



Australian Academy of Science
The Shine Dome

Nature Tourism and the Environment

Fenner Conference 2001

Abstracts



Abstracts

Fenner Conference

Nature Tourism and the Environment

**Australian Academy of Science
Canberra**

3-6 September 2001

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The Australian Academy of Science Fenner Conferences

With the generous support of Professor F J Fenner FAA, FRS and the late Mrs Fenner, the Australian Academy of Science conducts a series of conferences on environmental and conservation issues in Australia and its environs. The purpose of these conferences is to bring together those with relevant scientific, administrative and policy expertise to consider current environmental and conservation problems in Australia, thereby contributing to the formation of policies that can alleviate some of these problems.

Conference Theme: Nature Tourism and Environment

The theme of this 2001 Fenner Conference is the design and operation of policy instruments for managing tourism in National Parks, World Heritage and other land tenures, based on scientific study of outcomes from existing tourism activity and management tools. Its focus is on applications of ecological and social sciences. Topics covered include: science in the management of nature tourism; characteristics of nature tourism; effects of nature tourism on the physical and biological environment; and tools and techniques for managing visitors and natural resources. The goal of the conference is to produce recommendations for future research and policy: what do we need to know, and what do we need to do, to manage nature tourism better?

Conference Sponsors

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Parks Victoria

Silver

Tourism Queensland
Montana State University

Keynote Speakers

Geoffrey Ashton - Director, Foundation for National Parks and Wildlife

B.Ec (ANU), MA (Cantab) (Science and Law). Assistant Station Manager, Scottish Australian Company, 1970's: managing pastoral properties in NT, SA, QLD, NSW. Four years in New York, corporate and project finance. Executive and non-executive Director of public companies in banking, oil exploration, mining and real estate development. Ten years in the venture capital industry, 1990 – current. Former Treasurer of the National Trust (NSW). Immediate past Chairman, McCaughey Institute for agricultural research. Board Member, Foundation for National Parks and Wildlife, 7 years.

Hon. John Brown, AO - Chairman, Tourism Task Force

Commonwealth Minister for Sport and Tourism, 1983-1987. Four additional portfolios including Minister for Environment. Australian Institute of Marketing Gold Award, for the Paul Hogan tourism ads. Olympic Silver Order of Merit, 1986. Established the Australian Tourism Awards. Increased government budget for sports by 6 times in one year alone. Completed the Institute of Sport in Canberra, Parramatta Stadium, Homebush Sports Centre and the WACA in Perth. Only Australian Honouree, US Academy of Sport. Life Member, Australian Institute of Sport. Honorary positions in Surf Life Saving Australia, The Australian Opera, and various University Boards and Industry Councils. Australian of the Year, 1986. Established Sport & Tourism Youth Foundation in 1988. Launched The Tourism Task Force Ltd in 1989, described by the Prime Minister "the most powerful industry group established in Australia".

Les Carlisle – Group Conservation and Development Manager, Conservation Corporation Africa

Established first South Africa Defence Force Game Reserve, Hoedspruit, 1978-1979. Guide, Timbavati Private Game Reserve; Cheetah research, Motswari Game Lodge, 1980. Professional game capture and translocation, Fuancap P.L.; translocated >15000 head of game; established >30 game reserves, 1980-1983. Owner/CEO, Helicapture P.L.; translocated >18,000 head; established 40 new reserves, 1983-1986. Wildlife Management, Karkloof Falls Game Reserve, breeding Cape buffalo, white rhino, roan and sable antelope, 1987-1990. Established CCAfrica Phinda game reserve and lodges, built 120 km fencing, reintroducing 2000 animals including Big Five, 1990-2000. Established Community Development Program: R10 million of classrooms, clinics, pre-primary projects, water projects, community production centres; current funds \$US 1million. Member of 2 World Bank Ecotourism projects. Guest speaker on ecotourism at: WTO sustainable development conferences 1998, 1999, 2001; School of EcoTourism, Pretoria University; Geographical Society, London; Harvard Business School Alumni Conference, Cape Town.

Hon. Virginia Chadwick - Chair, Great Barrier Reef Marine Park Authority

Virginia Chadwick was appointed as Chair of the Great Barrier Reef Marine Park Authority in July 1999. Prior to her appointment she trained as a teacher and worked in Australia and the United Kingdom in both the school and TAFE system. She entered the New South Wales Legislative Council in 1978 and served as Opposition Whip and Shadow Minister of various portfolios. Her Ministerial responsibilities have included Community Services, Education, TAFE, Training and Tourism. She was also the Minister assisting the Premier on Ethnic Affairs, Women and the Aged and chaired the GTE Reform Group. She has also served as President of the Legislative Council.

Tony Charters – Director, Planning and Destination Development, Tourism Queensland.

Former Director, Brisbane Forest Park Authority. Board Director, Wet Tropics Management Authority. Member, Fraser Island Management Committee; Queensland Coastal Protection Advisory Council; Property Council of Australia Tourism Committee. Director of Environmental Management, Kingfisher Bay Resort and Village on Fraser Island, 1991-96. Managing Director of Ecotourism Management Australia, since 1995. Advisory Board, International Ecotourism Society. Former Treasurer and President, Ecotourism Association of Australia. Convenor of 1999, 2000 and 2001 National Conferences of EAA.

