdotally, tourists and their onboard guides report sustained and closer interactions between the dolphins and the swimmers. Such activities are problematic in that intuitively most tourists (and indeed many operators) assume that because it is the dolphins ‘choosing’ to approach and interact that there are no detrimental consequences. The ‘if they don’t like it they can just leave’ response is common and appears rational. However, empirical evidence is clear with regard to vessel and swimmer approaches, even if avoidance is not a consequence, dolphins and whales can be detrimentally impacted by interactions with tourists. Thus, sustaining or enhancing interactions with dolphins by using artificial means such as clicking stones underwater may not be in the best interests of the dolphins. This is particularly of concern at Akaroa because the species of dolphins targeted for swimming with are Hectors dolphins. This species is endemic to New Zealand, endangered and already under significant pressure from other challenges such as by-catch mortality, declining abundance of prey and habitat degradation.

It is important, therefore, to design and undertake empirical research to assess the impacts of deliberate use of sound as a component of tourists’ interactions with cetaceans. The swim-with Hectors dolphins tours at Akaroa is a good place to start and we are currently conducting such a study.

**ASSESSING IMPACTS OF TOURISM-CAUSED SOUND ON MARINE MAMMALS**

Conducting research on impacts of tourism on marine mammals is challenging. However, the use of innovative techniques and good study design can lead to the successful investigation of the issue (Orams, 2004). Bejder and Samuels’ (2003) review of research on the impacts of tourism activities on cetaceans indicated that sound scientific evidence can be successfully gathered if a study incorporates: multiple research platforms; appropriate behavioural sampling techniques; simultaneous measurement of multiple responses; supplemented opportunistic sampling with controlled experiments; analysis of both existing and historical data (when available); and innovative technologies (e.g. acoustic tagging, remote monitoring). Thus, a variety of methods and accepted research protocols now exist for studying and assessing the impacts of cetacean-based tourism on the targeted animals.
Defining the real costs of whale-watching on targeted populations is also challenging. Not only is it difficult to determine the biological significance of impacts but it can also take decades to show an impact on the viability of targeted populations. An important consideration is whether short-term behavioural measures are suitable as indicators of long-term biologically and ecologically significant impacts (Gill et al., 2001; Beale and Monaghan, 2004a).

A number of authors have argued that attention needs to be focusing on observing and measuring potential indicators of long-term tourism-induced stress (Orams, 2004; Wright et al., 2007) and interpreting observed behaviours in the context of population-level consequences and, in particular, acceptable noise exposure levels (Nowacek et al., 2007). It is, however, difficult to determine what specific exposure levels (i.e. thresholds) might result in behavioural avoidance or displacement and, therefore to specify what noise levels are acceptable (Nowacek et al., 2007). Nevertheless, it is important to establish baseline data on background noise. This will allow an assessment of changes in cetacean behaviour and an analysis of potential correlations between noise level changes and behavioural changes (Lemon et al., 2006).

Detailed monitoring and measurement of animal behavioural responses and ambient noise exposure levels could help resolve many questions about short-term reactions (Erbe, 2002; Nowacek et al., 2007). Tag/telemetry systems could also help gather data on behaviour/stress when underwater and noise level at an individual’s specific location (Nowacek et al., 2007; AEI, 2008). Sound propagation and impact assessment models could be developed to identify scenarios where noise impacts could be significant (Erbe, 2002; Nowacek et al., 2007). Models could include zone of audibility, masking and responsiveness; exposure levels and likelihood of auditory injury (Erbe, 2002; Holt, 2008). Erbe and Farmer (2000a) created, for example, a software model to estimate zones of impact on cetaceans around anthropogenic noise.

While there are a variety of tools for researchers to explore the impacts of sound resulting from marine mammal tour operations, the lack of basic knowledge about most targeted populations inhibits researchers’ abilities to inform management regarding suitable policies to minimise impacts.

MANAGEMENT OF THE INDUSTRY, A WAY FORWARD?

The management of the exponential growth of the whale-watching industry has been a challenge (e.g. Lusseau, 2004; Evans et al., 2008). Although the potential impacts of the industry have been widely flagged, the success (or otherwise) of management regimes to minimise such impacts has not been addressed to the same degree (Higham et al., 2009). Casagrandi and Rinaldi (2002, p 1), for example, argued “that it is difficult, if not impossible, to formulate policies that guarantee that tourism can be maintained for a long time without severely impacting on the environment”.

One of the difficulties is to translate observed impacts into effective management guidelines which can minimise or eliminate those impacts. Furthermore, while research may demonstrate short-term effects, it may not be possible to determine whether these effects will result in long-term biologically significant impacts on the observed population (Wright, 2006). Further challenges are related to the difficulties inherent in research on marine mammals, namely whether claimed behavioural responses to disturbance have been interpreted correctly (e.g. Gill et al., 2001; Beale and Monaghan, 2004b; Bejder et al., 2006).

Another problem is that related to the huge variation in management regimes currently being applied around the world. These range from no guidelines or regulation at all to highly regulated, government licensed industries. This variability is inconsistent and highly fragmented (Garrod and
Fennel, 2004). But are management measures effective? Research needs to help and guide managers a) to mitigate harassment and disturbance both in the short and long-term and b) to decide what options really do work. Thus far what is emerging is that voluntary and industry led codes of conduct have limited success (e.g. Scarpaci et al., 2003, 2007; Constantine et al., 2004; Lusseau, 2005; Allen et al., 2007; Wiley et al., 2008). In addition, even when regulations do exist, there are significant challenges in their implementation, especially in their consistent application and enforcement (Orams, 2004).

As a consequence of the growing recognition of the effects of whale-watching, there has been a push for a shift in attitudes towards management so that the onus of proof is placed on the industry itself to demonstrate it is environmentally sustainable (Mangel et al. 1996; Bejder et al., 2006b). The precautionary principle is increasingly being advocated as a fundamental basis which should under-pin management regimes for marine mammal tourism in the face of uncertainty (e.g. Principle 15 of the UNCED 1992 – The Rio Declaration). However, Heazle (2006) used the example of the IWC and argued that while the precautionary principle has its benefits, its vagueness (how much precaution is enough) and its openness to interpretation can also result in its application creating, instead of limiting, risks and uncertainty.

Higham et al. (2009) identified a lack of a comprehensive integrated management framework for marine mammal tourism and, as a result, proposed an integrated and adaptive management model. They claim that this model not only addresses the current shortcomings in the long-term sustainable management of the whale tourism industry (Higham and Bejder, 2008), but it also responds to the growing recognition of the role of scientists in helping managers to achieve sustainability. They argue that decision analysis models, for example, can be used to investigate the consequences of various management policies to assess the environmental and economic risks incurred when establishing those policies (Lusseau, 2004). Regions where such models can be applied could be used as a baseline for other areas where data on impact assessment is unavailable (e.g. where whale-watching is about to be developed).

In considering this approach to marine mammals’ responses to noise levels, there is limited data available and, as a consequence, little to guide management decisions. Wright et al. (2007) proposed that the adaptive management of noise impacts could be linked with well-planned long-term studies that take into account uncertainties about the population level impacts of noise on the targeted species. They recommended careful extrapolation of data from other species. The monitoring of ambient noise levels and the use of noise impact assessment models (eg. Erbe, 2002) could also help develop effective mitigation measures.

An alternate approach related to mitigation of potential risk of harm could be used. If it is accepted that minimizing under-water noise is an important objective, then research effort can be directed at measuring sources of noise and devising means of mitigating their effects. More specifically, if we are able to understand the frequency, timing and significance of the use of sound by the marine mammals targeted for tourism we could deliberately seek to reduce the amount of sound produced by tourism operations at those frequencies, at those times and in those locations. For example, we can, through research, gain an understanding of the frequency of communication whistles and clicks from dolphins at a particular location. We can also learn through research when and where these sounds are used for particular tasks, such as foraging. If we understand this we can restrict tourist activity at particular times and in particular locations so as to minimise potential disturbance to the targeted marine mammals.

This kind of approach to research is potentially more cost effective and more likely to mitigate negative impacts on the targeted marine mammals. What we are advocating here is that rather than direct research effort at quantifying and demonstrating an impact and then advocating for
management change, we should direct our research effort at minimising any potential effect through a sound understanding of the needs of the marine mammal. This kind of approach is consistent with the precautionary principle and well suited to an adaptive management type of approach. To give specific examples of how this could work in practice: If we know a particular location and time of day is important for resting then we should ban tourism activity from that location at that time. Conversely, if we know that a particular location and time is typically used for social interaction then let’s permit the tourism activity to occur at that place and at that time. Similarly, if we know that a particular species uses a certain frequency range for communication then we should ensure that tour vessels do not emit sounds at that frequency range or at a volume that masks such communication.

Current approaches to managing marine mammal tourism have concentrated on such issues as restricting numbers of vessels, minimum approach distances, maximum approach speeds and approach direction. In considering the potential impacts of sound (deliberate or otherwise) on marine mammals it seems likely that a similar kind of approach will be taken. That is, management will attempt to control vessel types, require certain propulsion systems and ban or curtail the deliberate use of sound. Such an approach seems to us to perpetuate a management model that has not been overly successful in reducing the impacts of marine mammal tourism to date. What we are advocating is that rather than scientists being required to ‘prove’ tourism activities negatively impact targeted marine mammals before management is designed to address the issue, an alternate approach is needed. Namely, we accept that we need to do all we can to minimise the potential impacts that vessels, tour operations and the sounds they produce can have. Research effort at designing quieter vessels and other actions intended to minimise under-water noise must be a better way forward.

CONCLUSION

For Maori in Aotearoa/New Zealand a number of important concepts are central to their worldview (Cheung, 2008). ‘Kaitiakitanga’ is the expression which is used to describe the duty of care or responsibility that Maori consider central to their relationship with nature. Translated it means guardianship or stewardship and it implies that there are values (kaupapa) and codes of behaviour (tikanga) that guide this relationship. For Maori, nature and other living things as well as ancestors and spirits and the world are connected and interdependent. This paradigm is not unusual in indigenous cultures (for example, the spirit of ubuntu of the Xhosa of Southern Africa) and it closely aligns with ecological principles of interconnectedness. The wisdom of these approaches is important with regard to the issue of noise. On its own, noise can be viewed as a relatively transient and, perhaps discrete issue for marine resource management. It is not as tangible as extractive activities such as fisheries and whaling. It does not appear to as inherently harmful as dumping, oil spills or dredging. It is, however, one of those chronic insidious human-made influences that can compromise the integrity and viability of the whole. For Maori it can be viewed as an insult to Tangaroa (the god of the sea). It is a potential exploitation of their ‘taonga’ (culturally significant treasure) and a compromise to their wairuatanga (spirituality).

At the presentation we attended in Tamaki-makau-rau (Auckland), marine acoustics expert Dr Chris Clark graphically and convincingly presented data that showed the scale of the problem of ocean noise. It was sobering and disturbing, but what was more striking was the reaction and korero (speech) of Rawiri Paratene afterwards. It was obvious to us in the audience that he, as Maori, felt deeply insulted by the growing impacts that ocean noise was having. More significant than this, he expressed that he felt diminished by human-kinds collective actions in both producing these sounds and our inaction with regard to trying to reduce them. He expressed, on our behalf, a common deep-seated reaction within each of us present which re-emphasized the great dilemma and challenge:
How do we manage our use of marine environments so that we do not diminish the special values and significance they have for all of us, human, non-human - those who have gone before us - and those who will come after?

REFERENCES


FEEDING AMAZONIAN BOTO (*Inia geoffrensis*) AS A TOURISM ATTRACTION. A PATH TOWARD TRAGEDY?

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ABSTRACT

A previously unreported case of provisioning (feeding) of Amazon river dolphins (boto) has developed in the Central Amazon region. This provisioning has followed a pattern of increasing popularity for tourists and an escalation of assertive behaviour from the dolphins that has been reported for such activities elsewhere. The growth of this tourism activity in two locations in the Amazon is currently poorly managed and there is a high risk of injury or fatality should the interactions continue to develop.

Keywords: Dolphins, feeding, tourism, boto, Amazon.

INTRODUCTION

There are a number of accounts throughout the world of wild individual dolphins, that frequent a particular location and become habituated to human presence (Orams 1997). This habituation can lead to regular interactions with humans through playing, touching, feeding and communicating (Orams 1994). While there are a number of hypotheses, it is still not clear why these dolphins seek human company (Lockyer 1990). In Brazil, Santos (1997) described a case of a lone sociable bottlenose dolphin (*Tursiops truncatus*) that eventually injured a number of tourists, one fatally. Despite the wide range of reports of sociable wild individual dolphins, there are few reported cases involving groups of dolphins. Notable exceptions are the significant long-term relationships between a group of dolphins and humans that occur at Monkey Mia, Shark Bay in Western Australia (Connor and Smolker 1985) and at Tangalooma on the western shores of Moreton Island, offshore from the city of Brisbane, also in Australia (Orams 1994). Both these interactions are promoted as tourism attractions and are facilitated by deliberate provisioning (feeding) of these groups of dolphins (*Tursiops* sp.).

Both provisioning and swim-with-dolphins activities which are promoted as a commercial tourism activity have increased over the past decade (Hoyt 2001). Swim-with (dolphins and whales) tourism activities now target at least 20 cetacean species worldwide, and new programs continue to be initiated (e.g. see Samuels et al. 2000, 2003; Hoyt 2001). Human provisioning of wild dolphins as a tourism attraction has become controversial (Orams 2002) but continues to occur at a number of locations. Such activities which provide tourists with opportunities for close interaction with wild
dolphins are certainly popular. Monkey Mia, for example, is reported to have attracted over 100,000 tourists each year (Dowling 1992).

Given the predicted continued growth of coastal, marine and nature based tourism, it seems highly likely that there will be an increase in the demand for opportunities for tourists to see and interact with marine wildlife in natural settings (Orams 1994). In Brazil, two previously unreported cases of aggregations of wild Amazonian boto (*Inia geoffrensis*) becoming habituated to human contact are occurring in Amazonas State, Central Amazon. Other cases of interaction between boto and people also exist in the area and there appears to be a growing range of locations where boto and both locals and visitors are interacting. Given the risks associated with human wild-dolphin interaction (Orams 2002) it is important that these interactions are documented, understood and carefully managed.

THE DEVELOPMENT OF TOURISM BASED ON FEEDING AMAZON RIVER DOLPHINS (BOTO)

The history of human-Amazon boto interaction in the city of Novo Airão, located on the southern side of the Negro River, in Amazonas State, Brazil, is long-standing. Local fishermen have been known to hand feed some boto for at least two decades. During 1998, Marilda Medeiros (owner of the Restaurante Boto Cor-de-Rosa) and her two daughters saw an individual boto approaching the floating restaurant when they were cleaning (preparing) fish for lunch and throwing discarded pieces in the water. The boto then approached and began to feed on the discarded pieces, eventually developing enough confidence to take fish from Marisa’s hand (the oldest daughter, then nine years old). The family named this boto ‘Curumim’ (which, in the native Tupi-Guarani language, means boy or child). The provisioning of this dolphin occurred from the family’s floating restaurant. This building is also the girl and her family’s home. The hand feeding was also eventually undertaken by the Marisa’s sister and mother. Over five to six months after Curumim became habituated to accepting handouts, other boto started to appear and accept food. The boto accepted any species of local fishes, but generally they gave them cubiu (*Eigenmannia melanopogon*) or jaraqui (*Semaprochilodus* spp.). These fish are common locally, easy to find at local markets and also cheap.

This floating restaurant, called Restaurante Boto Cor-de-Rosa (pink boto restaurant), is located, during high water season (water level can vary twelve meters in average throughout the year), inside a small bay. This small bay forms the harbor for Novo Airão and it provides an anchorage for many boats. Adjacent to the harbor are many residential houses, handicraft stores and local bars (which are responsible for a considerable noise pollution). The harbor is subject to significant boat traffic and, due to poor water circulation, is polluted with sewage, oil and other human created discharges. During low water, the floating restaurant is re-located a few hundred meters from this harbor further toward the main Negro River flow. As a consequence, there is greater water movement and pollutants are carried away and down-stream.

The development of this provisioning of dolphins at Novo Airão has many similarities to that reported for Monkey Mia (Connor and Smolker 1984) and Tangalooma (Orams 1995). The dolphins are locally resident species, the provisioning began on a casual basis with local people.

1 Personal communication from Setenta, President of the Associação dos Pescadores de Novo Airão, Rua Ademar Barros 28, Centro, Novo Airão, AM, Brasil, June 2008.
2 Personal communication from Marilda Medeiros, owner of the Restaurante Boto Cor-de-Rosa, Rua Santo Elias, 20, Nossa Senhora Auxiliadora, Novo Airão, Brasil, May 2008.
3 Personal communication from Marilda Medeiros, owner of the Restaurante Boto Cor-de-Rosa, Rua Santo Elias, 20, Nossa Senhora Auxiliadora, Novo Airão, Brasil, May 2008.
initiating the interaction. Over time the provisioning became more regular and progressed to a hand feeding stage as the dolphins became more habituated to the close proximity of people and accepting the fish provided.

As occurred with the Monkey Mia and Tangalooma cases, news of the interaction opportunity at the Restaurante Boto Cor-de-Rosa has spread and the popularity of the experience has increased. More people, both locals and visitors began to visit the floating restaurant to participate in the provisioning and to interact with the dolphins, visitation can now reach 50 people at one time and total almost 200 over the day. Similarly, as the provisioning became more regular and the first individual boto became more habituated, additional dolphins approached and joined the provisioning. A decade on from the initial development of the provisioning activity with one individual (1998) there are now at least 11 separate individuals being regularly provisioned.

Provisioning of the boto at Restaurante Boto Cor-de-Rosa has also expanded to include swimming with the boto. Within three to five months of the beginning of the provisioning the Medeiros family began to enter the water and to swim with the botos whilst feeding them. Subsequently other locals and visitors also began to swim with the boto off the platform at the restaurant.4

The attraction of the provisioning, swimming and other interaction with the boto has become the main and most profitable activity for the restaurant. Lunch is still offered to patrons, but only on weekends. The sale of alcohol (mainly beer) is the other major income earner for the restaurant owners. In particular, on weekends, groups of friends spend many hours swimming with the boto and drinking beer.

The Restaurante Boto Cor-de-Rosa botos are now the primary tourist attraction for the town of Novo Airão and locals view the development of this activity as having positive benefits for the town. Increased visitation to the town also helps to support other tourist attractions such as visits to the Anavilhanas Archipelago (Anavilhanas Biological Station), the Jaú National Park and handicraft stores and workshops.

A number of tourists come to Novo Airão specifically to feed and swim with the boto. Some transit from Manaus by hydroplane, stay for a couple hours and return to Manaus. Domestic (Brazilian) tourists (mainly originating from Manaus or Manacapuru cities) typically stay in Novo Airão hotels for around two days, particularly on weekends. International tourists generally arrive in Novo Airão via a boat-based river-cruise or are guests at a local jungle lodge. They usually only stop in Novo Airão for a few hours, visit the restaurant and the boto and then leave the town. Novo Airão does not currently have the infrastructure to support this tourism growth. There are few hotels and restaurants and electricity (which is provided by a local thermoelectric power station) blackouts are regular occurrence when there are many tourists in the city.

MANAGEMENT OF THE TOURIST – BOTO INTERACTION

A regular schedule is now conducted for tourists to come and interact with the boto. During weekdays tourists are permitted to feed the dolphins from 09:00 to 12:00 and from 15:30 to 17:00. During weekends, tourists are permitted to visit all day long, from 08:00 to 18:00. During May to August 2008 numbers of tourists interacting with the dolphins each day ranged from one to 48. Brazilian tourists pay approximately US$9 for a portion of fish (eight halves of small fishes, with a total weight of approximately 0.45kg (ten samples were randomly chosen and weighed on ten

4 Personal communication from Marilda Medeiros, owner of the Restaurante Boto Cor-de-Rosa, Rua Santo Elias, 20, Nossa Senhora Auxiliadora, Novo Airão, Brasil, May 2008.
different days) to feed the boto, but they are not charged if they only want to observe the animals. Groups of foreign tourists pay from US$9 to US$13 each, feeding or not. These groups are generally led by their own guide, who gives them some information about the animals and also about how to behave.

On weekends, more than 40 people were frequently observed standing on the seven meter long, 12 meter wide back part of the floating restaurant. This area also has two four meter wide platforms that are near the water level, separated by a four meter submersed platform, where people can access the water where they touch the boto while feeding them. They also use this area as the staging point to step into and out from the water where they attempt to swim close to the boto. Water depth varies from two to four meters near the platforms. Despite being asked by staff not to, many tourists jump into the water from the more elevated platforms. On several occasions such practices resulted in collisions between those jumping in and both people and the dolphins in the water beneath.

There is no strict regulation about maximum number of swimmers permitted in the water at once, and at times, more than 12 people are in the water attempting to interact with the boto. There is little structure to this interaction, few rules imposed, no life jackets and a number of incidents of tourists being accidentally (the animals did not appear to do so deliberately) bitten while feeding were observed. The frequency of such bites increased when the number of tourists was high.

METHODS USED TO OBSERVE DOLPHIN BEHAVIOUR

From May to August 2008 (low water season) an *Ad libitum* sampling method (Altmann 1974) was used to record aspects of the botos’ behavior related to the provisioning and other interactions between botos and people in Novo Airão (47 non-consecutive days). The behavior of all boto being provisioned was consistent with the ‘begging’ behavior described by Samuels & Bejder (2004), in which the dolphin stays in a vertical position with its head out of the water. As a result individual boto were able to be photographed and identified by unique markings and characteristics around the rostrum and head. For example, skin pigmentation pattern, general size, beak size, teeth (presence-absence, coloration, degree of wear). Body characteristics (e.g. body size, body pigmentation pattern, dorsal fin shape) were used as complementary methods. As a result of these observations and photo records 11 individual boto have been identified. The restaurant owner and her daughters claim there are few other individuals frequently seen\(^5\). Previous genetic research on boto in this area (Barezani 2005, Gravena 2007) has confirmed that all 11 individuals being provisioned are males. This was further corroborated during the present work by close observation of the dolphin’s genital area by the first author.

A PRELIMINARY ASSESSMENT OF THE IMPACTS ON DOLPHIN BEHAVIOUR

During the May to August 2008 observations, it was noted that some individuals appeared in the area almost every day (nine consecutive days was the maximum), disappearing from the area for one or two days, and then returning again. ‘Curumim’, the first individual to become habituated and hand-fed, was one of the most regular visitors. Observations conducted in 2008 during day light hours recorded the presence of boto in close proximity to the restaurant at almost all times. Some individual dolphins (one named ‘Vi’, for example) remained next to the restaurant for hours at a time presenting begging behavior.

\(^5\) Personal communication from Marilda Medeiros, owner of the Restaurante Boto Cor-de-Rosa, Rua Santo Elias, 20, Nossa Senhora Auxiliadora, Novo Airão, Brasil, May 2008.
The regularly provisioned dolphins will now jump out of the water in order to take fish from the hands of people. In some circumstances when there are many dolphins and only few people feeding, jumps occur simultaneously and collisions are common. Competitive, aggressive interactions between dolphins, pushing, ramming and biting are also common.