Peter Cochrane – Director, National Parks, Australian Commonwealth Government

Director of National Parks since 1999. Responsible for National Parks at Kakadu, Uluru-Kata Tjuta, Booderee and Norfolk, Christmas and Cocos-Keeling Islands; and for Commonwealth marine parks and nature reserves other than the Great Barrier Reef Marine Park. Also responsible for Australian National Botanic Gardens, Australian Biological Resources Study and for the National Reserve System Program of the Natural Heritage Trust, including Indigenous Protected Areas. BSc and Masters in Public Policy, ANU. Fifteen years at ANU in plant physiological ecology. Advisor to two federal Ministers on sustainable development and resource and environmental issues. Former Deputy Director of the national industry association representing oil and gas interests.

Robert Crick – Head of Division, Sport and Tourism, Department of Industry Science and Resources

L.I.B. (Sydney). Barrister, Supreme Courts of NSW and ACT. Member, Company Directors Institute of Australia. Head of Division, Sport and Tourism, DISR since 1997. Key issues: improved business performance in tourism and sport; improved products and services in inbound tourism; *tough on drugs in sport* strategy; Australian role in World Anti-Doping Agency. Formerly a senior executive in the then Department of Primary Industries and Energy, including energy policy for Australian climate change strategy. Member of Australian delegations, including the Kyoto Conference 1997. Director, Energy R&D Corporation. Australian diplomatic service, 1971-1989, including Moscow, Nairobi, Deputy High Commissioner in Ottawa, and Head of Delegation, International Legal Committee, UN General Assembly.

Peta Dowell-Hentall – Manager, Tourism & Community Services, Forestry Tasmania

Senior Manager with Forestry Tasmania as Head of Department for Tourism & Community Services - responsible for statewide tourism strategic policy development and implementation. Board Director, Independent Tourism Operators of Tasmania (ITOT) and Esperance Forest and Heritage Centre. Member of Steering Committees for Tourism Development in Natural Areas Group, Regional Forest Agreement Interpretation Centres, Statewide Attraction Strategy, Statewide Nature Based Tourism Strategy, Southern Tasmanian Tourism Task Force. Member, Institute of Company Directors. Justice of the Peace for Tasmania. Enrolled in Masters of International Tourism, Southern Cross University.

Brian Gilligan - Director-General, NSW National Parks & Wildlife Service Australia

As Director-General, NSW National Parks & Wildlife Service since 1998, has reorganised the Service to focus on engagement with the wider community to achieve conservation goals. Two decades of previous experience on conservation projects in NSW. Asian Wetlands Bureau 1990-91, establishing training programs on wetland conservation and management throughout Asia. NSW Environment Protection Authority, Director Northern Regions, 1992-95 and Executive Director Operations 1996-98. Fellow, Australian Institute of Management, Australian Institute of Company Directors, Environment Institute of Australia.

Daniel Gschwind - Chief Executive, Queensland Tourism Industry Corporation

At the beginning of 2001 Daniel took on the role of CEO for the newly formed Queensland Tourism Industry Corporation, following four years as Queensland Manager of Tourism Council Australia. He represents tourism on numerous government and private sector committees, including as a board member of Rainforest CRC, a Director of the Australian Tourism Research Institute and Deputy Chair of Tourism Training Queensland. He is an Adjunct Professor to the School of Tourism and Leisure Management of University of Queensland. Daniel holds an honours degree in economics from the University of Queensland and has worked as a senior economist with Queensland Treasury. For ten years he ran a yacht charter operation in the Mediterranean and the Caribbean.

Jerry Johnson - Associate Professor, Department of Political Science, Montana State University

Primary teaching responsibilities include social science research methods and natural resource policy. Research includes community tourism impacts and the social implications of land use change in the rural countryside. Johnson has taught and conducted research in the Greater Yellowstone Ecosystem of the U.S., Europe and Turkey. He is presently engaged in a decade long study in northern Idaho monitoring the transition of a resource dependent local economy to one dependent on tourism.

Bruce Leaver – Executive Director, Australian Heritage Commission

Bruce is currently First Assistant Secretary in charge of the Australian and World Heritage Division within Environment Australia. As well as filling the role of Executive Director of the Australian Heritage Commission, Bruce is responsible for the Commonwealth's role in World Heritage Areas, the Aboriginal and Torres Strait Heritage Protection Act and the Historic Shipwrecks Act. Bruce has only recently joined the Commonwealth Government, in August 1999. Prior to that he spent 30 years in heritage management in three states. He was a Regional Director in the NSW National Parks and Wildlife Service, Director of the SA National Parks and Wildlife Service, Director-General of the SA Department of Environment and Planning and more recently, the Commissioner of Planning and Development in Tasmania.

Jan McDonald - Associate Professor of Law, Bond University

Specialising in environmental and tort law. BA/LLB (Hons 1) UQ, 1990. Fulbright Fellow 1991, Caltex National Scholar 1991. LL.M (*summa cum laude*), Lewis & Clark Northwest School of Law (Oregon USA), 1992. Recently completed PhD on international forest protection and timber trade. Associate Dean of Law, Bond University, 1999-2000. Director, Bond University Ltd. Extensive publication in environmental law and associated fields. Consultant to the environmental law section of a national law firm. Member of Australian training team for a series of Environmental Law and Enforcement courses for the Indonesian judiciary in 2000-01, co-sponsored by AusAID, Indonesian Supreme Court and the Indonesian and Australian Centres for Environmental Law.

Ian McPhail - Executive Director, Queensland Parks & Wildlife Service

Dr McPhail has held the position of Executive Director, Queensland Parks and Wildlife Service since April 1999, after 4½ years as Chair of the Great Barrier Reef Marine Park Authority. He has extensive experience in senior roles in state and federal government agencies. Ian is adjunct Professor, Resource Science Faculty, Southern Cross University and adjunct Professor, School of Geographical Science, University of Queensland. Ian holds a Bachelor of Arts, Bachelor of Letters (Litt B) and PhD.

Mark Stone - Chief Executive, Parks Victoria

Chief Executive of Parks Victoria since 1998, overseeing 16% of Victoria and 25 million visits per annum. Executive Director, Parks Flora and Fauna, Department of Natural Resources and Environment, 1996-1998. Director, Victoria National Parks Service 1994-1996. Area Manager Port Phillip, Department of Conservation and Natural Resources 1993-1994. Other previous positions include: Regional Manager, Bairnsdale; Deputy Director Regional Management Division; Manager Program Performance and Monitoring; and Assistant Regional Manager Horsham. Member, Australian Institute of Company Directors. Board Member, Variety Club and Victoria Police Blue Ribbon Foundation.

Russell Watkinson - Executive Director, Wet Tropics Management Authority

Executive Director WTMA since 1998. M.Sc in Landscape Ecology, Design and Maintenance, London University. Associate Fellow, Australian Institute of Management. Graduate Member, Institute of Company Directors. Associate, Australian Institute of Landscape Architects, Parks and Leisure Australia. Member, Environment Institute of Australia. Regional Manager (Coastal Program) Department of Environment, 1996-98 (Far North Region). Deputy Director Victorian Fisheries, Department of Natural Resources and Environment, 1992-1996. Melbourne Board of Works and Victoria Department of Conservation and Natural Resources, 1982-1991.

Alan Watson – Research Scientist, Aldo Leopold Wilderness Research Institute, USDI/USDA

Alan Watson is a Research Scientist with the Aldo Leopold Wilderness Research Institute in Missoula, MT. The Leopold Institute is an interdisciplinary, interagency (Departments of Interior and Agriculture) research unit on campus at the University of Montana with responsibility to lead wilderness science in the U.S. Dr. Watson is the Executive Editor for Science with the International Journal of Wilderness; Chairs the Science Symposium of the World Wilderness Congress this coming November in South Africa; and maintains faculty status at the Arctic Centre of the University of Lapland in Finland where he was a Fulbright Scholar in 1999. Current research emphasis is on a search for compatibility between traditional relationships with nature, ecotourism and biological protection in the arctic and sub-arctic zones of Alaska.

Dave Weaver - School of Tourism & Hotel Management, Griffith University and Professor of Ecotourism, George Mason University, VA.

PhD in geography, University of Western Ontario, 1986. Moved to Australia in 1996 after ten years at the University of Regina, Saskatchewan. Ecotourism research in Dominica, Montserrat, and in the Canadian Prairie Provinces. More recently, he has been focusing on ecotourism market segmentation in the Lamington area of the Gold Coast hinterland. Extensive publication in ecotourism, sustainable tourism, resort cycles, and tourism management, including over 40 book chapters and refereed journal articles, *Ecotourism in the Less Developed World* (CAB International 1998) and *Tourism Management* (with Martin Oppermann, Wiley, 2000). Chief Editor, *Encyclopedia of Ecotourism* (CAB International 2001).

Peter Williams - General Manager, Parks and Wildlife Service Tasmania

General Manager, Parks and Wildlife Service Division, Department of Primary Industries, Water and Environment Tasmania since 2000: mandate to promote increased accessibility of parks and closer links to the State ecotourism industry. 1999-2000, Manager, Food Agriculture and Fisheries. 1987-1999, Division Director Plant Industries, Policy and Support, Land and Water Resources. 1983-1987, four years in corporate management. Masters in Public Administration, 1983. 1980-1983, coordinated agency research applications to external funding bodies. 1970-1980, ten years research on plant diseases at DPI.

Eugenio Yunis - Chief, Environment & Planning, World Tourism Organization

B. Eng. (Chile), M. Devel. Econ. (Genoble). Consultant with Coopers & Lybrand, London, on development projects funded by UNDP, Commonwealth Secretariat, European Union, and World Bank. Resident Consultant to WTO, 1982-83. Chief for Americas and Europe and Joint Chief of Technical Co-operation, WTO, 1984-89. Director-General, National Tourism, Chile, 1990-94. Established Tourism Promotion Corporation of Chile, and regional master planning process. Major study on *Prospects of Tourism in South America* in 1996, published by The Economist, London. Chief, World Tourism Organisation since 1997. Convenor of WTO conferences and seminars in the five continents on Tourism Sustainability, Ecotourism Development and Marketing, Conservation of Natural and Cultural Assets through Tourism, Agenda 21 for the Travel and Tourism industry, and related topics. Represents WTO on UN bodies dealing with sustainable development. In charge of preparations for the International Year of Ecotourism, as designated by the United Nations. Published widely on tourism, environment and culture.