During the 2008 observation period (n= 47 days), the mean number of dolphins present in close proximity to the restaurant and being provisioned was 5.6 individuals. However, typically only two or three animals were interacting with people at any one time. Each individual received a mean of 0.44kg of fish (thawed from frozen) per day, but this amount reached 1.8, 2.7 and 3.6kg for particular individuals on three occasions. The species were the cheapest found on the local markets or directly purchased from local fishermen, mainly cubiu or jaraqui, but sometimes other species were obtained in order to feed the dolphins. The fish is generally sold still frozen. Some people put the fish on the water for some seconds, before giving it to the animals, but in most situations fish still frozen is given to the boto. There is no attempt to ensure the fish are handled hygienically, nor is there any system of measuring or controlling the quantity of fish given to individual boto.

On Tuesday mornings each week, the interaction activities at the Boto Cor-de-Rosa restaurant are reserved for the patrons of a cruise ship, the Iberostar Grand Amazon. Tourists from onboard the ship are divided into groups of 25 or less. These groups are ferried to the floating restaurant on small outboard motor powered boats. Generally they are given a brief lecture inside the restaurant, which is given in Portuguese by the restaurant owner, and simultaneously translated into English by their guide (each group has one guide). After the lecture, the group is directed to the rear of the restaurant, in order to feed the dolphins. At all interaction sessions (generally less than 20 minutes in duration), tourists are supervised by their guide. The guide gives instructions regarding how to behave and how to feed the dolphins. Instructions include the necessity to push the jumping animals away from the wooden border of the feeding platform with one hand while giving fish with the other. This practice reduces the incidence of dolphins striking the platform. The presence of the guide results in a decrease in the number of the undesirable interactions, including bites. Each tourist receives only two or three pieces of fish, and generally only two people feed at the same time. Some tourists are permitted to enter the water with the animals, but always under supervision of the guide. Up to five groups of tourists from the ship visit the restaurant and feed the dolphins each Tuesday morning.

During the 47-day observation period at Novo Airão, nine separate incidents of provisioning and interactions between local residents (or visitors from nearby cities) and the boto occurred away from the Restaurante Boto Cor-de-Rosa. These incidents took place on the river beach, close to the floating restaurant. The dolphins were attracted by splashing the water with the hands and offering the dolphin’s fish. Generally, only apparently older individuals (based on body size and general color pattern) accepted these fish while approaching the beach area to a water depth of less than one meter.

On these occasions, the feeding and interactions were not supervised and several incidents resulting in injury to the humans were observed. In particular, at least four people were observed to be bitten by dolphins while feeding them and on one occasion an individual retaliated by punching the dolphin with a closed fist (first author, pers. obs.). Local people informed researchers of a case where a person feeding and harassing the dolphins was rammed in the chest by a dolphin (dolphin’s rostrum driven into the man’s chest area) and, as a consequence this person was taken to the hospital in Manaus (the State Capital) for treatment.

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6 Personal communication from Marilda Medeiros, owner of the Restaurante Boto Cor-de-Rosa, Rua Santo Elias, 20, Nossa Senhora Auxiliadora, Novo Airão, Brasil, May 2008.
This kind of escalation of dolphin’s behaviour from habituation to increased confidence, assertiveness, ‘pushiness’ and potential eventual aggression was observed at Tangalooma and reported by Orams et al (1996). The risk of such behaviour is widely understood in the case of provisioned wildlife (Orams 2002) and is exemplified by the boto of Novo Airão. The potential consequences of such an escalation were dramatically illustrated in the the case of Tião, a solitary sociable bottlenose dolphin, in São Paulo State in 1994. Santos (1997) reported that bathers’ attempting to interact with the dolphin behavior varied from simply touching the animal, to grabbing its fins, to hitting it and to jumping on it; some bathers even attempted to put ice-cream sticks into its blowhole. The author stated that the dolphin reacted aggressively when repeatedly harassed and injured 29 bathers, who were sent to the hospital with minor injuries; on 8 December 1994, Tião struck a 30-year-old bather who died several hours later from internal bleeding due to a stomach rupture.

Fishers are also occasionally observed attracting the boto with fish handouts from their boats, inside the bay of Novo Airão. These interactions were observed on four occasions during this study. On one occasion, six fishermen entered the water and were trying to physically restrain a dolphin, despite noting that the animal was always trying to escape.

During a separate study (unpublished) focused on fisher-boto interactions in the Novo Airão region, 44 interviews were conducted with local fishers. Preliminary analysis revealed a general consensus that the fishers considered boto as their primary natural enemy. This attitude is derived from fishers views that boto damage their fishing nets and steal their fish. According to Silva & Best (1996), hostility towards dolphins from commercial fishermen in the Central Amazon is commonplace. It appears that the situation is the same with artisan fishermen of Novo Airão. These attitudes led to a widespread practice of fishers deliberately killing boto, despite the fact that traditional superstitions have countered hostility towards dolphins in the Central Amazon and provided protection for boto (Silva & Best 1996). These deliberate killings of boto began to lessen five or six years ago and are commensurate with the beginnings and growth of the provisioning of boto at the Restaurante Boto Cor-de-Rosa. It is possible that local fishers (some killing and attempts to harm boto do still occur in the area) may now perceive the value of boto as a tourism attraction and economic resource for the community.

Some education regarding boto has been undertaken in the Novo Airão area and these activities may also be responsible for changing attitudes of locals towards the dolphins. For example, on 21 May 2008, 84 local children from two local schools (6-13 years of age) participated in an interaction session with the boto at the Restaurante Boto Cor-de-Rosa. Three teachers were together with the group. The children were given a talk by the owner of the restaurant and showed intense interest in the dolphins. Many children expressed fear about the boto; much of this fear appeared related to local myths. Questions such as: “are the boto evil animals?”, “do the boto take us to the bottom of the river?” are derived from local mythology and superstitions regarding boto. After the lesson, children were divided into four groups of 21 children, and taken to feed and interact with the animals. The restaurant owner’s daughter gave instructions to the students about how to offer fish to the dolphins. Initially the children stayed distant, but after a short period, they start feeding and touching the boto. This experience resulted in expression of great happiness. Interviews were conducted with some of the children and with the teachers after the session. These interviews revealed the significance of the experience with regard to participant’s attitudes and views toward boto. One local teacher, when asked about the positive points of this activity, said: “It creates

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7 Personal communications from Marilda Medeiros, owner of the Restaurante Boto Cor-de-Rosa, Rua Santo Elias, 20, Nossa Senhora Auxiliadora, Novo Airão, Brasil, May 2008, and from Setenta, President of the Associação dos Pescadores de Novo Airão, Rua Ademar Barros 28, Centro, Novo Airão, AM, Brasil, June 2008.
conscience that the superstitions are lies”. One eight year old child commented: “I want the boto to live forever, and don’t want my father to kill them!”.

THE EXPANSION OF PROVISIONING TO A SECOND SITE

A second program where boto are being provisioned as a tourism attraction has been initiated at the Bototerapia Ariau Towers, a commercial tourism facility based on a floating structure. It is located near the Negro River, in a small tributary named Ariau, approximately one hour by fast boat from the city of Manaus, and is approximately 20 minutes away from the Ariau Amazon Towers accommodation and main facilities. At this location water from both the Negro and Solimões Rivers converges and results in an abundance of fish and other wildlife.

The development of this interaction with the Amazon boto differs in many aspects from the Novo Airão case. Its beginning was not opportunistic as in Novo Airão, rather it was a deliberate attempt to create an interaction opportunity for tourists with boto after the popularity of the Novo Airão case was observed. Ariau Amazon Tower’s managers began work in 2005 to attract the boto and attempted to create regular provisioning by throwing big quantities of fish into the river for the dolphins. A minimum of three staff members stayed at the resort at all times in an attempt to try and habituate the boto to regular human provisioning. Many boto already frequented the area before the beginning of these habituation attempts and after some months, some individuals started to come closer, and eventually some started to take hand held fish. The development of this provisioning as a tourism attraction bears a close resemblance to that described by Orams (1994) at Tangalooma, Australia. Today, according to Ariau Amazon Towers’ staff, more than 25 individual boto are known to frequent the waters surrounding the resort and to accept fish hand-outs from staff and resort guests.

The activity has proved popular with tourists visiting the resort and staff report that the numbers of people participating in the provisioning facilitated interactions are increasing and on some days over 100 tourists participate.8 These tourists are charged the equivalent of around US$90 to participate and, as a consequence, the development of the provisioning of boto has proved financially lucrative for the resort. Due to high prices, most part of the tourists frequenting the Hotel and the boto interactions activities are from other countries; a much smaller percentage is from other regions of Brazil, and only a minimum number are constituted by tourists from Manaus and near cities.9

The Bototerapia Ariau Towers environment differs greatly from that at Novo Airão. Because it is located in a remote setting there is little boat traffic and no nearby residences or human activity. As a consequence, the river where the boto interact with people is relatively clean and they are less disturbed by human activity. Furthermore, because the interaction is specifically created as an attraction for resort guests, the provisioning is more carefully managed. For example, all tourists wishing to feed and interact with the boto are supervised by a staff member, those tourists who swim with the dolphins are required to wear a life-jacket (buoyancy aid) and the feeding of fish to the dolphins is closely monitored. An interesting feature at Bototerapia Ariau Towers is a submersed platform where tourists can enter the water and stand on the platform to feed the dolphins.

8 Personal communication from Curió (staff member), Ariau Amazon Towers, Rua Leonardo Malcher 699, Centro, Manaus, AM, Brasil, July 2008.
9 Personal communication from Ellen Honorato (VP), Ariau Amazon Towers, Rua Leonardo Malcher 699, Centro, Manaus, AM, Brasil, July 2008.
At the Bototerapia Ariau Towers an initiative to establish an interaction with boto as a tool for therapeutic sessions with disabled children is being experimented with. Dolphin-Assisted Therapy (DAT) is an increasingly popular choice of treatment for illness, disability, and psychopathology in children and adults (Whale and Dolphin Conservation Society 2006), DAT formally began in the 1970s and over the years has grown into a highly lucrative business with facilities all over the world, including in the United States, Mexico, Israel, Russia, Japan, China, and the Bahamas (Marino & Lilienfeld 2007). Accordingly to these authors, the claims made by these facilities have been subject to little or no scientific scrutiny; moreover, there has been no significant increase in the rate of peer-reviewed papers on DAT from the 1970s to the present. Yet DAT programs continue to proliferate and new programs are appearing in a range of new locations. As a consequence, DAT’s popularity greatly outstrips its meager research base (Marino & Lilienfeld 2007).

Bototerapia Ariau Towers is a further example of its expansion to a new location and with a different species. Around once per month at Ariau a small group of children (around six children) with physical or psychological disabilities and/or emotional problems, from a local orphanage, are invited to participate from one session. Each child is assisted by a resort staff member and a physiotherapist (who runs the program) to enter the water on the submersed platform. If the child is calm and confident, they swim off the platform and try to interact with the boto. The staff member attracts the dolphin by offering fish and the physiotherapist encourages the child to touch the dolphin.

At present, the boto at Ariau Amazon Towers appear less habituated than those at Novo Airão. They exhibit less ‘begging’ behavior, approach tourists more cautiously and take hand-held fish less frequently. This scenario may be an artifact of the shorter period of time that these dolphins have been engaged in the provisioning program and/or the fact that the area they frequent has less human activity and influence, hence they have had less contact with people.

It is also worth noting that the boto which are provisioned at Bototerapia Ariau Towers appear to be males as they are at Novo Airão and genetic analyses of samples taken from seven individuals at Ariau showed that all seven are males (Gravena 2007).

CONCLUSION

This is the first report of Amazon boto being provisioned as a tourist attraction. It is evident that the establishment of these tourist – dolphin interaction opportunities is facilitated by the deliberate feeding of the dolphins and that this activity has become financially lucrative for local people. It is also clear that this activity is fraught with risk, both for the dolphins and for the tourists. The escalation of assertive behaviour on the part of the dolphins, the retaliation from tourists and the lack of management control or understanding of the potential implications of this provisioning is worrying. It is of vital importance that these activities are carefully evaluated and that an appropriate management regime is adopted and enforced. If it is not, the risk of injury and fatality to both dolphins and people, increases greatly.

There are some efforts at both sites to reduce risks however there is an urgent need to improve the situation. In Novo Airão, the owner of the Boto Cor-de-Rosa floating restaurant is supportive of researchers and research activity. Lessons from other locations, such as Tangalooma and Monkey Mia, where dolphins are provisioned has shown that with careful management and monitoring risks can be reduced.

The regime utilized by the Iberostar Grand Amazon cruise ship when visiting the Boto Cor-de-Rosa could be used as a good starting point and all other interactions could be controlled in a similar
fashion. Further measures such as keeping the floating restaurant away from the inner bay of Novo Airão, restricting and measuring fish amounts, banning touching the dolphins and carefully supervising all interactions should be implemented. A wider public education program needs to be conducted in order to promote a greater understanding of the species and their general environment and the need to restrict provisioning and interaction to carefully managed venues. This education program should initially focus on local schools and fisher associations (there are two in the city) and then be extended to the wider society.

The case of Tião provides a good example to learn from. After the human fatality, a management program was planned, focusing on (1) public education, (2) media control and (3) prevention of “harmful” interactions between the dolphin and human beings (Santos 1997). Brochures about how to behave in the dolphin’s presence were distributed, swimmers were asked to leave the water when beaches were crowded and the dolphin appeared and free lectures were presented to the public in general. The author claimed that these actions resulted in the elimination of accidents associated with this human-dolphin interaction.

The Tangalooma case was described as the first time that human-wild dolphin interaction experiences have been used for the purposes of promoting tourism to a resort (Orams 1994). Both cases described here for the central Amazon share similar characteristics with that reported for Tangalooma. It is likely that the financial success obtained by these two boto interaction programs will prompt other similar initiatives elsewhere in the Amazon region. There are a number of anecdotal reports of new cases of people trying to attract boto by giving them fish handouts and trying to habituate them to human contact, in Manaus and other smaller cities in the Amazonas State (e.g. Tefé).

As described by Orams (1997), whales and dolphins in the wild are “big business”. Hoyt (2001) reported that cetacean-focused tourism is a one billion US dollars industry attracting more than nine million people per year in 87 countries and territories. The line between commercial exploitation of marine wildlife and mutually beneficial interaction is particularly thin. The way the interaction is controlled and managed will be the difference (Orams 1994).

It is important to note that while this kind of tourism has significant risks, potential benefits also exist. Humans enjoy interacting with dolphins and whales and can obtain psychological benefits from it. In Novo Airão, the activity has been responsible for a variety of social and economic benefits for the local community and may have contributed to a drop in the number of deliberate killings of boto by local fishers. There is evidence from other locations (Orams 1996) that these kinds of interactions, when carefully management and combined with effective education, can prompt people to become more environmentally responsible. This new boto based tourism in the Amazon region is poised at an important threshold. If managed carefully, it could bring important benefits to the local region and reduce risks to an appropriate minimal level. If not, a tragedy is imminent.

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SECTION B

WORKING PAPERS
INTRODUCTION

The Mediterranean region is one of the most popular destinations for tourism. In 2008, Southern and Mediterranean European countries received 179.2 million international tourists, 19.4% of the world total (UNWTO, 2009). This is almost as much as the total international arrivals to all Asia and the Pacific (20.4%) and more than any other world region.

Coastal regions are major tourist destinations in Europe and more specifically in the Mediterranean. The European Union estimates that about 60% of trips within Europe with at least four overnight stays take place by the seaside; closeness to the sea remains as a major selection criteria despite the common opinion of a growing importance of cultural and nature-based tourism. Climate and scenery are the predominant motives for choosing the holiday destination (Leidner, 2004).

The overall objective of the present research was to extend our understanding about the role of climate as a pull factor attracting tourists to the Mediterranean and the potential impacts of climate change in tourism flows from northern Europe to the Mediterranean area. Specific objectives of the study were:

- To determine the relative importance of climate in contributing to the overall attractiveness of a Mediterranean tourism destination;
- To examine the relative weight of different climate parameters for beach tourism and tourists definition of ‘bad’ and ‘ideal’ weather for beach recreation;
- To explore two major assumptions existing on literature about climate change impacts on Mediterranean tourism: (i) influence of heat-waves and (ii) the possibility that north European tourists will stay at their home country or neighboring regions.

Based on the previous objectives a questionnaire was designed and structured in four main sections although only the results of the first three are presented here.

- Section 1. The role of climate as a key pull attribute to the Mediterranean
- Section 2. Effect of temperature:
  - 2a. Role of temperature and other weather parameters for beach tourism
  - 2b. High temperatures are not necessarily a negative factor for beach tourism
- Section 3. Perceptions about climate change impacts in the Mediterranean destinations
THE STUDY

Methodology and data collection

With the aim of addressing Belgium and Dutch tourists traveling to the Mediterranean a questionnaire was elaborated to be carried out in the departure hall of different airports.

The self-completed questionnaire was elaborated in three languages (Dutch, French and English) and a pre-test was carried out in Maastricht-Aachen airport to test wording, layout and completion time. After this, the survey was adjusted accordingly and it was eventually carried out on 3 days of May and June 2007 in the check-in areas of the Rotterdam and Brussels airports.

Results

A total of 118 questionnaires were distributed and returned. Three of them were only partially answered and therefore not included in the analysis. The results presented below are for the 115 questionnaires that were completed (the size of the sample is specified for each question as in some cases some answers were missing).

Section 1: The role of climate as a key pull attribute to the Mediterranean

From all the activities tourists planned to carry out at their destination (multiple choices possible), beach tourism was selected by 76 of the respondents (66.7%), more than double the second activity, cultural tourism, which was selected 37 times (32.5%). The attractiveness of the destination was measured based on 14 attributes, using a Likert scale from unimportant (1) to very important (5). ‘Climate’ is the attribute that contributed the most to the attractiveness of the destinations (mean 4.56) for the overall sample (N=115), but even if the analysis is limited to the respondents that will not be involved in beach tourism (38 did not choose this activity), ‘climate’ still obtains the highest score (mean 4.50).

Section 2a: Role of temperature and other weather parameters for beach tourism

The next set of questions aimed at investigating in depth the relevance of weather specifically for beach tourism. First, respondents were asked to grade how important a set of weather variables were, again using a Likert scale from not important to extremely important. ‘Absence of rain’ was the aspect seen as most important (mean 4.28), followed by ‘comfortable temperature’ (mean 4.22).

Section 2b: High temperatures are not necessarily a negative factor for beach tourism

In the opinion of the respondents, the climatic conditions that characterize a day of ‘unfavorable weather’ in relation to beach tourism are mainly related to the ‘presence of precipitation’ (87 respondents or 75.7%) and ‘strong wind’ (66 respondents or 57.4%). ‘High temperatures’ ranked in the fifth position (23 respondents or 20.0%), only followed by ‘high humidity’ and ‘low humidity’.

Based on this notion of what ‘unfavorable conditions’ are for the different respondents, they were asked how they would react if, before booking their holiday package, they would know they would find this bad conditions during at least half of the time of their holidays (figure 1).
Figure 1. If, before booking, you know it will be ‘unfavourable weather’ at destination during half of the time of the holidays, what would you do? (N=113)

Section 3: Perceptions about climate change impacts in the Mediterranean destination

Finally, the last question explored the effect on tourists’ satisfaction of five different potential impacts of climate change in the Mediterranean based on existing literature. The five impacts had to be rated from no influence (1) to very negative influence (4) (figure 2).

Figure 2. Perceptions about climate change impacts

Discussion

Climate plays a very important role as a pull factor for tourists visiting the Mediterranean even when they are not involved in beach activities. Existing tourists’ comfort studies predict a negative future for this region due to their focus on the relevance of temperature and heat stress (Amelung & Viner, 2006; UNWTO, 2008). This pilot study approaches these complex but relevant issues.

The results support previous studies about the key role of climate as a pull attribute attracting tourists to the Mediterranean (Morgan et al., 2000; Kozak, 2002; Hamilton & Lau, 2005). Not only climate achieved the highest ranking of the 14 attributes provided, it was also selected by 76.5% of respondents as the first or second most important attribute of their destination, independently of the main activity they would do during their holidays and the destination country.
The ranking of the weather parameters for beach tourism support the findings of other empirical studies indicating that temperature does not occupy the first place as the most important (Morgan et al., 2000; de Freitas et al., 2008).

In relation to the role of temperature, whereas it is seen as an important aspect, high temperatures are hardly considered as an ‘unfavorable weather’ aspect for beach tourism. The relatively less importance of temperature as compared to other weather elements has important implications for future assessments of climate change impacts on beach destinations in general and on the Mediterranean specifically, and suggests past assessments to be revised (see for example Moreno & Amelung, in press, for a reassessment of impacts). This result is even more significant when compared to other climate change impacts.

CONCLUSIONS

The Mediterranean, a world leading tourism destination, has been identified as a major vulnerable hotspot to climate change impacts. Increasing temperatures have been identified as a key hazard, leading to tourists’ heat stress and therefore a potential decrease in the attractiveness of the region. Improvements in weather conditions in tourists’ home countries and neighboring areas has also been suggested as a potential threat to Mediterranean tourists, as progressively more of these tourists would stay in their home country rather than traveling to the (over-)heated Mediterranean. The findings of this pilot research are notably important as they have shown that the role of temperatures might not be as dominant as initially expected and that other weather components are considered more relevant. Specifically, high temperatures are not necessarily associated with ‘bad weather’ for beach tourism. Even when the term ‘heat-wave’ is used, tourists still perceive it as not affecting their satisfaction very negatively. Tourists’ are also unlikely to stay at home even if they have good weather conditions in their own country.

These results have both theoretical and practical implications. From the theoretical point of view, the results invite to review previous studies that analyze climate change impacts on Mediterranean tourism. Studies that used general indices to measure climate suitability might be overestimating the capacity of these tools to project climate change impacts due to the cultural differences that seem to exist and their lack of adjustment to different activities. The high relevance some of these indices (e.g. Tourism Climate Index) give to temperatures does not seem to match the stated preferences of tourists in this and other studies. From the practical standpoint, the results suggest that future research and management interventions should pay more attention to other climate change impacts such as health issues and forest fires.

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A MODEL FOR COASTAL TOURISM: THE COAST ALL IN ONE’S MIND

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ABSTRACT

Globally, coastal areas can be seen as the most popular tourist-recreational destinations. Consequently, these destinations generate major visitor flows (Smeenge, 2008). Furthermore, these destinations are interpreted differently by every visitor, for example depending on lifestyles, age, personal preferences, and so on. These two problems, or maybe chances, are the central focus in this paper.

Within the associate professorship in Visitor Studies visitor management is defined as the striving for balance between the visitor, the destination and the users (including residents) of the destination (Ennen, 2006, 2007). It is introduced here as a strategy to generate and manage desired effects of visitor flows and it sets forth the elements that make up the discipline of visitor management, analyzing the variables of ‘connection’, ‘experience’, and ‘enticement’ of visitors and users.

As a result, this conceptual paper examines what the typical coastal experience consists of and in which ways the producers of the tourist-recreational coastal product can anticipate on this. More specifically, this paper tries to give some insights in the coastal concept or mindset of users and visitors in particular.

After explaining the principles of visitor management, a theoretical framework will be presented that tries to capture the total coastal experience. After this, two existing coastal areas will be projected on this framework. Finally, some conclusions will be drawn.

Keywords: Coastal tourism, visitors, (re)interpretation

INTRODUCTION

Globally, coastal areas can be seen as the most popular tourist-recreational destinations. Consequently, these destinations generate major visitor flows (Smeenge, 2008). Furthermore, these destinations are interpreted differently by every visitor, for example depending on lifestyles, age, personal preferences, and so on. These two problems, or maybe chances, are the central focus in this paper.