Session 1.1 - Introduction

Conference Goals & Critical Issues

Ralf Buckley
Conference Convenor

1. A warm welcome to all, and sincere thanks to our Sponsors. 2. The time is ripe to improve Australian policies on nature tourism, and the people with the influence and information to do it are here. 3. There are two megatrends. The adventure tourism sector has become a subsidiary of the clothing industry; and the economic significance of tourism is being overtaken by the effects of amenity migration on real estate values. 4. International trends in nature tourism emphasize ecological integrity, restricted minimal-impact public recreation, and increased public funding in parks; and increased use of public forests and private land for conservation, recreation and commercial nature tourism. I propose similar approaches in Australia. Current Australian policy development for tourism in parks risks repeating mistakes made in North America decades ago and now being rectified. 5. The quest for parks to take on private partners risks a political firesale of public conservation assets to private commercial interests. I propose a set of draft policy principles for tourism in protected areas, for debate at this conference. 6. Individual user fees are a politically popular but economically inefficient way to fund public conservation and recreation. If parks adopted commercial models from the airline, insurance, oil or diamond industries, tourism permit fees would be far higher. 7. Australian policy and funding for scientific research on ecological impacts of tourism and recreation in fragile environments lags decades behind international counterparts: individual research is of world class, but except for the Reef and Rainforest CRC's, broad institutional support is lacking. Improved funding through the CRC program is needed to support relevant scientific research for the rest of Australia.

Tourism and Australia's Natural and Cultural Heritage

Bruce Leaver
Executive Director, Australian Heritage Commission
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Amendments to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) will establish a national heritage protection regime, which will for the first time protect places of national heritage significance to the limit of Commonwealth constitutional power. These places will complement our 14 World Heritage properties as the exemplars of our natural, historic and cultural heritage, and will in most cases become tourist drawcards. Replacing the *Australian Heritage Commission Act 1975* (AHC), the new legislation will remove intergovernmental duplication, and lead to new procedures for recognising and protecting places of national significance. This identification process will also identify state and local heritage and will be a useful tool for the development of heritage tourism. The best heritage protection outcome will be fostered by a strong community commitment to heritage conservation. Tourism, where appropriate, is a method of building that commitment, both in the immediate community who recognise the economic value of protecting heritage, and the tourists who visit the heritage. As part of its ongoing work in tourism, the AHC assisted in brokering Regional Solutions funding for the Lake Eyre Basin Coordinating Group to develop *Inland Rivers- Outback Tracks: a heritage tourism strategy for the Lake Eyre Basin* which will identify heritage assets, and detail actions required to build a sustainable heritage tourism industry in the Lake Eyre Basin. A key tool for developing the tourism strategy will be the Australian Heritage Commission/Department of Industry Science and Resources/CRC for Sustainable Tourism document *Successful Tourism at Heritage Places- a guide for tourism operators, heritage managers and communities*. This guide provides a bridge between heritage conservation principles and tourism

Session 1.2 - Parks I

The Cultural Dimension to Nature Based Tourism – the Case and Future of Jointly Managed Parks

Peter Cochrane
Director of National Parks, Australian Commonwealth Government
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Indigenous culture is a defining element of Australian society, and the imagery of this – particularly of Uluru and Kakadu – is recognised the world over. However this popular imagery conveys little of the depth and complexity of Aboriginal culture and its inter-relationship with landscape.

The three Commonwealth national parks managed jointly with indigenous owners, Kakadu, Uluru-Kata Tjuta and Booderee, have provided, perhaps not intentionally, a means for exploring how indigenous culture can play a driving and defining role in park management and the associated tourism industry. Working together in these environments is challenging and a major investment and learning experience for all the participants. This learning and the depth and maturity of the expectations of the participants, continues to evolve from the early conceptual beginnings of joint management in the mid 1970s.

Visitor interaction with, and understanding of, indigenous culture in relatively high volume tourism is problematic at best and, more generally, unsatisfactory for all parties. New approaches are needed and some key principles are suggested. In this context the closure earlier this year of the Uluru climb for the first time for cultural reasons is discussed. Some implications of this are explored. It is argued that while there are important milestones and successes to be proud of in the learning and practice of joint management, each of the stakeholders still has much to learn from and about the other, and the real opportunities and mutual benefits lie ahead.

New Initiatives in Queensland Parks and Forests

Ian McPhail
Executive Director, Queensland Parks & Wildlife Service
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Queensland is developing a new system to manage and assist commercial and recreational tourism in protected areas. 1. The Master Plan for Queensland's Parks System, to be completed in 2001, will provide a 20-year policy framework with strong community involvement. It will include a Commercial Tourism Management Strategy, and Codes of Conduct for commercial operations in parks. 2. The four-year, \$37.7million Better Parks Program, now in its second year of implementation, is providing a major upgrade to visitor infrastructure in the park estate, catalysing the growth of nature-based tourism in Queensland. 3. In November 1999 the Queensland Parks and Wildlife convened a tourism Industry Forum to address industry concerns with impediments to commercial tourism in protected areas. A new framework for planning and managing tourism in protected areas is nearing fruition. Within the overriding principle of park conservation, it addresses issues such as commercial permit tenure length and renewal, access pricing, capacity tradability and accreditation. 4. Following the 2001 State Election, the forestry division, formerly part of the Department of Natural Resources, was integrated into the Queensland Parks and Wildlife Service. For the first time one agency has responsibility for a full spectrum of tenures from World Heritage to State Forest. This provides the ability to offer a wide range of recreational and commercial opportunities across all forms of tenure. The traditional view of park management as a means of conserving protected areas by strictly enforcing "no go" exclusion zones around areas of significance has changed. Increasingly, our protected area estate is seen as an asset with substantial income generating potential rather than a drain on resources. Community participation in park policy is now a legitimate, necessary and desirable method of achieving broad support. In short, park management has come full circle but at all times the crucial point of reference, that of the primacy of the conservation function, has remained at the centre of policy.

Resource and Visitor Management in NSW National Parks

Brian Gilligan
Director General, NSW National Parks & Wildlife Service
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Protected area managers worldwide face the challenge of conserving natural and cultural heritage for future generations, ensuring that conservation values are not degraded by the current generation's use and appreciation of these areas. The protected areas in NSW, from the outback to the mountains and along the coast are major attractions for international, interstate and local visitors.

In NSW the National Parks and Wildlife Service (NPWS) is the agency responsible for the conservation of these areas, which make up approximately 6.7% of the State or almost 5.5 million hectares. The NPWS manages over 500 parks that receive more than 20 million visits per year.

The NPWS is facing a number of immediate issues in managing tourism and visitor use. These include: the need for monitoring and research; demonstrating the benefits of protected areas to rural and regional economies; and encouraging linkages that are geographical, cultural and administrative in nature. The NPWS is responding to these issues in a variety of ways: developing visitor use policies; running environmental education programs; identifying opportunities for partnerships with the private sector; and implementing monitoring of both visitor satisfaction and impacts on heritage values.

Perhaps the real challenge is to look beyond the immediate and look ahead to the next 30 years. What will tourism be like in NSW protected areas in 2030? What demands and expectations will visitors have? What ecological challenges and cultural issues will we need to manage and plan for in relation to tourism?

Managing Visitors in the National Parks of Victoria

Mark Stone
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Is nature-based tourism moving upwards and onwards, or is it stuck in a revolving door? Are we saturating the same old products and destinations and is there opportunity to develop new and complementary ventures?

Many icon destinations are placing the "house full" sign at the front gate. The visitor experience is at risk from over subscription. Many others are grappling with the issue of sustainable use. There are ways in which the above issues can be addressed. Nationally we would gain from greater collaborative efforts in evening out our international and interstate tourism load. There is the opportunity to develop significant new nature based ventures.

A national nature based tourism icon to complement Uluru, Kakadu and the Great Barrier Reef is available to us. The Australian Alps could become our next, and possibly last, great natural feature. Park managers, the tourism industry and the community working together could achieve this outcome.

A series of changes can be investigated and implemented that will enhance the visitor experience. A serious effort towards nationally adopted tour operator accreditation will bring many benefits to the industry and the environment. Collaboration between Government and the private sector regarding off-park infrastructure will result in greater investment and quality of product and services as well as sustainable programs.

By focusing on the inter-relationship between nature based tourism, the environment and people's health there are significant new opportunities for the industry and product/service development. And finally, forward planning for industry reform and in particular, the migration from timber and fishing activities to tourism ventures will provide new and exciting outlooks for tourism and visitor opportunities.

Session 1.3 – Parks II

Nature Tourism in Tasmania

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Tasmania has one of the world's most extensive and spectacularly beautiful park systems. Our national parks and reserves constitute one of the State's most important assets. The parks and conservation reserves contain distinctive combinations of plants and animals – some of which are found nowhere else in the world. Significant Aboriginal and historic heritage sites are located within these reserves. Tasmania has a higher proportion of its land, in excess of 30%, in parks than any other Australian State. Their value to our economy at \$125 million in 1998/99, is significant and therefore Tasmania has a vested interest in properly managing its parks.

To better inform the Tasmanian community and staff within the Parks and Wildlife Service about the future directions, a *Strategic Framework for Visitor Services in Tasmania's Parks and Reserves*, was released in September 2000. The "strategy" identified five key objectives to achieve the improvements sought: **Better planning** – to set direction for future planning for parks and reserves. **Better infrastructure** – to set guidelines for the management and funding of infrastructure and maintenance and to ensure the safety of visitors to parks and reserves. **Better presentation** – to inform and educate visitors about our parks and reserves. **Better business performance** – to guide the sustainable development of commercial visitor activities in parks and reserves and to develop opportunities that will contribute to the growth of the Tasmanian economy. **Better visitor service** – to provide high quality service to all visitors to enhance their enjoyment and appreciation of Tasmania's parks and reserves.

Guided by this strategy, Tasmania is presently in the midst of a three year Nature Based and Environment Tourism Program. This program has been funded from a combination of Federal, State and Local Government sources and private sector investment.

Session 1.4 – Parks III

World Heritage Branding - Is Marketing a Dirty Word?

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The Wet Tropics World Heritage Area (WTWHA) comprises 900,000 hectares of tropical rainforest between Townsville and Cooktown. Adjoining the Great Barrier Reef World Heritage Area, the Wet Tropics receives some 5 million visits per year, generating some \$750 million annually into the regional economy.

The Wet Tropics Management Authority (WTMA) has developed a Nature-based Tourism Strategy that will guide development and management of tourism within the World Heritage Area (WHA). This establishes key principles and policies for the management of tourism, together with preferred settings for some 200 designated visitor sites. One key action from the strategy is to develop a Marketing Action Plan as the basis for building a stronger partnership between WTMA, land managers and the industry. The plan will develop a new branding for the WHA that can be used by industry to provide better recognition of the special attributes of World Heritage and to match commercial marketing to site availability. Correct use of images will ensure that tourists have realistic expectations of their visit, and management messages can be incorporated to encourage appropriate behaviour. Ultimately, compliance with marketing guidelines may be linked to accreditation of tourism operators within the WHA. The overall intent is to work with the industry to use marketing as a promotional, educational and management tool to mutual benefit.