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specifically, this paper tries to give some insights in the coastal concept or mindset of users and visitors in particular.

After explaining the principles of visitor management, a theoretical framework will be presented that tries to capture the total coastal experience. After this, two existing coastal areas will be projected on this framework, namely Zeeland, a coastal province in the Netherlands and the Canadian coastal town of Tofino. Finally, some conclusions will be drawn.

VISITOR MANAGEMENT

Central to the domain of visitor management are visitor flows. Visitor flows can be analyzed quantitatively as well as qualitatively. In terms of \textit{quantity}, one might think of a situation where a destination has (too) many, enough, or (too) few visitors. \textit{Quality}, on the other hand, involves desired and/or undesired effects resulting from visitor flows (see figure 1).

![Figure 1: Visitors: quantitative and qualitative approach](source: Associate Professorship in Visitor Management, 2008)

The different situations call for different management approaches, depending on the effects they bring about. For instance, (too) many undesired visitors at a destination can cause negative effects, such as traffic inconvenience and noise nuisance for residents, or damage to objects and sites that are of major significance. (Too) Few desired visitors put the economic viability of a destination at risk, whereas (too) many desired visitors may indeed be attractive to a destination from an economic point of view, these visitor numbers may also generate negative effects of a social-psychological nature for local users such as residents.

Ennen (2007: p3) has defined visitor management as ‘\textit{striving for balance between the destination, the visitor and the user}’ (see figure 2). A destination can be anything. It may be a historical city centre, a theme park, a heritage site, an airport, an attraction, a shopping centre or, in this case, a coastal area. These are all environments where visitor flows are managed or generated for various purposes. Users include both residents and other parties involved, such as businesses, government, institutions and organizations. The degree to which balance is achieved is of major importance to the quality of the destination.

The Associate Professorship in Visitor Studies analyzes the role of the variables of connection, experience and enticement of visitors (see also Ennen 2006, 2007). The variable of connection involves research questions like who are (desired) visitors of the destination concerned, what are their preferences, to what degree do visitors feel connected to a destination and how do destinations contribute to social cohesion in people’s everyday lives? The second variable, experience is about
research questions such as the factors that contribute to a positive experience of the destination and where the turning point lies that changes the experience from positive to negative. Enticement, in conclusion, is the resultant of connection and experience. A sound analysis of the connection and experience of visitors will elucidate how visitors can be enticed to make certain (different) choices or decisions. Enticement, in its turn, is obviously influential to the degree of connection and experience that a destination inspires in visitors.

![Figure 2: Balance between destination, visitor and user](source: Associate Professorship in Visitor Management, 2008)

**COASTAL MODEL**

One of the results produced by the exploratory study ‘*Coastal Tourism: A Tour d’ Horizon*’ (Smeenge, 2008) was a new theoretical framework for coastal tourism. This transformational model of the coast involved a continuous and dynamic process that should by no means be regarded as a preconceived step-by-step plan that can be followed neatly from top to bottom. In fact, it was constructed to give insights in the factors that play a role in the process of coastal resources transforming into tourist-recreational products. Since then, this theoretical framework has been updated in such a way that it represents an even more process-oriented view (see figure 3).
This model represents the continuous process of transformation of coastal resources by all stakeholders (producers and consumers) into a commercial tourism-recreational product (see also Jansen-Verbeke, 1988; Dietvorst, 1992). In other words: there are numerous possibilities to select resources and to transform them into desired products. Resources can be anything, such as different natural environments, (historical) stories, objects and of course coastal areas. By making a selection from these resources, they are in fact interpreted, in such a manner that a product emerges. Consumers, however, also give meaning to the resources, depending on their lifestyle, wishes and overall family and financial situation. The meaning they attach to the resources is what determines the tourist-recreational value in the end. This attached meaning largely depends on how people are connected to the resource, how they experience the resource and how they are enticed to visit the resource (the triangle of three variables in the centre of the model). It is precisely this step that is so important, but overlooked too often. In this process of transformation or commodification (see Ashworth & Tunbridge, 1990), it is mostly just the material or tangible component that is considered, for instance, the construction of new facilities. The other component, immaterial or intangible transformation, is probably much more important. As soon as producers attach a certain tourist-recreational meaning to resources or manipulate these resources (encoding) and consumers also (re)interpret these resources as such (in the most favourable case, and with or without the help of the media), these resources will actually assume value in terms of tourism and recreation. A story or experience value is added to the resources, so to speak.

3. COASTAL CONCEPT

In order to give further direction to the research program ‘Visitors and the Coast’ within the Associate Professorship in Visitor Studies, we decided to focus on two perspectives, namely mental image and physical environment of the coast (see figure 4). From a mental image point of view, the coast is seen through the eyes of the visitor/user, or in other words, the coast all in one’s mind. Every single person has his own thoughts, images and expectations of the coast, often depending on
past experience or obtained information. In this case, you can also speak of a coastal concept or a coastal mindset. In fact, this is rather a more psychological and sociological perspective and the main perspective of this paper.

The second viewpoint, about physical environment, discusses the coast from the perspective of the destination. In concrete terms here can be thought of comparisons of coastal destinations from a historical perspective in the past and/or present. For instance, the way(s) a coastal destination has developed through time or the way(s) the development of one coastal destination differs from another one.

Throughout both perspectives abovementioned the issue of storylines takes a central place. Storylines can be characterized in two different ways. One type of storyline is a consistent narrative or image that is typical for a region and among other things, therefore can be used as a marketing instrument (Moes, 2008). The ultimate goal of a storyline is to create spatial quality and a different perspective on regional development in order to inspire tourist-recreational product development. It is about bringing about a dynamic combination between past and present and regional identity and economic mobility in such a way that synergetic effects will occur (Vromraad, 2006). The second type of storyline is a narrative which is formed within the mind of the visitor of the coast. It is based on past experiences, on stories told by other people and on information gathered through the media. It informs the visitor, thereby enabling him to be making a choice of destination or activity. It can be shared with other people, forming some kind of community.

In this paper the first perspective, the mental image of the coast, is emphasized. Thus the coast can be experienced in the mind as a set of elements which can be recalled at will even if the person is situated far away from the coastline. This mindset consists of loose components which the person attaches a meaning to and arranges them in such a way as to be meaningful to himself. This is more or less comparable to the idea of ‘tourismscapes’ (Van der Duim, 2007). The relations between the components are given meaning by organising them in one or more storylines. As is said before, a memory of the timeline of a day visiting the beach can be such a storyline. Another one could be thinking about the best waves for surfing a person experienced (or heard about).

In a small (n=15) experiment in two workshops for employees of NHTV Breda University (NHTV, January 27th, 2009) we initiated our research by trying to capture the coastal concept. In these workshops, we introduced the participants to some basic information about coastal tourism and our research programme. After this, we asked them to come up with any thoughts, images, connotations or whatsoever they had on coastal destinations in general. It was apparent that the participants could
easily evoke beach images and memories, even if the setting was a dull lecture room without any stimulus at all. Participants could describe sights, sounds and smells of the beach, often originating from early childhood experiences. One person told us that she at that very moment actually smelled the sea! The recollection evoked the sensation.

With the help of the computer programme ‘Mindjet Mindmanager’ we wrote down everything that was mentioned. Subsequently we clustered the obtained data. As you can see in figure 5 the results show a great variety in coastal connotations.

Figure 5: Mindmap of ‘coastal concept’

A few things can with caution be concluded from this (admittedly not scientific) experiment. Firstly it appears that beach memories recollect a very strong experience and have entered long-term memory (Larsen, 2007). Perhaps this is because it often originates from childhood in which new impressions settle easily in the brain. Perhaps this is also the case because a beach experience with its vast expanses of water and sand, its roaring sounds of the waves, is quite an experience for a small child (Lencek and Bosker, 1998).

A mental image can be very important in choosing a destination. It feeds into the expectations before a trip, it colours the actual experience and it helps to position new experiences relative to the old experiences into the mindset in order to create enhanced memories (Larsen, 2007). This is subject to the fulfilment of a person’s needs. If the mental image of the beach can be fulfilled in other ways than actually visiting a beach itself (for instance by going to Tropical Islands near Berlin or city beaches) it can have important implications for redirecting visitor flows to the coast on warm, sunny days.
Of course the image of the beach was different for every person who participated in the small experiment, mentioned above. Every person had other things to tell. ‘There are many different types of tourist out there’ (O’Dell, 2007).

The second viewpoint is the one most commonly known: actually visiting the site itself by ‘being, doing, touching and seeing’ (Crouch & Desforges, 2003). The (beach/coastal) destination tells a story. It is a stage set ready for enacting scripts (Baerenholt et al. 2004). This is all about branding, marketing and segmenting the beach. Particularly useful is the concept of ‘servicescapes’ or ‘constructed physical surroundings intended as sites in which commercial exchanges are to take place and include ambient, social and design factors’ (Bitner 1992; Mossberg, 2007).

The concept of servicescape is often used in relation to retail stores or hotels (Mossberg, 2007). It can also be applied to coastal resorts or beach environments in which stakeholders are working together to get a message across.

SLEEPING ON THE BEACH, ZEELAND, THE NETHERLANDS

The relatively small province of Zeeland (area of 293,389 hectares, about 380,000 inhabitants in 2008) (Kenniscentrum Toerisme & Recreatie, 2008; www.statline.cbs.nl) is one of the oldest and traditional seaside resorts of the Netherlands, located in the Southwest of the country, along the North Sea. It has got a coastal strip of 600 kilometres (www.zeeland.nl). In the whole province tourism is of major importance for the local and regional economy. In 2007, a total of 2,023,000 guests visited Zeeland, of whom 1,321,000 guest were domestic visitors and 702,300 foreigners. Furthermore, Zeeland had in the same year a total of 11,584,300 overnight stays, of which 8,055,000 domestic and 3,529,300 foreign. This means that approximately seven percent of the total guests in the Netherlands in 2007 visited Zeeland and a good nine percent of the total overnight stays took place in Zeeland (Kenniscentrum Toerisme & Recreatie, 2008).

In Zeeland, tourism businesses generally are very small, diverse and fragmented (ZKA et al., 2008). In most cases these businesses are just small family businesses, and the owner is only worried about/attached to his or her own business. As a result, the potential to invest of most tourist-recreational businesses is relatively low, which in turn has consequences for their innovation capacity. In order to overcome these problems, local and regional authorities are trying to combine forces and point everyone in the same direction in order to create a universal image/story of Zeeland. An initial impetus has been given in the form of the report ‘Terug naar de Kust’ (‘Back to the Coast’, ZKA et al., 2008), which must give content to a broader storyline (see also the previous paragraph) that captures and connects all the unique selling points (usp’s) of the Zeeland region.

A few years ago, a number of holiday cottages were built and placed on several beaches in Zeeland, for instance on beaches nearby the towns of Vlissingen and Domburg (see photos 1a and 1b). Because of legislation, these cottages have to be removable, and therefore they are only to be found on the beaches between the months April and October (www.slapenopstrand.nl; www.slaapstrandhuisje.nl). This does not automatically mean that these cottages have a very basic equipment. In fact, just as any other holiday cottage, every single cottage has got a luxury kitchen, bathroom, toilet, television, terrace, and so on. What makes these cottages so special for the Netherlands is of course their location; the beach.

These holiday beach cottages can be seen as an illustration of the model we introduced above. Starting with the producers, they use the resource (the beach) to create a servicescape. The beach is seen as a marginal place in which the everyday realities for the time being can be ignored. It is a place where you can play and do things you normally would not dream of doing (Ryan, 2002). The producers expand this notion of marginality to encode it to offer a unique way of staying the night.
in a traditional seaside resort. In this they create a story which the tourists could actually experience, e.g. sleeping on the beach, looking at the sea.

In this possibly kindling the childhood memory of past seaside experiences or mindset by playing on the beach (e.g. building sandcastles, searching for shells, frisbeeing, running through the sea) and perhaps fantasizing about staying the night as close as possible to the sea. We have seen how strong these memories can be. A night on the beach for some surely must be a dream come true. Imagine yourself waking up in the morning, opening the door of your cottage and stepping out in your swimming gear directly on the beach into the sea! To whom does this not sound appealing? And therefore the producers enticed their audience by making this a real possibility.

Most consumers probably knew about Zeeland as a traditional seaside destination. It is one of the first of the kind in the Netherlands and is well known in the country. The consumers interpret the resource (the beach and the Zeeland region); they also interpret the story of the real-life holiday beach cottages being encoded for them by the producers. Some of the consumers will find this interesting, they make a connection with it. A few will take the step of actually coming to Zeeland and staying there in one of the cottages mainly because of this.

Thus for some of the consumers it sets Zeeland in a different light. Not as a traditional seaside resort, but as something special. Staying in a traditional bed-and-breakfast in Zeeland does not make you popular on birthday parties back home. But staying the night at the beach with all its unique features surely is a tale to tell.

The media are playing a central role in getting the enticement, which was fabricated by the producers, using and expanding the resource by building the cottages, to the audience. Media can be the traditional ones in the form of newspapers, radio and television. But social websites like facebook, flickr and twitter (web 2.0) are increasingly important in getting the message across. In this they facilitate the audience to get connected to the story.

The general context here is the decline in popularity of the traditional seaside resorts in Zeeland in the last decennia (although in last years visitor numbers have increased again, see also the beginning of this paragraph) and the way in which these seaside resorts are trying to counter this. When there is a slight increase in popularity noted seaside resorts have to get on the ‘band-wagon’ in order to secure a slice of the cake. In this they have to ‘stand out of a crowd’ so to speak. The holiday beach cottages are a sure way of doing this.
TOFINO, CANADA: WATCHING THE WAVES

On the west coast of Canada only a few places are accessible for tourists. One of these places is Tofino, a town of about 1700 inhabitants on Vancouver Island. The town was once a small fishing port. Also there was a lot of logging in the vicinity.

In the seventies of the last century tourism was introduced in Tofino. It started as a small surfer resort, but changed to a year-round more up market tourism destination (Gill & Welk, 2007). This change is an interesting one, as it is useful as an illustration of the model introduced above.

The resource used here is the rugged coastline with a lot of inlets, small islands and beaches. It has great surf, because a large part of this coastline lies exposed to the ocean. Previously the surf was used only in summer by the surfing community. The stormy winter months were quiet, until in the mid-nineties of the last century luxury accommodation was built with a direct view of the Pacific Ocean.

One of the producers, the newly built Wickaninnish Inn (www.wickinn.com), introduced storm watching as a new commodified product to fill the quiet winter months. As so often is the case this was not the result of shrewd marketing plan, but discovered more or less by accident. The owners of the Inn, the McDiarmid-family used to have a cabin in the area. Whenever a winter-storm was about the kids went outside to watch the breakers and totally forgot to watch television. This notion got stuck with the present owner and manager Charles McDiarmid. In 1996 the Inn was built with every hotel room, lobby and restaurant supplied with a view of the ocean. So the Inn by creating a servicescape encoded the resource for use by the customers. It even went this far as to make it possible to watch a storm from the bathtub in the room.

Of course the media publicized this widely (e.g. The Times Weekend, 1998; Süddeutsche Zeitung, 1999). This attracted the attention of lots of visitors, not only from Canada, but also from the United States and even from Europe. They, the customers, interpreted this as an opportunity to enjoy the force of nature, without being in any personal danger at all. No rain or hail in your face, no wind to stand up against. Just watching the fierce breakers from the warm and cosy atmosphere of the hotel, perhaps with a drink within reach.

So this is a possibility to experience nature at its fiercest, with the enticement of doing this from your hotel room, thus without leaving your comfort zone. Nature watching is now possible not only for the rugged nature freak, but also for the weak-hearted city dweller. Thus this commodification of the coast makes a connection with a new audience, enlarging the population interested in coming to Tofino.

CONCLUSION

Within a given context the model presented above can be used to analyse some of the ways in which a coastal destination can mark its way into the customers’ minds. In order to successfully entice the customer to a coastal destination it is important to have a clear idea of the coastal mindset(s) of the visitor and the stories in which they organise the components of this mindset(s).

The coastal producers use the resource (the beach, the resort) and the media to reach out to the customers. In the case of Zeeland the beach cottages are an instrumental servicescape to counteract the decline in popularity of the resorts in this destination. They play into the (youth) memories of people in facilitating a perhaps once held dream: sleeping on the beach.
In the case of Tofino the possibility of securing a new market was shown by opening up the force of nature to audiences who wouldn’t otherwise dream of coming. Experiencing the big breakers on the shore was once an experience for the rugged. Now it can be enjoyed in luxury.

Based on their coastal mindsets the customer interprets if what is on offer connects with their coastal concept. If so they probably experience it accordingly to the mutual benefit of producer and visitor. The ideal situation is reached when a balance is created between the destination, the visitors and the users by using the tools ‘enticement’, ‘connection’ and ‘experience’.

Finally, it has to be emphasized that our research still is work in progress. With the first results of our small mindmapping experiment mentioned earlier we actually just have started. In the future, we hope to make more contributions to this topic and also to be able to present more scientifically valid results.

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WHAT DO FISHERS THINK OF SCUBA DIVERS?
SOCIO-ECONOMIC IMPACTS OF THE SCUBA DIVING INDUSTRY IN THE SOLOMON ISLANDS.

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ABSTRACT

As a strong economic force in tropical developing countries, scuba diving has the potential to serve as a great incentive for coral reef protection. If it is to fulfil this potential, however, it is essential that indigenous communities have a positive perception of the diving industry, and a share of the income it generates. Semi-structured interviews in three regions of the Solomon Islands were used to gather data on fishers’ perceptions, and spatial use by divers and fishers was established. Significant differences in perceptions were found to exist between villages; positive attitudes to the diving industry in one village could be attributed to a low reliance on fishing, direct benefits such as enhanced income diversification into sales of woodcarvings to scuba divers, and the presence of an innovative community-based diving business. Villages with more negative opinions were found to be influenced by long-standing land conflicts due to Customary Marine Tenure (CMT) and the presence of a no-take Marine Protected Area, as well as frequent contact with a pro-conservation dive operator. Spatial analysis of fisher’s sea use revealed few areas of overlap with common dive sites. However, hostility between groups remains in some areas, though direct spatial conflicts were not observed. Fishers were keen to learn to scuba dive, and motivations appeared to be influenced by reliance on fishing and levels of involvement with the industry. The potential for community-based scuba diving enterprises in the Solomon Islands was judged to be promising although exposure to western culture and over-reliance on tourism could have negative impacts.

Keywords: scuba diving, fisher perceptions, spatial use, customary marine tenure, ecotourism

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WHOSE RIGHTS, WHOSE OCEAN? CHALLENGES FOR MPAs IN THE UNITED STATES

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ABSTRACT

Recent contributions to the established scientific literature have re-energized the so-called rights-based fishing movement (Costello et al. 2008; Heal and Schlenker 2008). These publications were accompanied by simultaneous releases in popular outlets emphasizing that the former had “proved” that “privatization” could save fish stocks (see, e.g., Anon 2008; Dean 2008). Arguably, we are witness to the culmination of over a decade of emphasis on private ownership as the key to ocean stewardship (Neher et al. 1989; Shotton 2000). In this paper, we build off previous critiques of the emphasis on private rights to what are already publicly owned resources (Macinko and Bromley 2002; 2004). It is now becoming evident that the perception of private rights for selected users of ocean resources can, not surprisingly, conflict with the claims and interests of other users of ocean resources (Bess and Rallapudi 2007). We use this literal sea of competing interests to examine the burgeoning interest in marine protected areas (MPAs) as a management tool. Specifically, we explore the emphasis on private rights from the contextual perspective provided by the use of MPAs as a management tool. We suggest that it is time to take calls to treat ocean management as analogous to terrestrial management seriously and that doing so would identify MPAs as analogous to parks. Thinking about private rights to public parks adds clarity to the public policy choices that are presently obscured by the exclusive focus of the rights-based fishing literature on management as an exercise in industrial efficiency.

Keywords: rights-based fishing, catch shares, MPAs, marine parks, fishery/tourism interactions

REFERENCES


‘ISLANDNESS’ AS A RESOURCE: A LOOK AT HOW BEING SMALL AND ISOLATED HAS FOUND A PLACE IN A GLOBALIZING WORLD

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ABSTRACT

Due to their small size and relative isolation, islands have historically been categorized as places of refuge. In modern times, islands continue to serve as tourist destinations. Globalization, population growth, and depleting natural resources threaten the allure of many small island destinations. Arguably, the geographic barrier that inherently defines an island as an island - the ocean - is its most alluring feature. Our aim is to discuss ‘islandness’ (an ambiguously defined variable that scholars often use to describe what makes an island an “island”) as a resource. We begin with a brief, succinct definition of islandness, followed by an explanation of the marine environment’s role as a fundamentally essential aspect of islandness. We then address the allure of islandness and consider why islands have been and continue to be destination choices for so many tourists. We conclude with a discussion of the potential threats to island allure imposed on many small islands by mismanagement, overpopulation, and environmental degradation.

Keywords: islandness, insularity, island tourism, island identity

REFERENCES


SOCIO-ECONOMIC ASPECTS OF BOAT-BASED ECOTOURISM DURING THE SARDINE RUN WITHIN THE PONDOLAND MPA, SOUTH AFRICA

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ABSTRACT

Understanding recreational aspects of the sardine run industry is crucial for the protection and sustainability of the Pondoland Marine Protected Area (MPA). Between June and July 2007 a total of 128 people visited the Pondoland MPA to experience the sardine run using a boat-based access. An onsite questionnaire survey of 108 (84.4%) participants at Port St Johns and Mbotyi indicated that the direct value of the event was R5, 470, 805 (95% C.I. = 5, 144, 146 – 5, 817, 299). Although the benefits of the sardine run industry extend throughout the South African economy, local indigenous communities receive little direct benefit. Almost half of all sardine run participants, however, showed a willingness to contribute R500 or more towards a community development programme. On a ranking from 1 to 5, where one is poor and five is excellent, the average participant response to overall quality of experience and quality of dive charter was 3.9 and 4.4, respectively. Many participants (27%) never saw a sardine, despite the fact that their trip was marketed as the “sardine run”. As a result, participant experiences often did not meet with expectations. The sardine run within the Pondoland MPA is currently an under-marketed and under-exploited resource.

Keywords: Ecotourism, Marine Protected Area, Pondoland, Sardine run, South Africa
RECREATIONAL ASPECTS OF THE TIGER SHARK DIVING INDUSTRY
WITHIN THE ALIWAL SHOAL MARINE PROTECTED AREA, SOUTH AFRICA

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ABSTRACT

Understanding recreational aspects of the tiger shark diving industry, including data on participant expectations, experiences and expenditure is crucial for the effective management of the Aliwal Shoal Marine Protected Area, South Africa. Between January and December 2007 a total of 2133 tiger shark dives were conducted by 1065 divers (95% C.I. = 946 – 1198). An onsite questionnaire survey of 197 participants indicated that the direct value of tiger shark diving to the Aliwal Shoal region was R12,405,274 (95% C.I. = 10,777,324 – 14,228,541). On a ranking from 1 to 5, where one is poor and five is excellent, the average participant response to overall quality of dive and quality of dive operator was 4.6 and 4.7, respectively. The majority of divers (98.0%) observed a tiger shark, with an average number of 4 per dive. Although tiger sharks approached to an average distance of 1.6 m from divers, the majority (95.9%) felt safe and would recommend the dive to their friends (99.5%). The majority of interviewees (88.5%) supported the use of chumming for a closer tiger shark experience. Tiger shark diving within the MPA is currently a non-rivalrous, non-excludable and under-exploited resource.

Keywords: Tiger shark, economic valuation, Marine Protected Area, Aliwal Shoal, South Africa
SHARING KNOWLEDGE & EXPERIENCES IN FIJI:
ENHANCING ADAPTIVE CAPACITY TO CLIMATE CHANGE

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ABSTRACT

Tourism is a significant component of the GDP of many of the Pacific Islands, including Fiji (Simpson et.al. 2008; Uyarra et.al. 2005). However, climate induced changes will have profound direct and indirect negative impacts on the tourism industry in the Pacific at all levels - from local to national. The main impacts include: reduced fresh water; increasing sea surface water and air temperatures; biodiversity losses and degraded ecosystems - especially coral reefs; altered agricultural production; increased natural hazards including cyclones, flooding and drought; beach erosion; coastal inundation from sea surges - especially coral atolls; damage to coastal infrastructure and facilities that support the industry (Hay et.al. 2003); reduced landscape aesthetic and amenity value (Mimura et.al. 2007); and damaged island image as safe and attractive destinations (Hall & Higham 2005).

Studies have consistently found low awareness of climate change and little evidence of long-term strategic planning in anticipation of future climate changes (Simpson et. al. 2008). This small-scale research project will look at using participatory methods to enhance adaptive capacity in response to climate change in the Pacific Islands, focusing on two differing coastal tourism resorts on the main island of Fiji.

The researchers are using this pilot study as the first step for a larger application. The workshops will be initially informed with bio-physical trends associated with climate change, focusing on social and institutional barriers. Expected outcomes are: increases in participants’ knowledge, awareness and understanding of the potential, trends and resulting impacts of climate changes in their region; exploration of the potential opportunities; and increased confidence and empowerment of resort management and staff; building of participants’ climate change adaptive capacity.

Keywords: Systems approach; adaptive capacity; climate change; coastal Fiji;

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WHERE ARE THE STARS OF THE SHOW?: DISSAPPOINTMENT IN MARINE ECOTOURISM

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ABSTRACT

Many marine ecotourism products are based around sightings of charismatic megafauna. Despite the use of detailed behavioral knowledge and increasingly high technology, sightings are not always guaranteed. Thus there is significant room in the marine ecotourism experience for nature not to live up to expectations, and often encounters are not as good as hoped. Central is the need to get ‘up close and personal’, for example, although Orams (2002) suggests that whale watching is not just about seeing whales, research shows that proximity is a significant measure of satisfaction. Indeed, describing the subdued attitudes of dissatisfied dolphin watchers on the Moray Firth and whale watchers at Hervey Bay, Bulbeck shows that ‘closeness can be everything’ (2005, p. 101). Further, if animals are sighted, they often are indifferent to the tourists; for ‘we look at them but they do not look at us, ignorant of or ignoring our presence (or so it seems)’ (Desmond 1999, p. 188). Far from promoting a theme-park form of natural interaction, this paper discusses the roots of this dissonance from a theoretical and empirical perspective. Some of the influences behind false expectations are discussed, as well as how disappointment is manifested in research conducted with Whale Watching tours on Australia’s Gold Coast. Further we seek to present a picture of how different providers attempt to manage this challenge through refunds, substitute trips and methods for improving sightings. More enlightened operators should be seeking to encourage more appropriate expectations as this is more representative of the environment with which they are associated.

Keywords: Disappointment, Whale-watching, Ecotourism, Management, Behaviour

REFERENCES


SHIFTING THE CARRYING CAPACITY CONCEPT FROM THEORY INTO PRACTICAL APPLICATION: AN EXAMPLE USING RECREATIONAL BOATS IN MALLORCA, BALEARIC ISLANDS, SPAIN

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Keywords: Carrying capacity; recreational boating; Mediterranean; Balearic Islands; Posidonia oceanica

INTRODUCTION

In this paper we argue that the theoretical concept of carrying capacity can only become operational if it is applied to clearly defined spaces, management objectives, and criteria. We consider the term carrying capacity to be a concept that encompasses the basic premise that every system, whether it is social, economic, or ecological, has a limit to growth that, once exceeded, ceases to be sustainable. The concept can be applied to a range of management scenarios using Principle-Criteria-Indicators (PCI) related approaches (Fahy and Cinnéde 2008; Fontalvo-Herazo et al. 2007; Gomontean et al. 2008; Khanna et al. 1999; Lawson et al. 2003; Manning et al. 2002; Roussell et al. 2007). We demonstrate this using the example of carrying capacity of recreational boats in Cala Xinxell in Illetas, Mallorca (Balearic Islands).

In 2008, recreational boating generated over 537 million € and the number of visitors was 324 522 in the Balearic Islands (CITTIB 2009). In addition to being one of the most lucrative sectors of the tourism industry, recreational boating is a popular activity for residents. The negative impacts of unregulated anchoring on Posidonia oceanica is one of the more common foci of boating impact studies, and has been observed in the Balearic Islands (Lloret et al. 2008; Marba et al. 2002; Roig-Munar 2003) and in the broader Mediterranean (Ceccherelli et al. 2007; Francour et al. 1999; Guidetti 2001; Milazzo et al. 2004; Montefalcone et al. 2006). The use of ecological mooring buoys has been proposed as a solution to this impact (e.g. Francour et al. 2006). In addition to having potential negative impacts on the marine environment, overcrowding of boats can affect the well-being of visitors, which is also an important component of sustainable use of these areas. Carrying capacity studies should provide relevant information related to the appropriate number and distribution of ecological mooring buoys based on these considerations, yet our literature review revealed none that address social as well as ecological factors. Rather, the positioning of mooring buoys appears to be based mainly on physical ecological parameters. This necessitates studies such as this one that incorporate the perceptions of users into carrying capacity calculations.

DEFINITION OF CARRYING CAPACITY OF CALA XINXELL

In accordance with the PCI approach, the rationale for our methodology is based on the premise that, in order to operationalize the concept of carrying capacity it is necessary to: (1) define the area (spatial, sector) and/or management problem (i.e. negative impacts of recreational boats anchored in Cala Xinxell on visitor well-being and P. oceanica), including the primary management principle or objective (i.e. establish, monitor and implement the maximum number of boats that can anchor in...
the Cala while having minimal negative impacts on *P. Oceanica* and on the well-being of visitors); (2) establish the criteria for meeting this objective (i.e. carrying capacity of boats); and (3) establish indicators for meeting this management objective (i.e. number and distribution of boats). Although there are additional variables, particularly ecological, that relate to the carrying capacity of the Cala, the selected parameters are considered to be the limiting factors to the number of boats. This is because physical space and the way users perceive crowding within that space can be influenced very little, if at all, by changes in technology and boating practices. Excluding elements that cannot be controlled such as the weather, these are the factors that generally govern whether or not people remain in or leave an anchoring area. *P. oceanica* occupies a physical space and is directly affected by anchoring but other ecological impacts, such as changes in water quality, are contingent upon variable factors such as technology and boating practices.

**METHODS**

A survey was implemented from 21 June to 11 September 2008 with boaters anchored in the Cala Xinxell. The surveys were designed to measure boaters’ perceptions of: The number of boats and the distance between them, the effect of these on general well-being, overall satisfaction, demographic data, and boat characteristics. A total of 340 surveys were conducted over 20 sample days. Using statistical analysis, perceptions data were compared with objective, geospatial data of the number and average distance between boats and the area of the Cala.

**RESULTS**

The results show that an increase in the number of boats in the Cala and a decrease in the distance between them has negative effects on the well-being and overall satisfaction of the majority of recreational boaters. The GPS points of the sample superimposed on an aerial photograph of the Cala indicated that many of the boats that were sampled were anchored on *P. Oceanica* beds. The calculations show that the carrying capacity of the Cala Xinxell is 48 boats, with an average distance of 44 m and minimum of 38 m between them. Since the average number of boats at weekends is 57, carrying capacity is surpassed on busy weekends during the summer. If we consider the only the area of the Cala with a sandy bottom (i.e. no *P. oceanica*), the carrying capacity decreases to 29 boats.

**CONCLUSIONS AND RECOMMENDATIONS**

There is a spectrum of options for managing the number and positioning of the boats in the Cala. The most restrictive and expensive option would be the installation of 48 mooring buoys (ecological buoys in areas of *P. oceanica*) with a minimum distance of 38 m between them. This option would account fully for the social and environmental dimensions included in this carrying capacity calculation. A less restrictive, less expensive option would be to install 29 mooring buoys only in the area where there is *P. Oceanica* and not restrict use of sandy areas, or to simply enforce existing regulations against anchoring on *P. Oceanica* without installing any buoys.

It is important to note that ecological health, particularly as it relates to pollution and water quality, are also essential considerations for ensuring sustainable use of the Cala. A small number of boats, if they do not dispose of waste properly, can have profound negative impacts on the marine environment regardless of any efforts to limit the number of boats. In this context, the enforcement of Best Practices of recreational boaters is an essential complementary action to the proposed management measures.

The most restrictive management option would be the most desirable from the perspective of maintaining long-term sustainability and therefore is the one that is most strongly recommended.
However, the most favourable action from a sustainability perspective is often the most costly in the short term and, hence, many times not the most realistic in the absence of strong political will and availability of resources. In this context, scientists working in the sustainability field should attempt to provide a variety of management options to account for the fact that the “ideal” actions might not always be the most feasible ones. With the current, potentially catastrophic level of human impacts on natural resources any measures are better than none at all. Science-based management advice must be amenable to local socio-economic and political realities to avoid alienating decision-makers and promote the highest level of action possible given that reality. Once some measures are in place and the benefits become evident, this can be a way of promoting further, more stringent actions.

From a methodological perspective, this paper should serve as a demonstration of how the concept of carrying capacity can be applied to making specific management decisions in the coastal zone. In practical terms, this study goes a step beyond many articles that propose complicated models and frameworks for addressing sustainability problems. Where such developments are undoubtedly essential to advancing knowledge, in today’s climate of rapid growth and global change, science also needs to take a practical approach to solving sustainability problems, which might mean accepting more uncertainty and compensating with more precaution.

ACKNOWLEDGEMENTS

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REFERENCES


LIFEGUARD TRAINING FOR TOURISM RESORTS: 
A CASE STUDY FROM FIJI

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ABSTRACT

Water safety is a critical issue for coastal and island resorts. Many resort guests are in a totally unfamiliar environment and often have limited swimming ability (Wilks, 2007). Following a major incident in 2003 where two guests from a neighbouring resort drowned in the lagoon and two staff were hospitalized as a result of their rescue attempt, the Outrigger on the Lagoon Fiji Resort requested assistance from Surf Life Saving Australia.

This paper describes the two lifeguard training programs provided. The initial program involved an aquatic safety and risk management assessment (including signage), staff training and advice on lifesaving and rescue equipment. In the months following the initial training program 20 guests were rescued, of which 18 belonged to nearby resorts.

During the second program a holistic approach to water safety and first aid was implemented. This saw the integration of security staff and bar staff into the training as first responders, especially at night, and increased total coverage of the resorts’ aquatic areas, child care centre, rooms and gym.

Following the training, staff reported they had successfully treated a variety of injuries, including first response to a serious car accident outside the resort.

Currently the resort has 13 staff from Activities and Security certified at the Surf Rescue Certificate and/or Bronze Medallion level, 5 Rescue Water Craft operators, 4 Silver Medallion Patrol Captains and 30 staff qualified in first aid. The experiences and lessons learnt from Fiji provide an opportunity for introducing similar tailored programs into South Africa.

Keywords: Water safety; lifeguards; tourism resorts; training; Fiji

REFERENCES

THE IMPACT OF WILDLIFE TOURISM EXPERIENCES ON VISITORS’ LEARNING FOR SUSTAINABILITY

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ABSTRACT

While it is generally accepted that wildlife tourism experiences influence visitors’ knowledge about animals, beliefs in relation to sustainability, and behaviour at the site (Ham and Weiler, 2002), little research is available regarding the extent of their impact on visitors’ adoption of environmentally sustainable practices after leaving the site. This paper investigates the impact of wildlife tourism, in a variety of contexts, on visitors’ understanding, attitudes and practices in relation to environmental sustainability. It explores the relationships between three sets of variables: (a) key visitor attributes; (b) salient aspects of the experience; and (c) learning outcomes immediately following and four months after the visit.

Pre- and post-visit questionnaires (n = 1289 and 898 respectively) and a follow-up web survey (n = 240) were administered at four sites offering marine wildlife tourism experiences (an aquarium; a marine theme park; a turtle experience; and a whale watching experience). These sites offered a range of wildlife encounters, including animal shows, signed exhibits, guided tours, and interaction with captive and non-captive animals.

Visitors indicated that the experience of seeing and interacting with the animals had a greater impact on their commitment to conservation than the information provided through signs, guides or commentaries. However, the findings suggest that while an emotionally engaging experience is important for attitude change and visitor satisfaction, a more contemplative or reflective response needs to be elicited in order to impact on behaviour. Those people who already have an interest in environmental issues are more likely to respond in this way.

Keywords: wildlife tourism, ecotourism, visitor experiences, learning for sustainability, conservation learning

REFERENCES

USING WILDLIFE TOURISM TO ENHANCE CONSERVATION LEARNING: A CASE STUDY OF MON REPOS TURTLE ROOKERY

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ABSTRACT

Research shows that wildlife tourism experiences enhance visitors’ knowledge of conservation issues and foster positive attitudes towards the environment and conservation. It is becoming increasingly apparent, however, that positive attitudes and intentions do not necessarily translate into conservation practices once visitors leave the site. Phase one of this research used Community Based Social Marketing techniques (McKenzie-Mohr and Smith, 1999) to identify common beliefs and barriers associated with six household waste reduction practices – recycling, purchasing products with minimal packaging, re-using containers, picking up litter, composting and reducing use of plastic bags. This information was used to develop a family conservation kit targeting these practices.

In phase two, 200 families visiting Mon Repos turtle rookery in Queensland, Australia were surveyed about their conservation knowledge, attitudes and behaviour prior to and immediately after their visit. Half of the sample was assigned to a ‘treatment’ condition and given a conservation kit and post-visit support in the form of emails and access to a project website. The remaining families were assigned to a control group and received no post-visit support. Three months after their visit, families were again surveyed about their conservation knowledge, attitudes and behaviour.

Analysis focused on exploring the impacts of turtle-viewing experiences and conservation kits on families’ long-term conservation learning. Specific aspects of the visit that prompted changes in knowledge, attitudes and behaviour were identified. The importance of sending regular reminders and site-specific up-dates to visitors in the post-visit stage is also discussed.

Keywords: wildlife tourism, conservation behaviour, post-visit support.

REFERENCES

WHAT DO PEOPLE DO AT NINGALOO?
SPATIAL AND TEMPORAL MAPPING OF TOURIST USAGE IN A LARGE
MARINE PARK, NORTH-WESTERN AUSTRALIA

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ABSTRACT

Ningaloo Reef is a remote, fringing reef which extends for 300 km along the coast of north-western Australia (22°-24°S). It supports a high diversity of corals, fishes and other biota including charismatic seasonal migrants like whale sharks, turtles and humpback whales (Sleeman et al. 2007). The multi-use Ningaloo Marine Park, which was established in 1987, and expanded in 2004, protects the full length of the reef (Department of Conservation and Land Management & Marine Parks and Reserves Authority 2005). The Ningaloo region has high social importance, particularly for nature-based tourism, recreational opportunities and its Aboriginal history.

Tenure along the coast includes the Cape Range National Park and several pastoral stations (Figure 1). Tourists usually access the region by road or fly into the town of Exmouth adjacent to the northern extent of the Ningaloo Marine Park. There is a limited formal road network comprising some paved and gravel roads but a vast labyrinth of four wheel drive coastal tracks exists. Accommodation in the form of hotels, caravan parks and backpacker establishments is concentrated in Exmouth and Coral Bay but there is extensive camping in suitable coastal locations along the length of the Marine Park. Relatively little published work exists on human usage in the region although a survey of recreational fishing was completed in 1998 (Sumner et al. 2002).

A research project is in progress to map the spatial and temporal distribution of recreational activities within the Ningaloo reef lagoon system and relate these patterns to factors such as biodiversity, physical conditions, coastal geomorphology, marine park zoning, access roads and accommodation nodes. The project will provide baseline data for management of the Ningaloo Marine Park as well as contribute to an integrated ecosystem and socio-economic model for the region.

Keywords: surveys, coral reef, beaches, recreation, indicators

REFERENCES


CONTEMPORARY MULTIMEDIA NETWORK AS A METHOD OF INFORMING NAUTICAL TOURISTS

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ABSTRACT

Trends in the world are increasingly dynamic in the sense that needs are quickly changing and profiling. The change of nautical tourists’ needs and wishes is fluctuating dynamically, thus the demand dictates a faster pace of change of the offer. The offer therefore has to find a way to the fastest possible response to demand which is dictated by the market itself. However, the question arises as to how this can be done in the best and fastest way? Namely, when at the level of marine, tourist places, destinations or state specific promotional materials are printed, there is little possibility for a new print in the same year, or even for modification of the content of existing material, since the process is very demanding. It is important to emphasize that such a process requires a long period along the line from "the statement state to the reaction state".

This article will show the network model of media advertising and promoting products and services through networked plasma / LCD display. Outdoor and indoor advertising networks are the modern technological solutions, and are realized with networked plasma with various screen size. The advertised products are displayed on the most frequently visited locations within the marina. Such networks as a modern trend of informing nautical tourists are able to run multimedia content that is subject to rapid changes in real time in a way that it manages the network from remote locations via personal computers in the office. Such a way of promoting and informing would significantly impact both the quality of service and the image of the marina or "chains" of marinas.

Keywords: e-marketing, multimedia, LCD/plasma, network, remote control

REFERENCES


NAUTICAL TOURISM AS THE MEANS OF BRANDING THE NORTH-ADRIATIC DESTINATIONS IN TOURISM MARKET

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ABSTRACT

In giving up the mass tourism and by configuration of various selective tourism forms in accordance with the particular destination possibilities, the references are formed to include the North-Adriatic destinations into the tourism development plans. Within this, the significant place of nautical tourism is designed.

Both physical and chemical characteristics of the Adriatic sea (its limpidity, salinity, temperature, sea alterations, waves), together with its coastline indentation and beauty, present main components for the forming of the North-Adriatic destinations’ tourism offer. Besides its lavish resource base in natural attractions, the North-Adriatic destinations consist of profuse anthropogenic tourism resources as the result of enduring settlements within the area, of the proximity of the main emissive tourism destinations, and of their accessibility from the continental parts of Europe. They represent the convergence point of numerous interactions connected to tourism.

Special distinction within the development of North-Adriatic destinations’ tourism is given to the forming of their recognition within the tourism market by means of nautical tourism. The global tourism market is dominated by tourism demand and the even greater competition, and therefore the strategic consideration should be oriented towards brand forming. Brands enable the potential tourist to make easier decisions within a number of tourism destinations, and represent the invigorating means of competitive preference forming. By means of nautical tourism the explicit produce can be profiled by which the North-Adriatic destinations can be identified as the ones which could come up with the potential tourists’ expectations and keep up with the given promises within the tourism market. Substantially shaped and branded, nautical tourism produce represents the assumption in the forming of competitive advantages within the North-Adriatic destinations on the tourism market.

Key words: North-Adriatic destinations, nautical tourism, branding, tourism market

INTRODUCTION

Quality factors (tourist arrivals, tourist overnight stays, tourism receipts) place North-Adriatic destinations (the Istria peninsula) among the leading Adriatic sea Eastern coast tourism destinations. In spite of good business results, they are nevertheless considerably weaker than the real possibilities enabled by natural and antropogenic resources of the destination. North-Adriatic destinations dispose of attractive natural base and of rich cultural and historical heritage which give evidence of continual human presence and
activity from the prehistoric age to the present time. Although positioned in tourists’ minds as the mass „seaside vacation“ tourism destination as its main product, Istria tourism brand is extremely valuable. It consists of completely unrevealed tourism potential which is yet to be strongly established within the tourism market. Tourism products containing North-Adriatic destination identity have been intensively developed in the last few years, comprehending everything possible in order to make it unique and different from its competition. Within nautical tourism precisely tourism values, expectations, cultural heritage, and natural specific conditions are built in, by which the North-Adriatic destinations can be identified. Navigation forms a unique experience for tourists, a new perception of everything already experienced on the coast.

**SITUATION ESTIMATE**

In order to avoid internal competitiveness between particular North-Adriatic destinations, efforts are made to set their clear identity and communication with the visitors. In such a mode effective cooperation is obtained in the integrated strategy of North-Adriatic destinations. Consequently, each of them participates with its own differentiating elements (differences, particularities): in inland destinations rural, vine, event, and other tourism forms are developed, while for coastline destination resting, nautical, sports and recreational tourism are characteristic. Repositioning of tourism products is particularly tied to the contemporary trend of „experience tourism“, which is in form of stories incorporated in every tourism object, tourism manifestation, and every tourism contents. Stories about vine, olive oil, gastronomy, bicycle routes, and picturesque inland villages and small towns are shaped and presented to tourists.

North-Adriatic destinations have made considerable progress in forming their tourism product. However, when Istria and North-Adriatic destinations are mentioned, potential tourists still associate them with „seaside vacation“. This must be modified, and by use of stronger marketing activities and tourism brand promotion, picture of the destination offering human tourism based on obtainable resources must be formed in tourists’ mind.

The main purpose of branding is to shape the North-Adriatic destinations as the well-known trade-marks, i.e. to place a picture in the perception of the aimed group members, either investors, tourists, or managers, in order to contribute to the decision on visiting, business decisions, or investments. Umag, for instance, should be associated with tennis, Pula with the occurrences in the Roman amphitheatre from the 1st century B.C., etc. Exactly as the well-known products, the well-known destinations find easier selling canals for their tourism products, have access to the best personnel and to a larger number of visitors, tourists, to investments and events, and can therefore be better positioned within the global tourism market.

When communicating with the tourism market, North-Adriatic destinations use several branding elements: trade-mark and logotype (the goat is presented even in the Istra county coat of arms), symbols (the Pula amphitheatre, the Euphrasian Basilica in Poreč, clean and well-equipped beaches of Rovinj, etc.), slogans (“Istria – Green Mediterranean”, “Pula gives more”, “Istria – Land of Wine”) and web-sights (www.istra.hr, www.istra-online.hr, and others).

Within the Istria developing plans its central identity is defined: The Green Mediterranean Hideaway, pointing out the main values representing the Istria preferences.
Picture 1. Istria identity


The defined central and wider Istria identities also represent the base for the “umbrella brand” conception. Umbrella brand must arouse clear evocations of the Istria authenticity as the preserved part of the Mediterranean, which forms the excellent starting point for the development and the binding of all other umbrella elements.
“Umbrella” represents the main bearer of the overall Istria identity, which covers all other important elements of the Istria tourism identity. All the elements placed “under the umbrella” must be turned to the best account in Istria. Umbrella brand – “Green Mediterranean Hideaway” suggests the green refuge in the hearth of the Mediterranean, the authenticity of Istria towns and the preservation of its environment. The concept is strong, visible, and perceptible, and forms the excellent starting point for all other elements. The elements “under the umbrella” are the following:

1) Preservation of nature and geographical position:
   - natural view factors: Brijuni national park, Istria west coast archipelago, pine woods, sea-side city view,
   - association: gentleness, harmony of sea and coast, co-existence of people and nature, green and blue combination.