Financial Liability of Park Managers for Visitor Injuries

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Park managers face financial constraints. Limited resources must be divided between conservation activities and the provision and maintenance of visitor facilities. In the provision of such facilities, a tension exists between maintaining the natural experience for which an area has attracted conservation status and protecting visitors from danger. This paper examines the legal framework within which this tension is resolved when a park visitor is killed or injured.

It briefly surveys the bases of liability, focussing on the Common Law principles of negligence, nuisance and breach of statutory duty. It then considers how Australian courts have grappled with the competing policy considerations of protecting the natural and conservation values of a place while protecting visitors to that place. The importance of warning signs, the visitor's own carelessness, and the obviousness of the danger are all considered. The Courts' attitude to liability when the injury arises as a result of some inaction on the part of park managers, rather than careless construction or repair, is also explored.

The paper shows that it is impossible to predict precisely how a claim will be resolved. Much will depend upon the language of the statute from which park managers source their power. Recent case law seems to recognise the dilemma facing park managers in fulfilling their broad-ranging statutory functions. There may be a modest shift away from the "land manager as quasi-insurer" approach of the early 1990s, with several decisions recognising the need for greater personal responsibility on the part of visitors. These trends cannot be relied upon, however, in an uncertain legal environment, where no-win/no-fee arrangements drive speculative litigation. Alternative approaches include the enactment of statutory immunities or the establishment of statutory compensation schemes that replace Common Law avenues.

Session 2.1 - Tourism

Sustainable Tourism: World Trends and Challenges Ahead

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Sustainability has undoubtedly become the central issue in tourism development policies throughout the world. The paper summarizes the role played and type of actions taken, since the Rio Earth Summit, by different stakeholders in tourism, including central and local governments, the tourism industry, the academic community, international agencies with special reference to the World Tourism Organization, and NGOs, with a view to raise the level of sustainability of tourism. A critical assessment of the actual progress made since Rio reveals that the road ahead seems now longer than it was in 1992, due to two main factors: the rapid growth in tourist movements, actual and forecast; and the absence of public regulation and public control of tourism activities associated with liberal economic development policies currently in vogue. Though the level of sustainability awareness and the techniques and technologies have made substantial progress, the level of actual application in tourism is still limited to a few market segments, a few destinations, and a few operators. The tourism community cannot feel satisfied with the progress towards sustainable development until existing sustainable practices in tourism are capable of expanding beyond a few niche markets, while the rest of the tourism industry keeps its priority clearly on profit rather than sustainability.

The author then summarizes the activities in the field of sustainable tourism being carried out by the World Tourism Organization, seen as a catalyst body of numerous efforts by a large number of international and national actors. The main elements of current WTO's work are: in making further progress in the development and use of sustainable tourism indicators; in providing planning and management tools for sustainable development of tourism to local authorities; in providing new, and exchanging successful management tools for handling congestion at mature tourism destinations; in giving higher credibility to certification schemes and ecolabels in tourism; and in the preparatory work for a meaningful International Year of Ecotourism in 2002.

Nature Tourism in Australia

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Projections for growth in Australia's inbound visitors suggest the number of visitors will rise from the current 5 million to just under 10 million in 2010, nearly doubling in the next ten years. Australia has positioned itself in the international tourism market as offering a unique mix of tourism products that include the natural environment, distinctive biodiversity, and a dynamic indigenous culture extending into prehistory. A range of human influences affects the quality of these attractions. Some of these have a direct impact, for example training standards and environmental or cultural codes of practice. Others have an indirect but adverse effect. For example, Australia's distance from key market sources and the long distances between tourism sites in Australia creates a heavy reliance on air travel and ground transport based on fossil fuels, which poses particular challenges in the context of climate change. The long-term viability of our tourism industry rests on implementing sustainable practices across a broad range of areas. Our challenge is to recognise the linkages between diverse issues and to develop a policy and action framework that links economic, environmental and social perspectives together as the basis for future government and industry partnerships.

Partnerships for the Future - Tourism in Queensland's Protected Areas

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Tourism in protected areas is a significant and growing component of Queensland's vibrant tourism industry. The Queensland Tourism in Protected Areas Initiative (TIPA) was the culmination of a growing recognition by tourism operators and management agencies that existing tourism management systems across Queensland's protected area network were presenting impediments to the effective functioning and sustainable growth of the industry.

TIPA is seeing the emergence of a new era for ecotourism and nature-based tourism in Queensland, with a fundamental shift in the relationship between the tourism industry and protected area management agencies. A new cooperative approach is proposed that will see agencies less concerned with regulating for minimum standards and more focused on working in partnership with industry to attain best practice through accreditation schemes, codes of conduct, performance monitoring and collaborative planning. Greater emphasis by industry on best practice would occur in a more stable business environment where access agreements for protected areas would better reflect commercial realities and investment timeframes.

Both the tourism industry and management agencies have a huge stake in, and commitment to, protecting and ensuring the sustainable use of the State's protected areas. The partnership approach between industry and government being proposed through the TIPA initiative is a 21st century approach to sustainable resource management and industry development.