2) Authenticity of towns:
   - authenticity factors: city views in sea blueness, small towns on top of the hills,
   - association: variety of experience, education.

3) Enogastronomic identity:
   - representative elements: truffles, vine, olive oil, other domestic produce.

4) People and customs:
   - representatives: agricultural labourers, fishermen, persons engaging in old crafts,…
   - associations: life in accordance with the nature, hospitality.

5) Cultural and historical wealth:
   - representatives: Euphrasian Basilica, the Pula amphitheatre, archeological excavations, churches, basilicas, Glagolitic (old Croatian alphabet) alley,
   - association: turbulent, rich and interesting historical and cultural heritage,
• modern cultural identity as a separate segment: Motovun film festival, jazz concerts, galleries, modern art festivals, etc.

6) Adventurism, experience and stories:
• representatives: sailing, bicycling, trekking paths, paragliding, legend revival...
• associations: ideal climate for active holiday, holiday experience shaping.

NORTH-ADRIATIC DESTINATIONS IN NAUTICAL TOURISM MARKET

Nautical guests are motivated by sea experience of freedom, relaxation and the sense of personal control. Nautical tourism enables a different view of nature exploring. New perspective is formed in nautical guests, with nature observed from the sea rather than, as usual, from the coast.

3.1. Resources for nautical tourism development

Nautical tourism comparative advantages of North-Adriatic destinations are based on authenticity of their nature. Indentation of the Western and the Southern coast of the Istria peninsula, favourable climate characteristics, natural and cultural values, traffic accessibility, infrastructural equipment, population density and human potentials are the elements which enable the development of nautical tourism on the very North part of the Eastern Adriatic coast. Western Istria coast is slightly indented with several deep bays (Dragonja river mouth, Lim canal); the Rovinj island group is situated in the central part, while the Brijuni archipelago (group of 14 islands proclaimed a National park) can be found in the Southern part. According to its thermal characteristics, the sea along the North-Adriatic destinations represents favourable maritime area for nautical tourism activities during most of the year (from April to the end of October). Sea salinity is of 38,3 ‰, which is considerably higher than of the Atlantic ocean. Sea limpidity varies between 0.5 and 31 meters, less than the open waters of the Middle and Southern Adriatic (14-56 m). Colour varies from deep blue-blue to green, yellow or brown, depending on consistency and on types of phytoplanktons “in flower”, i.e. on mineral and organic materials carried by rivers. Sea limpidity is suitable for diving tourism development.

Istria climate is Mediterranean and very pleasant, with the highest average air temperature of 24°C in August and the lowest average air temperature of 5°C in January, which is favourable to the open-air tourism activities.

<table>
<thead>
<tr>
<th>Tourism destination</th>
<th>Spring III</th>
<th>Summer VII–VIII</th>
<th>Autumn IX–XI</th>
<th>Winter XII–II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pula</td>
<td>12.4</td>
<td>22.4</td>
<td>14.9</td>
<td>6.6</td>
</tr>
<tr>
<td>Rovinj</td>
<td>12.2</td>
<td>22.1</td>
<td>14.5</td>
<td>6.2</td>
</tr>
</tbody>
</table>

Table 1 Air temperature per season (°C)


Characteristic winds of the North Adriatic are: landward wind, bora and scirocco. Their intensity enables sailing throughout the year. Tourism activity is completed with insulation, with more than 10 hours of sun daily in Summer. The impact of sea raining regime is dominant, with precipitations mostly in form of rain, and with snow retaining annually in average of 2.4 days only (for Pula). However, small amount of precipitations and their short duration represent no obstacle for the development of nautical tourism.

Natural resources favorable for nautical tourism development are completed with cultural and historical sights which give evidence of continuity in population density in the Istria area from the ancient times up to nowadays. Some of them represent the world important historical monuments under the UNESCO protection (the Euphrasy Basilica complex in Poreč). The modern cultural identity of the North-Adriatic destinations is made of film festivals (The Pula film festival), concerts in classical and contemporary music (the amphitheatre of Pula), modern arts festivals, antique culture presentations (Days of antiquity in Pula), etc. Various sports and entertainment manifestations are also organized (ATP Umag tournament, “The Poreč dolphin” in Poreč, “Parenzana” – mountain bike race, tourism feasts, etc.).

Along with spatial and environmental characteristics of the Istria peninsula, physical base for nautical tourism development is represented by its harbour development, mainly the development of the harbour system expressed in a number of coastline and island harbours and ports.

The period from 1984 (the beginning of the intensive building of nautical tourism ports in the North-Adriatic) to 2008 was characterized by the gradual growth in nautical tourism ports and in the number of available berths. By the year 2008, 14 nautical tourism ports were built, all of them situated on the Western Istria coast.11 The heaviest concentration of nautical tourism ports can be found within the Poreč area micro-region. They occupy the basin of 646,803 m², with the capacity of 4,102 sea-moorings and 780 vessels on ground, and with the overall coastline area of 155,512 m².

At the very beginning of nautical tourism development, vessel berthing harbours were offering safe mooring and essential services to nautical tourists, while the highly specialized contemporary marinas show a completely different situation. Safe mooring still represents the essential and indispensable prerequisite for arrival and acceptance of nautical tourists, but other harbour services represent important factor in attracting tourism demand, competitiveness and breakthrough into this specific tourism market segment. Acceptance of Istria into nautical tourism market requested the equipment of already existing marinas with adequate contents. Most of the marinas are equipped with medium category contents, while the small number of marinas fulfil the high category requirements. Therefore the North-Adriatic destination marinas fall considerably behind the marinas on the Western Adriatic coast (Italian marinas). In 2009 only 3 marinas were categorized as 1st class marinas (from the total of 12 marinas). Most of the marinas, 6 in all, were categorized as 2nd class marinas, with 3 of them categorized as 3rd class marinas.12 According to “Regulations on classification and categorization of nautical tourism ports” from 2008 the marina categories are defined by a number of anchors: two

12 Popis kategoriziranih turističkih objekata, hotela, kampova i marina u Republici Hrvatskoj (Register of categorized tourism objects, hotels, camps, and marinas in the Republic of Croatia) (2009), Ministarstvo turizma Republike Hrvatske, Zagreb, p. 4.
anchors, three anchors, four anchors, and five anchors. Nautical tourism ports in North Adriatic are not positioned evenly, have insufficient capacity, and inadequate services which cannot satisfy the even greater nautical tourists' demands. Therefore the improvement of service quality in marinas in accordance with the nautical market trends and enlarging of capacities in the already existing marinas becomes essential, as well as the building of new ones, but within the concept of sustainability and the carrying capacity limits.

Quality indicators can be defined by a SWOT matrix by the analysis of nautical tourists' attitudes and preferences. Nautical tourists are particularly satisfied with natural and landscape beauties and with personal safety. They express their dissatisfaction with the lack of diversity of cultural manifestations, entertainment and sports contents, and shopping possibilities in marinas. One of the overall discrepancies in Croatian tourism is represented by the stereotype tourism offer. In recent years positive changes have been noticed in entertainment contents forming, in revival of old customs, stories and legends (revival of a vampire legend, reminiscence of the Casanova stays in Pazin, Tinjan and Krig) and their presentations to tourists during the summer months.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• natural beauties</td>
<td>• insufficient number of births during summer season</td>
</tr>
<tr>
<td>• geographical position</td>
<td>• obsolete nautical tourism offer concept</td>
</tr>
<tr>
<td>• traffic accessibility/proximity of</td>
<td>• seasonal activities</td>
</tr>
<tr>
<td>emissive markets, particularly of</td>
<td>• unsolved mooring status in natural,</td>
</tr>
<tr>
<td>the Italian market</td>
<td>non-inhabited bays</td>
</tr>
<tr>
<td>• rich cultural and historical heritage</td>
<td>• overbuilding/urbanization of intact</td>
</tr>
<tr>
<td>• nautical infrastructure</td>
<td>coastline segments</td>
</tr>
<tr>
<td>• safety</td>
<td>• spatial unevenness of nautical tourism</td>
</tr>
<tr>
<td>• hospitality</td>
<td>port deployment (concentration in the</td>
</tr>
<tr>
<td></td>
<td>Western Istria coast)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• growth in world nautical tourism</td>
<td>• conflicts with other resource users</td>
</tr>
<tr>
<td>demand (growth in berth demand)</td>
<td>(other forms of tourism, mariculture,</td>
</tr>
<tr>
<td>• tourism trends (destination proximity,</td>
<td>maritime routes, etc.)</td>
</tr>
<tr>
<td>accessibility, safety, protected</td>
<td>• environment pollution</td>
</tr>
<tr>
<td>environment)</td>
<td>• inadequate legal, planning, and other</td>
</tr>
<tr>
<td>• further growth in traffic infrastructure</td>
<td>regulations</td>
</tr>
<tr>
<td>quality</td>
<td>• recession, disturbances in emissive</td>
</tr>
<tr>
<td>• controlled development of nautical</td>
<td>markets</td>
</tr>
<tr>
<td>tourism in accordance with the concept of</td>
<td>• unsolved ownership relations of offer</td>
</tr>
<tr>
<td>sustainability on national level</td>
<td>bearers (ACI d.d.)</td>
</tr>
<tr>
<td>• formation of nautical tourism</td>
<td></td>
</tr>
<tr>
<td>development strategy for the Republic</td>
<td></td>
</tr>
<tr>
<td>of Croatia</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 13** SWOT matrix for North-Adriatic nautical tourism destinations

**Source:** Author's elaboration

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13 Pravilnik o razvrstavanju i kategorizaciji luka nautičkog turizma (Regulations on classification and categorization of nautical tourism ports) (2008). Narodne novine 72, article 22
Within the further development of the North-Adriatic destination its strengths must be affirmed and the weaknesses limited, the opportunities valued, and threats minimized within the macro-environment.

**Nautical tourism management results**

In 2008 a total of 118,220 tourist arrivals were realized in nautical tourism ports of North-Adriatic destinations, which amounted to 14.6% of the overall nautical arrivals for Republic of Croatia, and 277,220 overnight stays were realized or 19.4% of the overall nautical overnight stays in Republid of Croatia. The presented data indicate no adequate tourism traffic result was achieved according to the nautical tourism harbour capacities. In spite of this, quality data are ranking it the very top among the Croatian nautical regions.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Domestic</td>
</tr>
<tr>
<td>Tourists Stays</td>
<td>118,220</td>
<td>1,927</td>
</tr>
<tr>
<td></td>
<td>277,220</td>
<td>4,005</td>
</tr>
</tbody>
</table>

Table 2  Number of nautical guests arrivals and stays in North-Adriatic destinations (Istarska county)


Decline in a number of nautical arrivals and overnight stays for the Istria region, noticeable in the year 2008 in relation to the year 2007 is quite disturbing, as the very presence of nautical guests encourages the quality improvement. The same trend in nautical guests' traffic is present on the level of the Republic of Croatia.

Within the structure of Istria nautical guests, foreign guests are prevailing by more than 98%, while permanent sea berth use amounted to 85% (2008.). The shortage in sea berths was perceived during summer months. A number of vessels in transit renting sea berths amounted to 31,310 in 2008, which suggests the berth multiple use, and indicate the importance of transitional nautical guests in nautical tourism harbour management.

<table>
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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessels/permanent berth</td>
<td>3,220</td>
<td>3,301</td>
<td>3,343</td>
<td>3,498</td>
<td>104.6</td>
</tr>
<tr>
<td></td>
<td>30,970</td>
<td>31,152</td>
<td>33,934</td>
<td>31,310</td>
<td>92.2</td>
</tr>
</tbody>
</table>

Table 3  Vessels on permanent sea-berth and vessels in transit using sea berth in North-Adriatic destinations (Istarska county), 2005-2008

**Source:** Nautical tourism – Capacity and management of nautical tourism harbours, 2005-2008, <http://www.dzs.hr April 11th, 2009>
The growth in sea berth number for 2008 in comparison to 2007 (by 5.4%) resulted in the growth of permanently moored vessels (by 4.6%). The decline in a number of vessels in transit is quite disturbing, as results obtained from transitional guests form approx. 20% of the total receipts from berth renting, and were realized during four summer months only. Seasonal activity is perceptive in a number of vessels in permanent sea berths which remain almost unchanged throughout the year, while the number of vessels participating in transit in four summer months amounts to 83% of the total annual number of vessels in transit in nautical tourism harbours.15

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>11,490.0</td>
<td>12,737.6</td>
<td>110.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Berth rental</td>
<td>9,651.7</td>
<td>10,440.4</td>
<td>108.2</td>
<td>82.0</td>
</tr>
<tr>
<td>Permanent</td>
<td>7,538.8</td>
<td>8,420.8</td>
<td>111.7</td>
<td>80.7</td>
</tr>
<tr>
<td>Transit</td>
<td>2,112.9</td>
<td>2,019.5</td>
<td>95.6</td>
<td>19.3</td>
</tr>
<tr>
<td>Maintenance services</td>
<td>675.9</td>
<td>843.9</td>
<td>124.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Other receipts</td>
<td>1,162.4</td>
<td>1,453.3</td>
<td>125.0</td>
<td>11.4</td>
</tr>
</tbody>
</table>

Table 4 Nautical tourism harbour receipts for North-Adriatic destinations before VAT, 2007-2008

Source: Author's elaboration according to: Nautical tourism – Capacity and management of nautical tourism harbours, 2005-2008, <http://www.dzs.hr April 11th, 2009>)

From the aspect of berth rental receipts, North-Adriatic destinations are positioned as stationary tourism destinations.

IDENTITY FORMING AND BRANDING OF THE NORTH-ADRIATIC NAUTICAL TOURISM DESTINATIONS

Nautical tourism integrated product contains a variety of individual products, which all together form the nautical experience. In order to achieve competitiveness in the tourism market, the North-Adriatic destinations must form two main nautical experiences:

1) Courses in sailing and managing sailing boats equipped with engines, and
2) Renting of sailing boats equipped with engines.

Within the development plans of the North-Adriatic destinations they retain the position of the „Mediterranean sailing tradition“. Simultaneously, this is the main bearer of nautical identity elements for the North-Adriatic destinations. The main goal of the „Mediterranean sailing tradition“ as the nautical tourism umbrella brand is in „containing“ all segments of the North-Adriatic nautical tourism destinations, and in reminding them of the tradition, of the Mediterranean affiliation, experience, story, harmony, co-existence of people and sea.

Nautical tourism repositioning within the perception of potential nautical tourist understands the shaping of products, in order for them to satisfy particular market niches.\textsuperscript{16}

- \textit{Courses in sailing and managing sailing-boats equipped with engines}: Nautical schools in North-Adriatic destinations offer numerous courses in sailing and managing sailing-boats equipped with engines, led by licenced instructors. Attendants have at their disposal various types of sailing vessels (hobby cat, catamaran, old ships, sailing-boats equipped with engines, etc.).

  Aimed segment: lovers of sea and nautics, with or without previous sailing knowledge, with no age limitations, medium to high income level, coming from surrounding states (Italy, Germany, Austria, Slovenia, Hungary, and continental parts of Croatia).

- \textit{Chartering of sailing-boats equipped with engines}: North-Adriatic destinations offer possibilities of chartering engine vessels with high comfort and service level. Short chartering periods.

  Aimed segment: lovers of sea and nautics, with or without preliminary sailing experience, no age limitations, medium to high income level, coming from surrounding states (Italy, Germany, Austria, Slovenia, Hungary, continental parts of Croatia).

- \textit{Nautical charters}: nautical offer in North-Adriatic destinations combines comfort with superior sailing conditions, transforming every nautical vacation into unforgettable experience. The offer includes sailing-boats of various lengths, total or partial equipment, expert skippers, thematic routes (romantic, adventurous, etc.).

Aimed segment: lovers of sea and nautics, with or without sailing experience, no age limitations, medium to high income level, coming from surrounding states (Germany, Italy, Austria, Slovenia).

Sailing regattas: beside the international Regatta of old sailing-ships, various mini-regattas for nautical guests looking for fun and improvement of their sailing skills are offered every week. The main principle of Istria sailing regattas is the combination of sports and fun.

Aimed segment: nautical guests with previous nautical skill, medium to high income level, resident in traditional emissive markets (Germany, Italy, Austria, Slovenia, Hungary) for North-Adriatic destinations, and in continental parts of Croatia.

Substantially formed and branded nautical tourism product represents the strong means of creating competitiveness of North-Adriatic destinations within the tourism market, and the presumption of their recognition as the attractive destination offering active vacation suitable for the contemporary tourists.

CONCLUSION

In the perception of tourists the North-Adriatic destinations still create the idea of cheap destinations intended for mass tourism. Such idea must be modified by use of stronger marketing activities and by promoting the new tourism brand - “Green Mediterranean Hideaway”.

Nautical tourism represents a selective tourism form, which has been developing intensively in the North-Adriatic destinations from the 1980s. Based on real values, it is the promoter of North-Adriatic destinations within the tourism market. In defining the brand of „Mediterranean sailing tradition“, an attempt is made to increase the recognition of North-Adriatic destinations by singling them out from a large body and associating them to destinations which fulfil the expectations of potential tourist and keep up with the given promises.

REFERENCES


DIMENSIONALITY OF SCUBA DIVER PERCEPTIONS OF CROWDING

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ABSTRACT

SCUBA diving is a popular outdoor recreation activity that has grown rapidly and now has a large numbers of participants engaged in the sport worldwide. Recent diving research has focused largely on human impacts to reefs (Hawkins & Roberts, 1992; Rodgers & Cox, 2003; Rouphael & Inglis, 2001) economic aspects (Davis & Tisdell, 1996; Oh, Ditton, & Stoll, 2008; Van Beukering & Cesar, 2004) and social factors (Cottrell & Meisel, 2003; Dinsdale & Fenton, 2006; Leujak & Ormond, 2007). A much smaller body of research has specifically investigated crowding issues (Dearden, Bennett, & Rollins, 2007; Dixon, Scura, & van't Hof, 1993; Musa, 2002) and this takes on greater importance as many popular dive destinations are visited by more divers each year.

The investigation of crowding in terrestrial outdoor recreation settings is well established (Manning, 1999; Shelby & Vaske, 2008; Shelby, Vaske, & Heberlein, 1989), but fewer studies have investigated crowding in a marine context (Inglis, Johnson, & Ponte, 1999). This is not surprising given the longstanding paucity of behavioral research in extreme or unusual environments (Suedfeld, 1987). Diving is a unique outdoor activity where the experiential nature of crowding is significantly different than in terrestrial settings. Overall visibility is restricted by water clarity and peripheral vision is limited by diving masks that also distort size and distance. Divers tend to focus on their immediate environment to a greater degree than terrestrial recreationists as a result of restrictive masks and movement limitations associated with diving (Inglis et al., 1999). This study attempts to address this lack of basic information by identifying the most important cognitive dimensions of perceived crowding in a recreational dive setting.

Keywords: SCUBA diving, perceptions, crowding, multiple sort

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REALIZING THE POTENTIAL OF MARINE NATURALIST
INTERPRETERS AS CONDUITS OF A MISSION

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ABSTRACT

It is widely understood that an interpreter or naturalist plays a key role in the overall audience perception of a tour (Christie & Mason, 2003). While tourists were once content with the languid pace of the remote Hawaiian Islands, today’s visitors are seeking more than just a relaxing day in the sun. Surveys show that visitors frequenting Hawaii are especially keen on experiences in, on and around ocean (State of Hawaii Data Book, 2007) while seeking a parallel sense of place and connection to the unique island culture. Marine interpretation programs serve to fulfill this tourist-defined need offering natural experiences and cultural connections while providing content knowledge.

Pacific Whale Foundation has been operating naturalist-led marine ecotours (appendix A) and marine-centric educational programs (appendix B) for over 29 years. In its history, Pacific Whale Foundation has trained and certified its own naturalist staff as well as offered training endorsement to other local marine operators. Pacific Whale Foundation has also developed and contributed widely accepted learning theories and interpretive models now applied throughout the marine tourism industry (Kaufman & Forestell, 1990; Forestell, 1990; Forestell, 1992; Forestell, 1993; Oram & Forestell, 1995; Forestell, 1996; Forestell, 2007; Forestell & Kaufman, 2007).

For the purposes of the paper, only vessel programs, defined as an occurring on boat on or in the near-shore marine realm, will be discussed. Pacific Whale Foundation vessel programs staffed by certified marine naturalists, carry over 300,000 passengers annually and vary from whale watches and wildlife sighting cruises to snorkel adventures and shorter cruises designed to highlight Hawaiian culture, natural history and biogeography.

Historically, interpretive programs have been designed around the needs of the audience (Christie & Mason, 2003; Jacobson & Robles, 1992), efforts to minimize impact to an area (Buckley & Littlefair, 2007; Marion & Reid, 2007), and perceptions of the roles of tour guides (Ballantyne & Hughes, 2001). Additionally various methods have been used as a self-evaluation within the organization to gauge the effectiveness of marine interpretive programs (Shapiro 2006; Meadows, 2002), identifying outcomes including long-term behavior change. Few resources are available for the development of interpretive programs and the professional development of guides aimed at facilitating their role as conduits for an organization’s mission. Though an organization such as Pacific Whale Foundation may be successful from a business perspective and in generating audience satisfaction, it is unclear the extent to which the Pacific Whale Foundation mission (Appendix C) is advanced by the current program.

This paper represents the pilot phase of a multi-step process, which seeks to create a blueprint for a successful mission-driven marine interpretation program. The ultimate goal of this process is to modify the existing staff training model and create a comprehensive staff training paradigm; Eco-University.

Keywords: interpretation, whale watching, naturalists, staff training, mission

REFERENCES


CLIMATE CHANGE: CREATING DEMAND FOR SUSTAINABLE ASSESSMENTS IN COASTAL AND MARINE TOURISM

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ABSTRACT:
The world’s climate is changing at unprecedented rates, affecting nearly every industry globally. Tourism, because of its strong connection to the natural environment, is particularly susceptible to climate change. Direct, indirect, and induced effects of climate change in relation to coastal and marine tourism can be observed on local, regional, and global scales. These effects present an opportunity for coastal and marine tourism brokers to anticipate and react to global changes through the implementation of sustainable practices and accurate assessment. In order for businesses to find economic incentive in sustainable practices, it is important that their outlook shifts from the short term to the long term to accurately account for costs and externalities. The examples of measuring tourism by yield instead of numbers of visitors and quantifying an ecological footprint are presented in this paper. Climate change will affect different areas of the world with varying intensity, leaving tourism-dependent nations more vulnerable to shifting climatic conditions. The importance of sustainable actions, namely accurate assessments, in the coastal and marine tourism industry, in relation to reacting to and planning for climate change is discussed in this paper, with implications for developing countries discussed briefly at the end.

Keywords: climate change, sustainability, coastal and marine tourism, sustainable assessment

INTRODUCTION
Tourism and the environment are closely connected (Amelung et al 2007). The attractiveness of a destination for tourists is largely determined by the natural environment and associated climate conditions (Dwyer and Kim 2003). This system of the natural environment and associated climate conditions, however, is experiencing change through various drivers. Major drivers for global change are economic, political, environmental, technological, demographic, and social (Dwyer et al 2009). As tourism is one of the largest sectors in the global market with a value of over $1 trillion US dollars in 2007 (WTO 2008), the way these drivers influence tourism supply and demand is far-reaching and significant. It is important to note the dynamism of these drivers: no single driver or trend will dominate the global future, each driver will have varying impacts in different regions and different countries, and the drivers can function as mutually-reinforcing (Dwyer et al 2009). For the purposes of this paper, I will focus primarily on environmental drivers, although the other drivers are certainly integrated and inseparable. The penultimate environmental driver of global change is, of course, climate change.

Tourism will be affected by climate change (Bigano 2006, Bosello 2006, Dasgupta et al 2007), although the specifics (location, intensity, and duration, for example) have yet to be precisely determined. This global climate change presents an opportunity to the industry to find sensible, sustainable solutions, as well as an opportunity to anticipate and plan for the paths the natural environment and tourism might take in the future (Ashley et al 2007). For example, changes in tourism will affect the economies of developing nations greatly, as tourism development is commonly the means utilized to increase economic capacity in these areas (Ehmer and Heymann
2007). It is important to note that a shift in economic thinking is integral in the implementation of sustainable practices. Tourism brokers are currently facing a trade-off: traditional greenhouse gas emitting practices that create short term economic benefits versus newly developed sustainable practices that lead to long term economic, social, and environmental benefits. In order for sustainable practices to be implemented, firms need to internalize external costs and create ways to make this transition profitable.

The changing world, and specifically the changing natural environment, will inevitably change tourism development and management. In this paper, I will discuss climate change, both as a driver of global change and as a force shaping tourism. Next I will introduce the relevance of sustainability in tourism development, including Triple Bottom Line terminology and the importance of accurate assessments in internalizing externalities that climate change inducing activities create. I will end with how sustainable tourism growth can provide economic opportunity for the world, namely developing countries.

CLIMATE CHANGE

Climate change is ubiquitous in nature with observable effects on global, regional, and local scales. The environmental impacts associated with climate change are broad, and include sea-level rise, various changes in oceanic current systems, polar and glacial ice cap melts, changes in precipitation patterns, shifting of biomes, global temperature increases, decreases in biodiversity, and an increase in severity in weather patterns (Bernstein et al 2007). In short, the changes brought about by climate change can have a severe effect on the environment, a significant component of decision-making regarding destination choices (Uyarra et al 2005).

Economically speaking, climate change is an externality (Washington Economic Steering Committee 2006). Industries that participated in activities that lead to climate change, like manufacturing leading to greenhouse gas emissions, benefit from their activities but do not pay for the environmental damage caused by their actions. The damage is paid by society as a whole, and will continue to be paid by society, as the effects of climate change are realized. Climate change is particularly a challenge worth addressing because it is not short term like a natural disaster or disease and could ultimately result in a shift from one stable state to another (Scheffer et al 2001), affecting nearly all ecosystem functions and the industries reliant upon these ecosystems, such as tourism. Climate change is anticipated to affect tourism in the following ways:

1. Changes in visitation and tourism patterns. Tourism is expected to shift, internationally, towards higher altitudes and latitudes. The redistribution of tourism expenditures could negatively affect countries that rely on tourism income, but could positively bring income to places currently less visited (Bigano 2006, Xola Consulting 2009).
2. Direct impact of global warming and climate shifting: the receding and disappearance of beaches due to sea level rise, destruction caused by storm intensity (drought, fire, hurricanes, etc), melting of polar and glacial ice (Xola Consulting 2009), and increased damage to tourist infrastructure (Ehmer and Heymann 2008).
3. Indirect impacts due to reduced attractiveness of the natural environment due to direct impacts, such as dried up lakes, desecrated forests, or bleached coral (Xola Consulting 2009, Ehmer and Heymann 2008). In higher altitudes and latitudes, potential indirect impacts include longer warm seasons and more temperate climate.
4. Induced impacts from changes in policies because of adaptive management to the changing climate, such as the implementation of energy efficient technologies and increase in fossil fuel and transportation costs (Xola Consulting 2009).
The significance of these listed effects to the tourism industry and the world at large are colossal. According to Hall and Hingham (2005, p.21) “In terms of the future of tourism, as well as the societies within which we live, there are probably few policy and development concerns as significant as global climate change.”

HOW THE TOURISM INDUSTRY WILL BE AFFECTED

Tourism can be explained through the interaction of brokers, locals, and tourists (Miller and Auyong 1991). Brokers can be further broken down into the public sector, private sector, and non-governmental organizations (NGOs) (Miller and Auyong 1991). For the purposes of this paper, I will focus mainly on broker and tourist responses to climate change and the resulting direct, indirect, and induced impacts of these environmental changes to tourist decisions. I will focus on the effect of tourism on locals when discussing developing countries.

The tourism industry has shown changes already, however due to technology rather than a changing climate. Shifts in consumer behavior due to technological advancements such as the Internet have allowed for changes in supply and demand, including the success of low cost airlines and ease of research and purchasing. This has aided in the contribution of late bookings, increased price-consciousness, shorter vacations, and desire for more flexibility and individuality (Ehmer and Heymann 2008). Countries will be affected by climate change differently, with some countries either experiencing an increase (“winning”) or a decrease (“losing”) of tourism activity. Climate change is expected to bring additional burdens to poor, developing countries, which constitute those on the “losing” side (Ehmer and Heymann 2008), as these countries often hope to utilize tourism as a means of economic development. Countries with a current economic dependence on tourism are also predicted to suffer, such as islands in the South Pacific and Indian Ocean. Induced effects, like changing policies in response to limiting greenhouse gas emissions, will affect the tourism industry’s profitability through increased prices in travel costs (Dwyer and Forsyth 2008), assuming that people will still travel long distances. However, should people start to vacation closer to home due to rising prices in travel costs, tourism destinations will further shift, potentially suppressing demand.

While various drivers are responsible for shifts in tourism dynamics, tourism is also playing a part in changing the natural environment. One of the greatest impacts tourism has on the natural environment is the creation of greenhouse gases (GHG) from aviation. Air travel is responsible for between 3.5% and 4.6% of total anthropogenic greenhouse gas emissions (Becken 2007). UNWTO estimates that the global tourism industry is responsible for about 5% of human induced climate change (Ehmer and Heymann 2008). This positive feedback cycle (tourism effects climate change which effects tourism) requires attention, and brokers are in the position to take advantage of this opportunity with sustainable initiatives.

SUSTAINABILITY MOTIVATIONS/SOLUTIONS:

In order to understand how the world economy is reacting to climate change, sustainability methods and initiatives must be discussed. Sustainability, according to the Brundtland Commission, is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development 1987). This definition is basic, and while it serves its purpose, I find it beneficial to include an elaboration involving the Triple Bottom Line (TBL) definition. TBL incorporates the “three P’s”: people, planet, and profit. TBL principles highlight the inclusion of stakeholders in business decisions and stress the importance of the integration of social and environmental consequences (Savitz 2006). An important TBL sustainability initiative includes transparency and reporting. Business is moving from a time when activities were kept hidden from the public to a time where each action is publicly
displayed. Transparency aids in the incorporation of externalities, providing for more accurate accounting and decision-making. It is important to note that the field of sustainability is still in a developing state, exemplified by the lack of a clear definition and lack of even a consistent terminology. Sustainability is discussed under various synonyms that include: corporate social responsibility (CSR), corporate responsibility (CR), corporate sustainability (CS), the three P’s, the three E’s (economics, environment, equity), corporate stewardship, corporate citizenship, conscientious commerce, sustainable development, sustainable growth (Willard 2005).

According to a report by Xola Consulting analyzing the effects of climate change on the adventure tourism industry, a 2003 World Bank review of international standards across various sectors of business concluded: “Of all the industry sectors examined in this project, the tourism industry was the least ‘developed’ both in terms of CSR initiatives and codes of conduct. Very few codes of conduct were identified akin to those used in the light manufacturing and textile industry, the agribusiness sector, or the ‘principles’ used in lieu of codes of conduct in the extractive industries. Although some firms have carved out a specific niche in providing tourism services with a focus on environmental conservation, and other multinationals have put in place specific practices and programs which are socially or environmentally responsible, the use of codes of conduct is far from widespread in the tourism sector (Xola Consulting 2009).

The tourism industry clearly has some room for improvement in terms of sustainability practices, and the time is ripe with the changing climate conditions and reacting business practices. As society increasingly demands socially and environmentally responsible actions, the future of the tourism industry’s economy relies on a proactive response. Those businesses that react proactively might find themselves with a competitive edge and a greater demand for their services (Willard 2005). Industry response to global change should include actions to control what it can, as well as actions to minimize what it cannot (Dwyer et al 2009). In return, tourism stakeholders can influence industries with purchasing power, making them ‘future makers’ instead of ‘future takers’ (Ellyard 2006). Instead of wondering what the future will hold, the tourism industry can utilize knowledge of tourism patterns and preferences from the past and present to help shape the future. In order to effectively convey this knowledge, accurate figures and quantifiable assessments (Gössling et al 2005) as a part of sustainability reporting are necessary.

**Quantifiable Assessments of Tourism**

Environmental Impact Assessments (EIA), used to assess the environmental consequences of tourism, carrying capacity concept (CCC) and limits of acceptable change (LAC), used to understand what levels of change can be tolerated, have been utilized to analyze impacts of tourism previously but all are insufficient in similar ways; they focus on local impacts and measurements with little regard to global impacts. The globalization of tourism, however, has rendered these analyses somewhat ineffective. Competition between destinations has increased as tourist decisions have increased as tourist decisions have been found to rest almost entirely on hotel standards and flight duration (Gosling et al 2002) when comparing places that offer similar activities and environments. The previously mentioned assessments fail to take into account the global environmental impacts of travel. Transport (mainly air) is responsible for approximately 90% of a trips contribution to climate change, because of the amount of fuel used and because its impact is especially concentrated due to emissions released in the upper and lower stratospheres (Gössling et al 2002).

In order to account for the environmental damage that has thus far been unpaid by the contributing parties, a method such as the Ecological Footprint Analysis (EFA) could be utilized. EFA accounts for natural capital and its uses nationally and globally (Wackernagel et al 1999). EFA can effectively be used to assess sustainability in tourism, with the idea being to evaluate by spatial units the area used to support an activity, compared to area available, to determine ecological
sustainability (Gössling et al 2002). For a more in-depth discussion of how to apply this model, please see Gössling et al 2002. EFA values the natural environment by comparing what resources are being used versus what are still available, which directly aids in the effort towards sustainability and the importance of sustainable tourism.

Tourism Yield

Measuring economic impacts of tourism has typically focused on numbers, in metrics like beds occupied or number of visitors at a site in a day (Andriotis 2006). In a study done by Dwyer et al (2009), participants of a workshop comprised of public and private sector brokers representing destination management organizations, small to medium tourism enterprises, and education institutions were brought together to discuss global trends for tourism management in Brisbane, Melbourne, and Sydney Australia in March/April 2007. The group concurred that measuring tourism success should be achieved by ‘yield’ per visitor instead of number of visitors historically used. Yield is an economic measure incorporating TBL sustainability principles (economic, social, and environmental aspects). A sustainable yield focus would increase value added (economic welfare of communities incorporating social and environmental revenues) per capita from tourism business instead of focusing on growth by numbers, which would put added pressures on carrying capacity. In other words, a shift to a sustainable yield focus would account for and aim to create environmental and social benefits (Dwyer et al 2009) that could lead to increased economic benefits.

Yield, from an accounting perspective, approximates sales revenues per visitor or the financial rate of return to operators (Lundie, Dwyer, and Forsyth 2007). Tourism can usefully be analyzed by economic and environmental yields. Economic yield is typically estimated by expenditure associated with visitor market segments per unit of time (typically per day or per trip). This method however, does not take into account the costs of providing services to tourists, nor does it provide information on how the expenditure might impact other industries or the tourism economy as a whole (Lundie, Dwyer, and Forsyth 2007). Environmental yield is harder to measure, as it is nearly impossible to quantify the direct and indirect environmental impacts of goods and services consumed by people and businesses. Incorporation of an entire supply chain is rarely achieved, as typically only the first level of suppliers is considered (Lundie, Dwyer, and Forsyth 2007). To try to combat these areas of difficulty, a hybrid approach can be used. The combination of an onsite audit for tourist accommodation with an input-output analysis can provide a more accurate measure of tourism yield. This combination of methods allows the environmental yield from different markets of visitors to be estimated for the entire supply chain, based on an internationally standardized system (Lundie, Dwyer, and Forsyth 2007).

In terms of economic yield, preferred actions from the business perspective are those that generate the most profit to the tourist business per night. From an environmental perspective, preferred actions are those accompanied by a smaller ecological footprint, including less natural resources consumption and less waste per night created. Clearly, an answer to satisfy both of these preferences might not be easy to find. Simultaneous achievement of economic and environmental goals cannot always be accomplished, and trade-offs may be necessary (Lundie, Dwyer, and Forsyth 2007). The challenges presented by two various measures of yield are hard enough to manage. However, according to TBL principles, only two of the three bottom lines have been addressed by this tourism yield discussion: a social yield would also need analysis.

TOURISM EFFECTS ON DEVELOPING COUNTRIES

The importance for the tourism industry to develop accurate assessments and sustainable practices becomes the most clear in the case of developing countries, many of which are tourism-dependent.
In the past, tourism has been responsible for providing detrimental effects in destination economies by pushing up local prices and depriving locals of natural resources because the resources are taken and consumed for tourism (Ashley et al 2007). Those not involved in the tourism sector, and thus with no benefit from tourism in the community, suffer the most.

However, tourism is working with developing nations, with the development of Sustainable Tourism – Eliminating Poverty (ST-EP), an international foundation created by the United Nations World Tourism Organization (Ashley et al 2007) to use tourism as a positive force of change in developing countries. Tourism has been shown to have positive effects in local economies through reducing poverty, in the form of direct, indirect, and induced effects on destination areas:

1. Direct effects in wages and earnings for workers. Tourism is shown to be more labor intensive than other non-agricultural sectors and can employ many that are unskilled or semi-skilled, thus providing an important source of employment for poor people (Ashley et al 2007).
2. Indirect effects provide income through the value chain, with inputs from food and beverage, transportation, construction, etc. This has been shown to provide an additional 60-70% on top of direct effects (Ashley et al 2007).
3. Induced effects, including a better quality of life, have been showed to enhance women’s positions in the local economy because of their incorporation in tourism products like foods and crafts, and increased infrastructure at the destination (Ashley et al 2007).

The benefits offered by tourism in developing countries are important in helping to bring the economies of these countries to fruition. Unfortunately, as shown previously, there are many deleterious environmental effects associated with tourism, exacerbated by climate change and lack of inclusion of externalities. The combination of environmental degradation in developing countries along with potential benefits from tourism exemplifies an important and precarious economic and environment situation that can be managed to our benefit.

**DISCUSSION**

There have been two proposed relationships between the environment and the economy. The first, a win-lose, is that environmentally supportive behavior is a cost to business (Porter and van der Linde 1995, Boiral 2006). This is exemplified in the tourism industry through policy regulations, such as environmental regulation on cruise ships. The second relationship between the environment and the economy is a win-win: integrating environmental friendly practices can yield economic benefits, through the recycling and reusing of inputs to the elimination of waste and by-products (Porter and van der Linde 1995, Boiral 2006). Tourism businesses, namely hotels, have begun to realize the potential in this relationship as shown through the reuse of bed sheets and towels for guests visiting for more than one night.

In economic terms, the shift from short-term benefits enjoyed by private firms to longer-term goals is crucial, as this focus leaves environmental degradation unaccounted for. In the face of climate change, the world can no longer afford to pay the external costs of business practices that fail to consider environmental and social impacts. Demand from consumers show that businesses that incorporate sustainable initiatives are chosen over others (Straughan and Roberts 1999). Economists may argue that incorporating externalities is not desired as it is does not provide economic incentive. However, consumers are becoming increasingly aware of the effects industry has on communities and demanding that these industries act responsibly. Industries that fail to react to consumer demand will find their profits declining.
Tourism is an industry that has been shown to have deleterious effects on the environment while providing hope for economic development in developing countries. Efforts are being made to decrease the negative environmental effects while increasing economic development. Economic reporting is prevalent in tourism, but this might not be the best means to assess environmental and social effects. The TBL framework suggests that economic, environmental, and social implications should have equal bearing on sustainable decisions. Reporting impacts and assessing sustainability through ecological footprint analysis and tourism yield are two suggested methods to internalize externalities. Government regulation and policy changes may be a potential solution, but incentivizing businesses to act responsibly may inspire innovative solutions. (Hoffman 2005).

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UNDERWATER FILMS AS A MEDIUM FOR EDUCATION AND AWARENESS IN THE MARINE ENVIRONMENT

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ABSTRACT

Ocean Messengers, based in Port Elizabeth, Nelson Mandela Bay, South Africa is a Section 21 Company (non-profit) established in 2007 to educate the general public and create an awareness of the marine environment which is under severe threat worldwide. Most coastal cities around the world face similar problems of conflict between industrial development impacting negatively on local communities and the marine environment. The aim of the company is to document scientific evidence based on research studies undertaken by local universities such as Nelson Mandela Metropolitan University (NMMU) and University of Cape Town (UCT) which will clearly indicate the immense value of Algoa Bay as a natural resource of incredible biodiversity in the marine environment. Apart from the scientific studies, Ocean Messengers wishes to attract film production companies to Algoa Bay in order to make environmental awareness films that will reach cinema audiences worldwide. The production of Ocean Messengers which has received a number of international awards for excellence was the first step in a process to undertake more actual film work aimed at producing bigger and better documentaries with greater impact for worldwide distribution. Ocean Messengers will be targeting the national and international markets with film productions and video footage of a high standard that could possibly be presented in cinemas around the world. Ocean Messengers takes viewers underwater to places where they have never been unless they are divers. This exposure has a dramatic impact on viewing audiences as they are made aware of the plight of marine species perhaps for the first time. Rainer will be launching his latest film production “Opaque” at the 6th International Coastal & Marine Tourism Congress. For a sneak preview visit: http://www.youtube.com/watch?v=J-jKdwrtFXc

Keywords: Ocean Messengers, underwater film production, education and awareness, marine environment.
MARINE PROTECTED AREAS: FROM CONSERVATION TO SUSTAINABLE DEVELOPMENT

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ABSTRACT

After a period during which MPAs were instrumentalised as a palliative against the inadequacy of a fisheries management conventional approach, the multi-use character of these areas prevailed, conflicts were pacified by instilling a participative process and a plurality of goals is now fully recognized. Thus MPAs are becoming both a tool and a preferred context for sustainable development in its ecological, economic and social dimensions and applied through a participatory approach that entitles local communities to both create and manage this type of area. This article will discuss the full range of these changes and how MPAs' goals have evolved with time, from a priority granted to conservation to the recognition of a plurality of goals. This article will then examine to what extent the results obtained by MPAs working toward each one of these goals make them valuable examples of areas where the requirements of sustainable development are met.

Keywords: conservation; fisheries; marine protected areas; sustainable development; tourism; sustainability; participation.
FANATIC SCUBA DIVERS DO IT IN THE COLD? ESTABLISHING THE NEED TO EXAMINE THE ATTITUDES AND MOTIVATIONS OF SCUBA DIVERS IN SOUTH WALES (UK).

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Keywords: Cold water, scuba diving, attitudes, motivations, dive fanatics.

INTRODUCTION

Many contemporary works extol scuba diving as an experience in crystal clear waters with visibility for hundreds of meters; vibrant colours, abundant life, exhilarating boat rides, calm seas, and warm waters (Jackson, 2003; Tierney and Tierney, 2006; Trainito, 2007). Most coastal marine tourism research has continued this emphasis on warm water diving (Davis and Tisdell, 1996; Edwards, 2009; Fitzsimmons, 2007; Hawkins, 1999; Rouphael and Inglis, 2001). Other authors have recorded that the effect of warm, clear water and pleasant above water conditions have a high impact on diver enjoyment (Fitzsimmons, 2007).

Scuba diving is seen as more of a holiday activity yet the World Tourism Organization (WTO) indicated that on a worldwide basis only one in three divers regularly take a trip overseas diving holiday (Garrod and Gossling, 2008). The remainder dive close to home, take a day trip, or take a domestic short break. With two thirds of the diving activities taking place on domestic bases the economic value may be more significant than overseas diving.

Divers in the United Kingdom (UK) are described as dive fanatics, with only 20-25% taking overseas dive holidays (WTO, 2001). The WTO has identified that this group of divers possesses a different set of motivations by categorizing them as fanatics. Dive fanatics are defined by the WTO as a sub-market segment whose sole purpose of travelling is to dive, often in groups with clubs or friends (WTO, 2001). Scuba Diving in the UK is characterized by low visibility, low temperatures, strong drifting currents, strong cooling winds, and rough seas. The term dive fanatic requires further explanation to differentiate the motivations.

Tourism is a major part of the economy of Wales (UK) with tourists spending, “over £8 million a day on trips to Wales, amounting to around £3 billion a year” (WAG Department of Tourism, 2009), and diving activity has a part to play in this economy. The size of this market has expanded with the Professional Association of Diving Instructors (PADI) recording numbers of certified divers in Europe steadily increasing during 2003-2008 by over 70,000 per year (PADI, 2009).

Garrod and Gossling (2008) identified that of the top 100 most popular dive destinations only five are cold water sites (all based in the British Isles). However, they go on to recognize that opportunities to dive in cold-water dive destinations can offer destinations ways of opening up new tourist markets and that this can then encourage the development of new business enterprise. With the current economic climate and pressure to reduce individuals’ carbon footprints, the ratio of domestic diving to overseas may increase. There is a need to understand the fanatic diver and how
best to manage the scuba diving activities in the future. This paper will consider the case of Skomer Marine Reserve as a cold water dive site.

THE CASE STUDY LOCATION

The Island of Skomer has been a National Nature Reserve since 1959, and is one of only three Marine Nature Reserves in the UK (BBC, 2009). Skomer (See figure 1) is well known in the United Kingdom as a bird sanctuary on the Pembrokshire coast of South Wales, with its colourful Puffin, Gull, Razorbill, Guillemot and Kittiwake, and Shank colonies (BBC, 2009).

The 1992 Rio Earth Summit put biodiversity firmly on the global political agenda. As a result of the summit the European Communities produced the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora). The main aim of the Habitats Directive was to help to conserve the diversity of habitats and species across the European Union. The coastline in which Skomer Island exists is part of a Coastal Marine Protection Site of Special Interest (SAC, 1992).

![Figure 1 – Location of Skomer Island (A)](image)

The Skomer Marine Nature Reserve (SMNR)

The marine reserve consists of Skomer Island and its surrounding water, an area of about 6 square kilometers. The reserve provides many opportunities for both the experienced and new divers. New divers are limited to shallow dives and there are a number of reefs, kelp beds, and wrecks in the reserve at a depth under 20m. The only complete wreck is too deep for a novice diver located at 30-40 meters. Many of the shallower wrecks consist of only boilers or scant wooden remains. The marine and reef life in the reserve consist of a wide variety of cold water fish, seals, lobster, squat lobster, small octopus, spider and edible crabs, pawns, soft fan corals. Larger pelagic, such as common porpoise, basking sharks, sunfish (BMLSS, 2000) and leatherback turtles (WWF, 2005) appear regularly.

Low visibility

Visibility is an important factor in attracting divers to dive destinations (Garrod and Gossling, 2008). The visibility at Skomer varies according to the time of year, but ranges from 2 meters to 15 meters. The proximity of the coastline results in high levels of soil wash materials suspended in the
water. The area is subject to algal blooms and this causes low visibility and poor light penetration. Skomer's coast and seabed have been shaped by strong tidal currents and the constant battering of the waves, which can reach 13 meters high (BBC, 2009).