Session 2.2 – Forests

Marketing and Public Lands in the U.S.: the Potential for Focus on Relationships Instead of Transactions

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On National Forest lands in the U.S., as well as some other agency lands, the relationship between the recreating public and recreation experiences is changing. One force of that change has been a tendency toward more business-like approaches to managing public lands in the U.S., including the use of marketing and customer satisfaction approaches. A recent test of marketing principles in application of the recreation fee demonstration program on Forest Service lands required active engagement by scientists, managers and planners, marketing consultants, and key members of the public. Among the major findings from this cooperative effort have been understanding the need for a framework for application of research results to land management issues, and the need to refocus our stewardship activities on the relationship between public lands and the visiting public. While recreation literature in the past has suggested that stewardship agencies can benefit from the use of marketing principles in developing and delivering programs, it is clear from recent marketing literature and this Forest Service marketing effort that the benefit received by the public will vary dependent upon the conceptual marketing approach adopted. The marketing literature increasingly differentiates between marketing which focuses on satisfaction with on-site transactions and that which focuses on relationships of various types (e.g., between buyers and sellers, between sellers and stakeholders, and between sellers). By definition, those responsible for stewardship of public lands represent all stakeholders, now and in the future, creating the need for more thoughtful approaches to understanding how and why stewardship agencies should transition away from transaction marketing approaches and toward a focus on the level of trust and commitment the user and nonuser public maintains for the agency's ability to meet the mandate for the public purpose of public lands. If widely adopted in the U.S. in the future, this approach to market segmentation and positioning analysis will open up many new areas for research and experimentation. An analysis of recent research that describes the effects of the recreation fee demonstration program on the relationship between the public and public lands in the U.S. provides an excellent springboard for collaborative efforts between stewardship agencies, scientists and the public to assure appropriate direction in land management policies to meet the demands for nature-based tourism and local recreation opportunities.

Forest Tourism in Tasmania

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Multiple use equates with diversification. With 52% of State Forests in Tasmania not utilised for wood production, it stands to reason that commercially profitable opportunities within the tourism and recreation sectors be explored and implemented. A series of nine highly marketable world class tourist attractions, strategically placed Statewide, are proposed to not only meet Forestry Tasmania corporate objectives but also to increase the perception of the “must see” status of Tasmania in the minds of national and international visitors to our Island.

A Statewide Tourism Strategy for State forests in Tasmania is proposed which focuses on community, business partnerships and joint ventures. Engaging local communities through participation will allow for “ownership” of attractions and increase our corporate presence in a way that refutes some of the more negative aspects of the forest industry. The Strategy will integrate indigenous and other cultural tourism experiences in Tasmania. Forestry Tasmania will build partnerships with local and regional communities, existing tourist operators, and cultural groups.

Training, accreditation, branding and marketing will guarantee Forestry Tasmania as a world leader in forestry tourism, and form an important part of the success of the strategy. Through its statewide tourism strategy, Forestry Tasmania will provide global recognition of its multiple-use forests, improve and diversify commercial returns from its forest assets, increase regional growth and employment, and enhance community support. The strategy aims to set a conceptual framework within which more detailed planning, market development, feasibility study and business case development proceeds.

International Trends in Nature-based Tourism

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Nature-based tourism, including ecotourism and adventure tourism, is a rapidly expanding activity throughout the world, and in all regions is becoming increasingly identified with the future prospects, both positive and negative, of protected areas. This paper identifies and discusses nature-based trends in major world regions, including Asia, Latin America, Africa and Europe, with the aim of identifying common patterns as well as regional idiosyncrasies. Attention is paid to the character and mix of nature-based tourism, supply and demand dynamics, environmental impacts, interaction with local communities and external environments, and policy/organisational dimensions. Examples are used, as warranted, to illustrate these trends, and their implications for Australia are also considered.

Session 2.3 - Realty

Moving Nearer to Heaven: Growth and Change in the Greater Yellowstone Region, USA

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The recent population growth in the rural counties of the American West promises to surpass the impact of the first western migrations. Much of this growth is associated with tourism and recreation and the desire to live in amenity rich rural areas such as the Greater Yellowstone Ecosystem. Of concern are changes to the social and geographical landscape resulting from rapid settlement of the rural landscape in the region. Scenic vistas are compromised and ecological processes may be impacted as increasing numbers of people settle on productive agricultural lands. This paper characterizes the social and economic changes to the region, and presents research in land use change detection and prediction aimed at engaging the local citizenry in land use decisions. In addition to managing the effects of rapid population growth in the Greater Yellowstone Ecosystem, these models may also be applicable in other amenity-rich tourist destinations.

[Note: Thanks to sociologist Patrick Jobses for the title based on his book "Moving Nearer to Heaven: The Illusions and Disillusions of Migrants to Scenic Rural Places", Prager Publishing, 2000.]

Session 2.4 – Parks IV

Managing Tourism and Recreation in the Great Barrier Reef - Doing it Better

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Significant growth in tourism to the Great Barrier Reef in the past ten years has presented new challenges for managers. Since the inception of the Great Barrier Reef Marine Park Authority in 1975, a range of tourism management tools has been established in conjunction with the Queensland Parks and Wildlife Service. These include regulatory Zoning Plans, Area Plans of Management and site-specific plans implemented through a standardised permit system and monitoring and enforcement strategies. Industry best practice is encouraged and an education and training program is in place.