**Effect of Cold Water**

The British Sub-Aqua Club (BSAC) defines cold water diving as locations where the water temperature is sufficiently cold, below 10 degrees centigrade, to necessitate the wearing of some form of diving suit to protect the diver from the cold (British Sub-Aqua, 1998).

The water temperature at Skomer averages from 8.2 to 15.3 centigrade (Centre for Environment, 2009). The physical effect of cold water on the diver is to increase metabolic rate to maintain core body temperature. During this process more oxygen is required by the body to convert fats into sugars to produce energy. To allow the body to stay warm divers will consume their air supply at a greater rate than in warm waters. Once a diver is below water the physical activity of diving consists of limited movements and floating, excess movement causes an increase in air consumption and reduces dive time.

BASC instructors suggest that a diver’s dive time will be reduced by up to 25% in cold waters. Using a standard 12 liter bottle of compressed air at 232 bar, a dive will last around 45 minutes, compared to over 60 minutes in warm waters. The physical attributes of the diver and a heightened level of anxiety will increase air consumption. Anxiety could be due to expectations: it will be cold; it’s going to be dark; what will I find; this is a risky sport, will I be coming back?

**Possible attitude and motivation**

Stephen Lyng has suggested there is an increase in risk and uncertainty, “in Western society by an increase of “neo-liberal” policies and programs, which have shifted more of the responsibility for dealing with life challenges from collectives to individuals. At the same time, many individuals are adopting riskier lifestyles in their choices of occupational careers and leisure activities.”, (Lyng, 2008). It can be argued that while risk is inseparable in diving, risking death or serious injury is not an objective of participation. The submersion into another world and the experience of such interaction is a valuable enough to justify the acceptance of the risks that accompany diving.

In John Dewy’s Art and Experience (Dewey, 2005) he differentiates between the experiences that take place any and every moment in the our lives, and those special experiences that are brought to a fruitful end. Dewey emphasizes the uniqueness of this way of experiencing by emphasizing either the preposition ‘an’ that precedes it or the verb that implicates it. ‘Experience in this vital sense is defined by those situations and episodes that we spontaneously refer to as being “real experiences”; those things of which we say in recalling them, ”that was an experience”(Dewey, 2005). Cold water diving sites offer another kind of experience (Garrod and Gossling, 2008).

**CONCLUSION**

Domestic diving activities support the local economy, provide new business opportunities, and contribute to the growing interest in marine protected sites. There is a need to understand and to assess the motivations, characteristics, and attitudes (Orams, 1998) of these fanatic cold water divers of Skomer. The divers know before they arrive that the water will be cold and have low visibility, but still they come, why? Tourism is a vital aspect of the economy of Wales and any potential tourism should be explored and if possible exploited. This knowledge will support plans to accommodate visitor development without detrimentally affecting the marine environment and
its resources, or affecting a decline in visitor satisfaction in the future, balancing the economic necessity with careful management.

The research aim is to understand fanatic cold water divers and differentiate their experiences. The objectives are to establish their needs, attitudes, and motivations for diving in cold water. It has been proposed to use a mixed method approach, triangulating the results from (1) stakeholder interviews; this will establish the core of the material for individual semi structured (2) interviews; the interviews will include the use of some projective methods, and finally a (3) Delphi group to be used as a review panel for the conclusions and data collected.

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THE ECONOMIC AND ENVIRONMENTAL IMPACTS OF BLUE FLAG BEACHES – A SOUTH AFRICAN PERSPECTIVE

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ABSTRACT

Coastal assets contribute more than one-third of South Africa’s Gross Domestic Product (GDP) and have been identified as important resources for tourism purposes and hence, economic growth.  Blue Flag South Africa is a success story of municipalities achieving world-class standards on their beaches.  The international standards address: water quality, environmental management, access to environmental information, as well as safety and security issues.  Recent research has identified that the Blue Flag programme brings about significant benefits in coastal management, tourism advancement, water quality improvements and municipal management.  South Africa was the first country outside of Europe to implement the international Blue Flag programme.  Blue Flag was established in the mid-1980s as a response to deteriorating water quality in the Mediterranean and concerns about the impact of this on tourism.  Today, Blue Flag is a global programme, involving 41 countries.
AN ECOSYSTEM MANAGEMENT APPROACH TO MARINE/CONSERVATION PARTKS

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ABSTRACT

Coastlines and nearshore waters face increasing challenges by environmental and social pressures. Designation of marine parks and park systems with protection or preservation objectives have been proposed for the conservation of these areas. In recent years, ecosystem management has been advocated in the development and implementation of park systems. Derived from wildlife management, this paradigm advocates inclusion of larger-scale ecosystems for more comprehensive management as well as a holistic approach which embraces more participative roles by various parties and stakeholders to encourage compliance with and support for management. This strategy shares many concepts shared with a more widely used and familiar concept of integrated management. Implementation of these management approaches have had varied success around the world due to insufficient recognition of social issues, benefit sharing, and co-management by local communities and users, as well as insufficient understanding the characteristics and variability of ecosystems and the effects of modification and degradation.
MULTI-PURPOSE REEFS PROPOSED FOR NELSON MANDELA BAY, SOUTH AFRICA

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ABSTRACT

Designed according to site specific conditions and user requirements, Multi-Purpose Reefs (MPR’s) can successfully provide coastal protection and amenity enhancement without negative environmental and aesthetic impacts associated with traditional coastal structures. In South Africa interest in this innovative technology has grown over recent years, MPR’s have been proposed to mitigate coastal erosion and provide amenity enhancement at St Francis Bay Beach. In Nelson Mandela Bay, MPR’s have been proposed for several sites with different conditions and requirements. Priority is given to Wells Estate, the most popular beach in the northern area of Nelson Mandela Bay serving a large community with relatively poor level of swimming experience. The wells estate area is exposed to relatively high wave energy and strong rip currents which make bathing dangerous, therefore this MPR is primarily aimed at creating safe bathing with the secondary aim of creating several high quality surfing breaks.
CONTINUED ENHANCEMENT OF BEACH TOURISM THROUGH THE PROVISION OF A SAFE BATHING ENVIRONMENT

Debbie Hargreaves
KwaZulu-Natal Sharks Board

ABSTRACT

The KwaZulu-Natal Sharks Board is an integral part of the bustling coastal tourism industry in the Province of KwaZulu-Natal. The KZNSB provides shark safety gear (nets and nets\drumline combinations) at popular holiday beaches. These installations are serviced at least 17 times a month.

Teams launch at dawn from the beaches to service the nets and/or drumlines. Mortalities are removed from the nets and live specimens are tagged and released. Conservation efforts include the removal of under-utilized installations, net reduction, introduction of drumlines to replace some of the nets and create combination usage of shark safety gear.

The KZNSB has education programmes to inform members of the public and learners of the vital role sharks play as top predators and to foster safe swimming habits.
THE BENEFITS AND COSTS OF MARINE MAMMALS IN CAPTIVITY

Michael Lück
Department of Tourism & Events
AUT University

ABSTRACT

Marine Parks evolved into major tourist attractions, and multi-million dollar businesses. The main attractions for most of these parks are larger marine mammals, such as orcas, Beluga whales, and dolphins. Many of these perform in highly choreographed shows, and/or in touch and feeding programs. Despite a growing concern about the ethics of keeping large marine mammals in inadequate conditions, the marine park industry maintains that they actively help with research, education, conservation, therapy, and the economy of the region. This presentation looks at these factors, and outlines the up- and downsides of marine mammals held in various marine parks with a focus on orcas (Orcinus orca).
BUILDING BRIDGES: THE COEGA IDZ AND TOURISM PROMOTION IN THE NELSON MANDELA BAY METROPOLE

Richard Haines
Department of Development Studies
School of Economics, Development and Tourism
Nelson Mandela Metropolitan University

ABSTRACT

In 1996 the South African government gave the green light for the development of a large IDZ (Industrial Development Zone) and associated deep water port at the mouth of the Coega River some 22 kilometers from Port Elizabeth. The Coega project is one flagship development projects of the DTI (Department of Trade and Industry) but has come in for substantial and sustained criticism from a range of private and civil society actors for its emphasis on capital intensive and environmental-unfriendly approach to local economic development in the Nelson Mandela Bay (NMB) metropole and the Eastern Cape coastline more generally. The CIDZ (Coega IDZ) was seen as displacing more cost-effective and labour-intensive approaches to local economic and coastal development in the Eastern Cape which were predicated on a sustainable use of natural capital, and an accompanying emphasis on tourism promotion.

Though the CDC (the Coega Development Corporation) – the designated operator of the CIDZ - has continued to emphasize a heavy-industrial approach to development within the Zone, the current situation in regard to the project is more fluid than previously. This paper argues that one needs to move beyond the dichotomy prevailing in the debates between the critics and the protagonists of the Coega project since its inceptions. More specifically, it is contented that the CIDZ has under-rated potential in contributing to tourism development and associated social and heritage capital enhancement in the NMB metro and the adjacent coastal and marine areas.
SECTION C

ABSTRACTS OF POSTERS
INVESTIGATING THE ROLE OF THE RECREATIONAL DIVE INDUSTRY IN MARINE RESERVE PERFORMANCE IN BELIZE AND HONDURAS

Andrew Joseph Sulock
University of Rhode Island, Department of Marine Affairs
127 South Pier Rd
Narragansett RI 02882 USA
Drew.sulock@gmail.com

ABSTRACT

Caribbean marine ecosystems face pressures from several anthropogenic sources such as over-fishing and development. Marine protected areas (MPAs) have been established in many locations to mitigate fishing pressures and maintain habitat. Recreational scuba diving within MPAs is commonplace throughout the Caribbean region. The relationships of the recreational dive industry and 10 marine reserves (no-take MPAs) within Belize and Honduras were examined in this study. Perceptions of dive professionals, visiting scuba divers, and community members were examined in three separate surveys regarding the local dive industry’s role in marine reserve performance. Perceptions about reserves were analyzed based on three categories of attributes that have been stated in reserve literature to be important to marine reserve performance. These categories involve social, ecological, and economic factors.

Reserves were divided into three categories (low, medium, and high dive density) based on the amount of dive industry presence within nearby communities. It was shown that reserves in the higher categories had more responses from community member surveys stating there was involvement from the dive industry in reserve management. Results show that where the recreational dive industry has a strong presence in communities associated with marine reserves, the industry can play a role in marine reserve performance, such as in reserve management and financing. This data also shows that community members surveyed generally think diving belongs in their community, showing that this industry may be seen as a suitable means for alternative income where extractive uses such as fishing have been prohibited.

Keywords: Marine Reserve Performance, Dive Tourism, Meso-American Reef

REFERENCES


CLIMATE CHANGE AND THE DETERMINANTS OF COASTAL & MARINE TOURISM VULNERABILITY

Alvaro Moreno
International Centre for Integrated assessment and Sustainable development, ICIS
Maastricht University
P.O. BOX 616 MD, Maastricht
a.moreno@icis.unimaas.nl

ABSTRACT

The relationship between climate change and coastal tourism is complex and bidirectional: on the one hand, climate change will impact destinations and visitors (e.g. sea level rise) and on the other tourism contributes directly to climate change (e.g. greenhouse gas emissions due to transport). Most of the studies on climate change and tourism have concentrated on assessing the impacts on specific tourism segments (such beach tourism), destinations or world regions, focusing on direct impacts on the environment and to a less extent on tourists’ preferences. There is a poor understanding about impacts on other coastal and marine tourism activities and about other direct and indirect factors play an important role on determining the magnitude of these impacts and the vulnerability of the destination. This poster will present the state-of-the-art on climate change impacts on coastal and marine tourism and a theoretical framework identifying the institutional, socio-cultural, economic and environmental factors that determine tourism vulnerability at three scales: proximal, distal and contextual.

Keywords: vulnerability determinants, climate change, coastal & marine tourism
THE ENVIRONMENTAL IMPACTS OF BEACH SPORT TOURISM EVENTS: A CASE STUDY OF DURBAN’S NORTH BEACH, SOUTH AFRICA

Fathima Ahmed
Discipline of Geography
School of Environmental Sciences
University of KwaZulu-Natal
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Discipline of Geography
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ABSTRACT

Durban has several established and internationally recognised beach sport events such as surfing, angling, diving and yachting. The sustainability of these events relies exclusively on a healthy and viable environment. The question of ecological sustainability is important in the context of coastal tourism, and particularly appropriate in terms of beach sport events which are activities at the interface of humans, land, and water. The large arrival of transient populations that events attract and the necessary supporting infrastructure of media, catering, merchandise and transportation, have critical implications for the environment in terms of resource consumption, waste production, and degradation of the natural environment. On the other side of the coin, it is imperative to note that most of Durban’s beaches have been artificially reconstructed, and hence are in dire need to be maintained. Furthermore, recent studies on water quality have revealed unacceptably high levels of faecal streptococcus, which is why some of Durban’s beaches have lost their Blue Flag status. These concerns form both the dry and the wet side of the coastline put the sustainability of beach tourism events in a particularly precarious position. This paper examines environmental impacts of beach sport tourism events by drawing on primary research conducted over a five year period, during such beach events. Important aspects that will be underscored are the potential integration of beach sport tourism events given the ecological sensitivity of coastal areas (which are superimposed on human impacts), and recommend means to promote, manage and facilitate optimal sport event tourism and its related development.

Keywords: Coastal tourism, sport events, sustainability, ecological sensitivity

Daniela Gračan, Ph.D., Assistant Professor
Romina Alkier Radnić, Ph.D., Assistant Professor
Marinela Krstinić Nižić, M.Sc. Assistant
THE UNREGULATED GROWTH OF HUMPBACK WHALE WATCHING IN NEW CALEDONIA: WHERE ARE WE TODAY?

Aline Schaffar¹, Claire Garrigue¹ and Sabrina Virly²

¹Opération Cétacés, ²Environnement de la Mine au Récif (EMR)

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ABSTRACT

In recent years, whale and dolphin watching activities have known an important growth worldwide (Hoyt, 2001). In the South Pacific, this industry has been booming with an average increase in numbers of 45% per year since 1998 (Economists @ Large & Associates, 2008). Humpback whales play an important role in this development; their presence in Oceania during winter months attracting thousands of tourists every year (Schaffar and Garrigue, 2007). In New Caledonia, humpback whale watching started in 1995 and focuses on the whale’s main reproductive area in the southern lagoon of the island, recently listed as a World Heritage site. Today, although managed through a code of conduct and active surveillance of the area, these activities remain unregulated. Using questionnaires, interviews, and field surveys, the growth of humpback whale watching activities in New Caledonia between 1995 and 2008 was assessed. In 1995, only four commercial tour operators offered 19 whale watching trips for 129 passengers. These numbers have been growing consistently ever since and in 2008, 26 boats undertook 360 humpback whale watching trips, carrying approximately 4425 passengers. This represents an average growth of 39.9% per year since 1995. With only a small number of humpback whales visiting the southern lagoon of New Caledonia every year, these activities are likely to have reached maximum carrying capacity. Such an unregulated growth combined with a high level of exposure of humpback whales to whale watching boats (Schaffar and Garrigue, 2008), underline the urgent need for further management measures.

Keywords: whale watching, sustainability, growth, management.

REFERENCES


A PROFILE OF TOURISTS DIVING WITH SHARKS IN PACIFIC HARBOUR, FIJI

Roberto D. Altobelli
Michael Lück
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ABSTRACT

Travelling to various parts of the world with the purpose of participating in shark diving is a relatively recent phenomenon. It has only been approximately twenty years since this recreational tourism activity began taking off. In the past ten years, sharks have also become a particular key resource for the Pacific Harbour (Fiji) tourism industry, and dive trips to observe these animals in their natural habitat occur regularly. This poster presents some preliminary results of a wider study currently in progress regarding Pacific Harbour’s shark tourism industry, with specific attention being paid to the actual individuals partaking in this activity. Reviewing the marine wildlife tourism literature reveals that to date there has been limited investigation carried out on the subject of the ‘shark tourist’. This study begins filling this gap by presenting preliminary data, gathered via paper-pen self administered on-tour questionnaires, from two specific shark dive sites in Pacific Harbour, Fiji. Results reveal that these shark tourists come from all walks of life, are well educated, young, and, for the most part, see themselves as unique to other tourists, are adventurous and curious travellers who like sharks and the experience gained from viewing them in their natural environment. Moreover, observations and conversations with shark divers reveal a genuine willingness to participate in the study suggesting perhaps a desire to contribute to other causes such as shark conservation. Further studies in this area, however, are necessary to gain even further insight into these individuals.
MANAGEMENT OF SHARK TOURISM: RESEARCH AND ITS CONTRIBUTION TO SECURING THE RAGGEDTOOTH SHARK TOURISM INDUSTRY

Sarika Singh
Department of Environment and Tourism: Marine and Coastal Management
Private Bag X2: Roggebaai: 8012

sasingh@deat.gov.za

ABSTRACT

Raggedtooth Sharks, *Carcharias taurus*, are a near shore species common to the waters off the KwaZulu-Natal (KZN) coastline (Cliff 1999). In South Africa, concern has been expressed regarding the legitimacy of the “near threatened” categorisation of *C. taurus*, as sightings of this popular reef species suggest a declining population trend (Van Tienhoeven & Peddemors, unpubl.). However, a 2005 study shows that populations are stable (Dicken 2005) indicating that reduced sightings of Raggedtooth Sharks may be attributed to factors other than population decline. The biology of *C. taurus* places it at a higher risk of disturbance by human impacts. In South Africa, *C. taurus* undertake a well-defined breeding migration along the east coast (Cliff 1999). In September adult females enter the KZN mating grounds from the waters of the Eastern Cape. Mature males arrive soon thereafter and mating occurs from October to November. Females then continue their northward migration, spending 5-months of their gestation period in northern KZN’s warmer waters, before journeying back south to pup (Cliff 1999). Recesses and overhangs, within reef formations situated along the migration route serve as preferred resting sites for aggregations of Raggedtooth Sharks during inactive phases of the day. These reproductive aggregations are targeted by dive operators in 2 areas, Umkomaas (Aliwal Shoal) and Sodwana Bay (Quarter mile reef) constituting a primary tourist attraction during peak seasons. Given the nature of these aggregations and the sensitivity of animals to diver disturbance management protocols had to be instituted based on stringent scientific investigation, in order to mitigate the impacts of divers on animals, ensure the sustainability of the industry and achieve maximum participation in the industry.

Keywords: Tourism; Raggedtooth Shark; Management

REFERENCES


THE UNDERUTILISED TOURISM POTENTIAL OF THE CAPE FUR SEAL IN SOUTH AFRICA: THE ROLE OF THE COMMUNITY

S.M. Seakamela, H. Oosthuizen, M.A. Meijer, S.P. Kirkman
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smseakamela@deat.gov.za

ABSTRACT

Pinniped-focused tourism has proven to be economically viable globally. In South Africa, it is mainly undertaken by established companies operating with little or no community based involvement. An example is Hout Bay harbour, situated on the west coast within a fishing village on the Cape Peninsula tourist route, where three companies offer almost exclusively ship-based seal ecotourism. These operators are not directly regulated; thus making it difficult to assess the effects on the local population of seals at local seal colony. In line with government policy, there is a need to explore: socioeconomic benefits to and empowerment of communities, while monitoring the ability of the seal population to withstand large scale tourism. Questions such as how can communities become involved in this tourism industry? What are the potential obstacles and pitfalls? How can the local communities be assisted towards the establishment of their own competitive business must be addressed. However, operating such a business may be a huge task particularly with respect to obtaining financial resources. Kayaks, seal viewing vessels and seal cage diving operations as well as support based businesses such as souvenir shops may not be affordable to the poorer communities. Furthermore, they could lack the know-how to run such a business. This poster will therefore demonstrate what role the state, business and community leaders could play to increase the role and benefits of seal-based tourism industry in South Africa using Hout Bay as a case study.

Keywords: Pinniped-focused tourism, South Africa, community based involvement
SECTION D

ABSTRACTS OF PLENARY PRESENTATIONS
MINE IS BIGGER THAN YOURS - THE RISE AND RISE OF SUPER-YACHT TOURISM

Mark Orams
New Zealand Tourism Research Institute
School of Hospitality and Tourism
AUT University
Aotearoa/New Zealand

ABSTRACT

From maxi to super to mega, recreational vessels over 30 metres in length are more prevalent and larger than ever before. Improvements in technology and the application of materials such as carbon fibre and titanium have allowed the construction of recreational vessels of unprecedented size. The owners of these vessels continue to invest enormous sums in larger and more extravagant vessels each year.

Super-yachts are now a specialist area of marine tourism that supports a significant industry which ranges from design, engineering and construction to navigation, hospitality, publishing, photography and art. A number of locations and events have been deliberately created to attract these floating palaces, but super-yachts are also becoming more self sufficient and visiting increasingly remote places. Alongside the impressive feats of engineering, opulence and economic impacts associated with these vessels are issues of piracy, security and environmental management.
REMOTE TECHNOLOGIES FOR BEACH SAFETY

Dr Jeff Wilks
Managing Director, Tourism Safety
Visiting Professor of Travel Law
Northumbria University
UK

ABSTRACT

Integrated coastal management programs are increasingly relying on remote technologies to provide a safety net for beach users. These technologies include satellite tracking of weather conditions, the use of closed circuit television cameras for personal security and crime prevention, automated monitoring of health and hygiene concerns, and unmanned emergency alert facilities. While these technologies are now a critical aspect of beach safety, their use raises a number of legal and operational issues for coastal managers. This presentation examines current practice in the use of remote technologies for beach safety, especially in relation to tourism.
COASTAL AND MARINE TOURISM: WHERE WE HAVE BEEN, WHERE WE ARE, WHERE WE WILL GO

Michael Lück
Department of Tourism & Events
AUT University

ABSTRACT

Coastal and marine tourism has been researched for many years, but only in the last decade or so it has been recognised as a field of study. The first Coastal and Marine Tourism Congresses in Hawaii (1990 and 1996), as well as Orams’ volume “Marine Tourism: Development, Impacts and Management” (1999, Routledge) were instrumental in bringing forward this field of study. While the early years were more related to island tourism and mass tourism in coastal resorts, increasingly the body of literature diversified into more specialised niche tourism, such as, polar tourism, whale and dolphin watching, SCUBA diving, marine wildlife tourism, cruise tourism, and many more. This presentation looks at the development of coastal and marine tourism in the academic world, its current state, and where it might head in the future.
TO BE OR NOT TO BE: TOURISM DEVELOPMENT ON A SOUTH PACIFIC ISLAND

Travis W. Heggie

ABSTRACT

Tourism in the South Pacific conjures up images of small island resorts in Tahiti, pristine looking beaches in Fiji, and a paradise of uninhabited coral islands with a healthy tourism industry. However, not all islands in the South Pacific have a booming tourism industry or the infrastructure to support tourism. This presentation reviews a 10-year effort of one South Pacific island group striving to diversify their economy and establish a tourism industry. It will highlight the success of establishing a national park and marine reserve that protects wildlife, rainforest, and a coral reef that is attracting tourists. It will also reflect on the continuing challenge of harbour and waterfront pollution, developing strategies to accommodate both industrial shipping and cruise ship services, restructuring and revitalizing basic hospitality services, and balancing the demands of ecotourism and golf course development.
SUGGESTIONS FOR STRETCHING THE COVERAGE OF COASTAL AND MARINE TOURISM INVESTIGATIONS

Marc L. Miller
School of Marine Affairs, University of Washington
Seattle Washington, USA

ABSTRACT

The field of coastal and marine tourism has evolved to the point it is at the end of a pre-paradigmatic stage. Today experts in the field strive to design and implement conservation-informed policies and practices in government, the private sector, and in nongovernmental organizations. The multidisciplinary field is shaped by natural science research and by human dimensions research (encompassing the social sciences, the policy sciences, the applied humanities, and a variety of professional specialties). The field stands to be enhanced, however, with expansions on the technological front, the aesthetic front, and the ethical front. The research and practitioner base can therefore be strengthened with understandings of technology and built environments, understandings of landscape, and understanding of stakeholder aspects of triple bottom line sustainability.
APPENDIX 1

PROGRAMME OF THE CMT2009
# CMT2009 Conference Programme

**Tuesday 23 June 2009**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>16:00 - 19:00</td>
<td>Registration Foyer, Tsitsikamma Conference Center, The Boardwalk</td>
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<tr>
<td>19:00 - 21:00</td>
<td>Welcome Reception 34° South, The Boardwalk</td>
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**Wednesday 24 June 2009**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>07:30 - 08:30</td>
<td>Registration &amp; Tea Foyer, Tsitsikamma Conference Center</td>
</tr>
<tr>
<td>08:30 - 09:00</td>
<td>Plenary Session - Tsitsikamma 1 Chairman: Peter Myles</td>
</tr>
<tr>
<td>09:00 - 09:30</td>
<td>CMT2009 Conference Opening Executive Mayor: Nelson Mandela Bay Municipality Executive Mayor: Cacadu District Municipality</td>
</tr>
<tr>
<td>09:30 - 10:00</td>
<td>Beach Tourism Opportunities: An International Perspective Dr Jeff Wilks, Managing Director: Tourism Safety, Australia</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td>Beachfront Development in South Africa: Insights from the Vision 2020 Projects Donald McGillivray, Director: Afri-Coast Engineers</td>
</tr>
<tr>
<td>10:30 - 11:00</td>
<td>Breakout Groups Tea Foyer, Tsitsikamma Conference Center</td>
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</tbody>
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### Session 1
**Beach Tourism & Safety Workshop**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:30 - 11:00</td>
<td>The Economic and Environmental Impacts of Blue Flag Beaches – a South African perspective Alison Kelly, Blue Flag Program Manager, WESSA</td>
</tr>
<tr>
<td>11:00 - 11:30</td>
<td>Developing an Audit Framework for Beach Tourism Tony Van Den Enden Surf Life Saving Tasmania, Australia</td>
</tr>
<tr>
<td>11:30 - 12:00</td>
<td>Breakout Groups</td>
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<tr>
<td>12:00 - 12:30</td>
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<tr>
<td>12:30 - 13:00</td>
<td>Breakout Groups</td>
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<tr>
<td>13:00 - 14:00</td>
<td>Lunch Bayside Pantry, Tsitsikamma Conference Center</td>
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### Session 2
**Session Theme:** Marine Parks, Reserves & Mammals

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:30 - 11:00</td>
<td>Whose rights, whose ocean? Challenges for MPAs in the United States. Seth Macinko, Marc L Miller Department of Marine Affairs, University of Rhode Island, USA / School of Marine Affairs, University of Washington, Seattle, WA, USA</td>
</tr>
<tr>
<td>11:00 - 11:30</td>
<td>Towards a utilitarian ethic for marine wildlife tourism John Dobson Department of Tourism Hospitality and Events Management University of Wales Institute, Cardiff</td>
</tr>
<tr>
<td>11:30 - 12:00</td>
<td>The impact of wildlife tourism experiences on visitors’ learning for sustainability Ray Ballantyne, Jan Packer, John Falk University of Queensland School of Tourism, Brisbane, Australia /Oregon State University, Corvallis, Oregon, USA</td>
</tr>
<tr>
<td>12:00 - 12:30</td>
<td>Using wildlife tourism to enhance conservation learning: a case study of mon Repos turtle rookery Karen Hughes University of Queensland School of Tourism, Brisbane, Australia</td>
</tr>
<tr>
<td>12:30 - 13:00</td>
<td>What do people do at Ningaloo? Spatial and temporal mapping of tourist usage in a large marine park, northwestern Australia Lynnath E. Beckley, Claire B. Smallwood, Susan A. Moore Halina T. Kobryn School of Environmental Science, Murdoch University, 90 South Street, Murdoch WA 6150, Australia</td>
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## Wednesday 24 June 2009

<table>
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<th>Time</th>
<th>Session 1</th>
<th>Session Theme:</th>
<th>Session 2</th>
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<tbody>
<tr>
<td>14:00 - 14:30</td>
<td>Beach Tourism &amp; Safety Workshop</td>
<td>Socio-economic &amp; Marine Environment</td>
<td>What do fishers think of scuba divers? Socio-economic impacts of the scuba diving industry in the Solomon Islands</td>
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<tr>
<td></td>
<td>Chair Jeff Wilks</td>
<td>Chair: Jan Auyong</td>
<td>Vanessa Smith, Clare Fitzsimmons</td>
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<tr>
<td></td>
<td>Room: Tsitsikamma 1</td>
<td>Room: Tsitsikamma 2</td>
<td>Newcastle University, Newcastle Upon Tyne, UK</td>
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<tr>
<td>14:30 - 15:00</td>
<td>Report back from breakout groups, discussion from the floor, opportunities for officials from other jurisdictions to make statements</td>
<td>Travel motivations of tourists to selected marine destinations</td>
<td>CMT2009/A/043</td>
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<tr>
<td>15:00 - 15:30</td>
<td>Beach Tourism &amp; Safety Workshop</td>
<td>The socio-economic impact of Africa’s oldest marine park</td>
<td>S. Oberholzer, Prof. M. Saayman, Prof. A. Saayman, Prof. E. Slabbert</td>
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<td></td>
<td>Chair Jeff Wilks</td>
<td>Institute for Tourism and Leisure Studies, School of Economics</td>
<td>North-West University, Potchefstroom Campus</td>
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<tr>
<td>15:30 - 16:00</td>
<td>Workshop outcomes summarised and discussed, statement of commitment and key priorities announced</td>
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<tr>
<td>16:00 - 16:30</td>
<td>Beach Tourism &amp; Safety Workshop</td>
<td>Climate Change</td>
<td>How hot is too hot? A survey on climate (change) and tourism</td>
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<td>Chair Jeff Wilks</td>
<td>Chair: Jan Auyong</td>
<td>Alvaro Moreno, Bas Amelung</td>
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<td></td>
<td>Room: Tsitsikamma 1</td>
<td>Room: Tsitsikamma 2</td>
<td>International Centre for Integrated Assessment and Sustainable development - Maastricht University, Maastricht, The Netherlands</td>
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<tr>
<td>16:30 - 17:00</td>
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<td>Climate change: Creating demand for sustainable assessments in coastal and marine tourism</td>
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<td>Jamie Erin Mooney, Marc L. Miller</td>
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<td>University of Washington, School of Marine Affairs, 3707 Brooklyn Ave NE, Seattle, WA, USA</td>
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<tr>
<td>17:00</td>
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<td>Closing of Day 1</td>
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<td>19:00 - 22:00</td>
<td>Nautical Evening</td>
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<td>Algoa Bay Yacht Club</td>
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<td>Time</td>
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<td>07:30 - 08:30</td>
<td>Registration &amp; Tea</td>
<td>Plenary Session - Tsitsikamma 1</td>
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<td></td>
<td>Foyer, Tsitsikamma Conference Center</td>
<td>Chairman: Peter Myles</td>
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<tr>
<td>08:30 - 09:15</td>
<td>Coastal and Marine Tourism: Where we have been, where we are, where we will go</td>
<td>Coastal and Marine Tourism: Where we have been, where we are, where we will go</td>
<td>Coastal and Marine Tourism: Where we have been, where we are, where we will go</td>
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<td>Michael Lück</td>
<td>Dr Sheila Peake</td>
<td>Dr Sheila Peake</td>
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<td></td>
<td>Department of Tourism &amp; Events, A U T University, N e w Zealand</td>
<td>University of the Sunshine Coast, Queensland, Australia</td>
<td>University of the Sunshine Coast, Queensland, Australia</td>
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<tr>
<td>09:15 - 10:00</td>
<td>Mine is bigger than yours - the rise and rise of super-yacht tourism</td>
<td>Shadananan Nair</td>
<td>Shadananan Nair</td>
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<td>Mark Orams</td>
<td>Nansen Environmental Research Centre, Kerala, India</td>
<td>Nansen Environmental Research Centre, Kerala, India</td>
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<tr>
<td>10:00 - 10:30</td>
<td>Registration &amp; Tea</td>
<td>Successful interpretation in Great Barrier Reef tourism: Dive in or keep out of it?</td>
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<td>Alexandria Coghlan, Bruce Prideaux, Michael Lück</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Session Theme: Coastal &amp; Marine Tourism</td>
<td>Session Theme: Socio-economic &amp; Marine Environment</td>
<td>Session Theme: Diving</td>
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<td>Chair: Travis Heggie</td>
<td>Chair: Jan Auyong</td>
<td>Chair: Jeff Wilks</td>
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<td>Room: Tsitsikamma 2</td>
<td>Room: Tsitsikamma 4</td>
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<td>10:30 - 11:00</td>
<td>An industry in decline? The evolution of whale-watching tourism in Hervey Bay, Australia.</td>
<td>Socio-economic and environmental issues associated with the increasing tourism activity in the coastal zones of Kerala</td>
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<td>Dr Sheila Peake</td>
<td>Shadananan Nair</td>
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<td>Nansen Environmental Research Centre, Kerala, India</td>
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<td>11:00 - 11:30</td>
<td>The learning tourist: the role of identity-related visit motivations</td>
<td>Silent Invasion: Investigating Oregonians’ self-reported awareness, understanding and behaviors toward invasive species</td>
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<td>John H. Falk</td>
<td>Lynn D. Dierking, Samuel Chan, Joseph Gone, Erika Wolters</td>
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<td>11:30 - 12:00</td>
<td>A model for coastal tourism: the coast all in one’s mind</td>
<td>A focus on coastal scenery and landforms: the geotourism potential of coastal environments.</td>
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<td>Martijn Smenge</td>
<td>David Newsome</td>
<td>David Newsome</td>
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<td></td>
<td>NHTV International higher education Breda, Breda, The Netherlands</td>
<td>Murdoch University, Murdoch, Western Australia</td>
<td>Murdoch University, Murdoch, Western Australia</td>
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<td>12:00 - 12:30</td>
<td>Dude fishing as an embryonic tourist form: theory and practice</td>
<td>Shifting the carrying capacity concept from theory into practical application: An example using recreational boats in Mallorca, Balearic Islands, Spain</td>
<td>Shifting the carrying capacity concept from theory into practical application: An example using recreational boats in Mallorca, Balearic Islands, Spain</td>
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<td></td>
<td>Department of Marine Affairs, University of Rhode Island, USA / School of Marine Affairs, University of Washington, Seattle, WA, USA</td>
<td>1500CIB, Sistema de Observación y Costero de las Islas Baleares, Spain</td>
<td>1500CIB, Sistema de Observación y Costero de las Islas Baleares, Spain</td>
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<tr>
<td></td>
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<td>MEDEA(CSIC-UB), Instituto Mediterráneo de Estudios Avanzados</td>
<td>MEDEA(CSIC-UB), Instituto Mediterráneo de Estudios Avanzados</td>
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<td>12:30 - 13:30</td>
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### Thursday 25 June 2009

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<tr>
<th>Time</th>
<th>Session 1</th>
<th>Session 2</th>
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<tr>
<td>13:30 – 14:00</td>
<td>Realizing the potential of marine naturalist interpreters as conduits of a mission</td>
<td>Socio-economic aspects of boat-based ecotourism during the sardine run within the Pondoland MPA, South Africa</td>
<td>Y generation and beach safety</td>
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<td></td>
<td>Brooke Porter, Merrill Kaufman</td>
<td>M.L. Dicken</td>
<td>Dr Donna Pendegast Dr Jeff Wilks</td>
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<tr>
<td></td>
<td>Pacific Whale Foundation, 300 Maalaea Road, Suite 211, Wailuku, Maui, Hawaii, USA</td>
<td>Department of Development Studies, School of Economics and Development, Nelson Mandela Metropolitan University</td>
<td>School of Education and Professional Studies, Griffith University, Gold Coast Tourist Safety Group, Gold Coast, Queensland, Australia</td>
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<tr>
<td>14:00 – 14:30</td>
<td>Marine protected areas: from conservation to sustainable development</td>
<td>Value orientations toward coral reefs in recreation and tourism settings: a conceptual and measurement approach</td>
<td>Lifeguard training for tourism resorts: a case study from Fiji</td>
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<td></td>
<td>Reagan Iohandjoj ro’okaso</td>
<td>Mark D. Needham</td>
<td>Tony Van Den Enden</td>
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<td></td>
<td>University of Kinshasa, 78 Ngadi Street, Democratic Republic of Congo</td>
<td>Department of Forest Ecosystems and Society, Oregon State University, 321 Richardson Hall, Corvallis, Oregon, USA</td>
<td>Surf Life Saving Tasmania, Australia</td>
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<tr>
<td>14:30 – 15:00</td>
<td>‘RIANGIPUKUTOHEIOTEWA’ Ocean noise and tourism</td>
<td>A conjoint analysis of situational influences on acceptance of coastal recreation management strategies in Hawaii</td>
<td>Tourist injuries on U.S. National seashores</td>
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<td></td>
<td>Emmanuelle Martínez¹ Mark B. Orams²</td>
<td>Mark D. Needham, Brian W. Susster</td>
<td>Travis W. Heggie</td>
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<tr>
<td></td>
<td>Massey University, Albany Campus North Shore Mail Centre, New Zealand</td>
<td>Department of Forest Ecosystems and Society, Oregon State University, 321 Richardson Hall, Corvallis, Oregon, USA; Department of Geography, University of Hawaii, 445 Saunders Hall, 2424 Maili Way, Honolulu, Hawaii, USA</td>
<td>University of North Dakota, Recreation &amp; Tourism Studies Program; Director, Great Plains Injury Prevention Research Initiative; University of North Dakota</td>
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<tr>
<td>15:00 – 15:30</td>
<td>Feeding Amazonian boto (Inia geoffrensis) as a tourism attraction: A path towards tragedy?</td>
<td>Building Bridges: The Goa‘iga 1D2 and Tourism Promotion in the Nelson Mandela Bay Metropole</td>
<td>Aspects of the legal environment of coastal and marine tourism in South Africa</td>
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<td></td>
<td>Luiz Claudio Pinto de Sá Alves¹ Artur Andriolo¹ Mark B. Orams²</td>
<td>Richard Haines (Department of Development Studies, School of Economics, Development and Tourism, Nelson Mandela Metropolitan University)</td>
<td>Prof Patrick HG Vrancken</td>
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<td></td>
<td>Projeto Monitoramento do Baleia por Satélite, Instituto Aqualie, Rua Edgard Werneck, 428/32, Rio de Janeiro, RJ, 22763-010, Brazil. 3 New Zealand Tourism Research Institute, AUT University, Private Bag 90006, Auckland 1142, Aotearoa/New Zealand.</td>
<td>Nelson Mandela Metropolitan University University Way, Port Elizabeth, South Africa</td>
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<td>15:30 – 16:00</td>
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<td>16:00</td>
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<td>16:00</td>
<td>Conference Dinner</td>
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<td>19:00 / 19:30 – 23:00</td>
<td>Launch: Opaque Sneak Preview: Eastern Cape Tourism Brand</td>
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## Session 1: Coastal & Marine Tourism

**Chair:** Tony van den Enden  
**Room:** Tsitsikamma 1

<table>
<thead>
<tr>
<th>Time</th>
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</table>
| 08:00 - 08:30 | CMT2009/A/027 | Foyer, Tsitsikamma Conference Center | Where are the stars of the show?: Disappointment in marine ecotourism  
Dr Carl Caster  
Aberystwyth University  
UK Institute of Biological, Environmetal & Rural Sciences  
Ulanbadam,  
Aberystwyth |
| 08:30 - 09:00 | CMT2009/WP/052 | Foyer, Tsitsikamma Conference Center | Fanatic scuba divers do it in the cold? Establishing the need to examine the attitudes and motivations of scuba divers in South Wales (UK)  
Nigel Jones¹ John Dobson² Professor Eliri Jones³  
Cardiff School of Management, University of Wales Institute Cardiff  
UWIC Colchester Avenue, Cardiff |
| 09:00 - 09:30 | CMT2009/A/024 | Foyer, Tsitsikamma Conference Center | Key stakeholder views of marine research tourism in Australia  
Peter Wood John Rumnay  
James Cook University and Sustainable Tourism CRC, Queensland, Australia |
| 10:00 - 10:30 | CMT2009/WP/066 | Foyer, Tsitsikamma Conference Center | Continued enhancement of beach tourism through the provision of a safe bathing environment  
Debbie Hargreaves  
KwaZulu-Natal Sharks Board, KwaZulu-Natal, South Africa |
| 10:30 - 11:00 | CMT2009/WP/065 | Foyer, Tsitsikamma Conference Center | Multi-Purpose Reefs proposed for Nelson Mandela Bay, South Africa  
Dylan Anderson¹, Jose Borrero², Shaw Mkd³  
¹Afri-Coast Engineers SA (Pty) Ltd, ²ASR Ltd – Marine Consulting and Research |

### Plenary Session - Tsitsikamma 1

**Chairman:** Marc Miller

- CMT2009/P1/022 Remote technologies for beach safety  
Dr Jeff Wilks  
Managing Director: Tourism Safety, Australia

- CMT2009/WP/015 'Islandness' as a resource: a look at how being small and isolated has found a place in a globalizing world  
M. Charles Festa, Seth Mauroko, Marc L. Miller  
Department of Marine Affairs, University of Rhode Island, USA / School of Marine Affairs, University of Washington, Seattle, WA, USA

- CMT2009/A/019 Enhancement of South African tourism and hospitality enterprise within the supply chain: The case for barter membership  
Eckhaus Eyal, Frank Bates  
Bar Ilan University, Logistic Management Dept, Israel; Izmir University of Economics, Logistics

### Session 2: Tourism Promotion & Marketing

**Chair:** Mark Orams  
**Room:** Tsitsikamma 2

<table>
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| 08:00 - 08:30 | CMT2009/WP/016 | Foyer, Tsitsikamma Conference Center | Contemporary multimedia network as a method of informing nautical tourists  
Faculty of Tourism and Hospitality Management in Opatija, Primorska 42, 51410 Opatija, Croatia |
| 09:00 - 09:30 | CMT2009/WP/036 | Foyer, Tsitsikamma Conference Center | Nautical tourism as the means of branding the north-Adriatic destinations in tourism markets  
Daniela Gražan, Romina Alkier Radnić, Marinela Kristinić Nižić  
Faculty of Tourism and Hospitality Management in Opatija, Primorska 42, 51410 Opatija, Croatia |
| 10:00 - 10:30 | CMT2009/WP/047 | Foyer, Tsitsikamma Conference Center | Underwater films as a medium for education and awareness in the marine environment  
Rainer Schimpf  
Ocean Messengers NGO, Port Elizabeth, Nelson Mandela Bay, South Africa |
| 10:30 - 11:00 | CMT2009/WP/067 | Foyer, Tsitsikamma Conference Center | The benefits and costs of marine mammals in captivity  
Michael Lück  
Auckland University of technology, School of Tourism and Hospitality |

### Registration & Tea

**Location:** Foyer, Tsitsikamma Conference Center  
**Time:** 11:00 - 11:30

### Lunch

**Location:** Bayside Pantry, Tsitsikamma Conference Center  
**Time:** 13:00 - 14:00

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**Friday 26 June 2009**

**Session 1: Coastal & Marine Tourism**  
**Chair:** Tony van den Enden  
**Room:** Tsitsikamma 1

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| 10:30 - 11:00 | CMT2009/WP/065 | Foyer, Tsitsikamma Conference Center | Multi-Purpose Reefs proposed for Nelson Mandela Bay, South Africa  
Dylan Anderson¹, Jose Borrero², Shaw Mkd³  
¹Afri-Coast Engineers SA (Pty) Ltd, ²ASR Ltd – Marine Consulting and Research |

### Plenary Session - Tsitsikamma 1

**Chairman:** Marc Miller

- CMT2009/P1/022 Remote technologies for beach safety  
Dr Jeff Wilks  
Managing Director: Tourism Safety, Australia

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### Session 2: Tourism Promotion & Marketing**

**Chair:** Mark Orams  
**Room:** Tsitsikamma 2

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### Registration & Tea

**Location:** Foyer, Tsitsikamma Conference Center  
**Time:** 11:00 - 11:30

### Lunch

**Location:** Bayside Pantry, Tsitsikamma Conference Center  
**Time:** 13:00 - 14:00
Friday 26 June 2009

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<td>Suggestions for stretching the coverage of coastal &amp; marine tourism investigations</td>
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<td>14:45 - 15:15</td>
<td>CMT2009 Conference Closing &amp; Farewell</td>
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APPENDIX 2

LIST OF PARTICIPANTS
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<tr>
<th>Surname</th>
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<th>Organisation</th>
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<td>Abrahams</td>
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<td>Nelson Mandela Metropolitan University</td>
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<td>Addiejappie</td>
<td>Mr</td>
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<tr>
<td>Adewuyi</td>
<td>Hakeem Adenkunle</td>
<td>Mr</td>
<td>Haag Environmental Consultants Services</td>
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<td>+23422312068</td>
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<tr>
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<td>Fatima</td>
<td>Ms</td>
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<tr>
<td>Albers</td>
<td>Tony</td>
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<tr>
<td>Anderson</td>
<td>Dylan</td>
<td>Mr</td>
<td>Afri-Coast Engineers SA (Pty) Ltd</td>
<td><a href="mailto:dylana@africoast.com">dylana@africoast.com</a></td>
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<td>+27415853437</td>
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<tr>
<td>Arends</td>
<td>Carleen</td>
<td>Ms</td>
<td>Nelson Mandela Bay Municipality</td>
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<tr>
<td>Ayuong</td>
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<tr>
<td>Ballantyne</td>
<td>Roy</td>
<td>Professor</td>
<td>University of Queensland</td>
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<tr>
<td>Baxter</td>
<td>DA</td>
<td>Ms</td>
<td>Nelson Mandela Metropolitan University</td>
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<tr>
<td>Beckley</td>
<td>Lynnath</td>
<td>Dr</td>
<td>Murdoch University</td>
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<td>+61893606392</td>
<td>+61893104997</td>
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<tr>
<td>Bhoola</td>
<td>Bunny</td>
<td>Mrs</td>
<td>KwaZulu-Natal Sharks Board</td>
<td><a href="mailto:bunny@africanlink.co.za">bunny@africanlink.co.za</a></td>
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<tr>
<td>Cater</td>
<td>Carl</td>
<td>Dr</td>
<td>Griffith University</td>
<td><a href="mailto:c.cater@griffith.edu.au">c.cater@griffith.edu.au</a></td>
<td>+61404679365</td>
<td>+61755528507</td>
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<td>Coghill</td>
<td>Alexandra</td>
<td>Dr</td>
<td>James Cook University</td>
<td><a href="mailto:alexandra.coghill@jcu.edu.au">alexandra.coghill@jcu.edu.au</a></td>
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