The development of these management tools has been cumulative, responding to issues that have arisen over the past 25 years. The Authority's Tourism and Recreation Reef Advisory Committee is currently examining the existing management arrangements with the view to developing a new, integrated framework that is purpose-built to deliver an improved, cost-effective and equitable system for management of sustainable tourism and recreation use of the Marine Park.

This paper reviews the evolution of the management of tourism and recreation in the Great Barrier Reef Marine Park and outlines a way forward which is contemporary and builds upon genuine partnerships between the tourism industry and governments.

An Integrated Approach to Eco-Tourism: the Conservation Corporation Africa Model

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The CCAfrica model attempts to address threats to Africa's land and wildlife resources from burgeoning populations and reduced budgets. CCA recognises that much of Africa's wildlife heritage and real estate is influenced or owned by local communities. Maintenance of biodiversity is crucial to our local economies, and local economic development is crucial to the maintenance of our biodiversity.

The CCAfrica model is to link international tourists to these communities, taking a commercial approach to conservation. This is an African problem and we use an African solution, modelled on the 3-legged African cooking pot. If the pot had four legs it would need a level surface to stand on. If it had only two legs, the food would be in the fire. Our approach relies on partnerships between: (1) the private sector; (2) the local community; and (3) the state conservation agency.

We aim to adopt best-value use for any given area, which is not always the current use. We have large tracts of fallow land all over Africa, far from infrastructure and water. We also have communal land neighbouring some of the world's great parks, currently used for subsistence agriculture. We have shown that in marginal rainfall areas of Africa, the best form of land use is conservation. Cattle farming produces R150 per ha annually, gross. Conservation on the same land is currently producing R1500 per ha per annum. Where cattle farming employed 60 people, wildlife conservation and tourism employs 300 on the same area of land. In some areas Africa's current poverty cycle need not continue, if commercial conservation land use is practised.

Philanthropy and Increasing Visitation to NSW National Parks

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The Foundation for National Parks and Wildlife was founded by the Hon Tom Lewis, Premier of NSW in 1969, at the same time as the NSW NPWS. The Directors and Trustees of the Foundation are business leaders with corporate contacts across Australia. The Foundation's initial gifts were used for major national park purchases. Subsequent gifts have funded visitor centres, walking tracks, safe lookouts, stairs, picnic areas, interpretive signs, facilities for the mobility impaired, visitor guides, park brochures, a seasonal ranger program, and conservation of heritage sites and building.

The advent of park use fees has not lessened requests for philanthropic support. Park funds are insufficient to service visitor expectations, let alone improve conservation outcomes. Commercial revenues from visiting parks go largely to private nature tourism operators and regional tourism economies. To increase their return on investment, the sector along with park concession holders and corporate sponsors pressure park managers to improve visitor facilities and provide exclusive arrangements. The prime conservation opportunity from increased visitation lies in educating visitors about the conservation values of parks and biodiversity. FNPW continues to fund endangered species, conservation and habitat restoration, but with a new focus on education. Recent projects include: the Eco Ranger biodiversity education program for secondary students; the Bush-tailed Rock-wallaby education program for primary students; and this Conference, building the capacity of management agencies to have parks benefit from improved community and commercial relationships.

Session 3.1 – Soil, Plants & Water

Impact Reviews: Wheels, Weeds, Wildlife and Water

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Land managers need to know the impacts of different recreational activities in different environments. Different impacts are critical in different ecosystems. Localised, direct, lasting impacts which are cheap and easy to measure, such as trampling, have been studied much more than diffuse, indirect, intermittent impacts which are difficult and expensive to measure, such as waterborne pathogens, noise disturbance to rare fauna, or interference with plant pollination ecology. The latter are more critical for conservation but relevant research is uncommon and underfunded. The quantitative relationships between the type and intensity of recreational activity and the types and intensity of ecosystem response across a full range of global environments are not known for any type of impact, even pedestrian trampling. Managers must typically rely on summaries of studies of similar impacts in similar environments. For different management issues it may be more useful to review impacts by: (a) type of activity or equipment, e.g. off-road vehicles; (b) type of impacts, e.g. weeds and pathogens; or (c) ecosystem components affected, e.g. wildlife or water quality. We have recently reviewed each of these. Different sampling designs are required: (a) to differentiate impacts of tourism from other natural or anthropogenic changes; (b) to track changes in environmental quality or conservation value over time; or (c) to test impact mechanisms, e.g. possible increased predation by feral cats on small native mammals along little-used recreational hiking trails. Without much better knowledge of impacts, and management tools to minimise them, increasing tourism will damage parks in ways that are not predicted or detected until they become irreversible. Such knowledge needs both long-term skilled observation by rangers, and professionally competent scientific studies by appropriately qualified parks staff or others. If parks are to be used for recreation and tourism as well as conservation, parks services will need these funds – either from taxpayers, visitors, or commercial users.

The Impacts of Human Waste Disposal on the Ecosystems of the Back Country of Tasmania

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Walkers and rafters in the backcountry of Tasmania form a substantial segment of the interstate and international tourism market. At present their disposal of faeces and urine follows general minimum impact bushwalking guidelines developed by the Parks and Wildlife Service. These guidelines seem not to be appropriate for disposal in ecosystems that have shallow, nutrient-poor soils, and have not been tested for their effects in any ecosystems. This project uses replicated field experiments to determine the impacts on vegetation and soils of human waste disposal in the ecosystems most used by back country tourists in Tasmania. Particular emphasis will be placed on the effects of root cutting, changes to soil nutrient levels, the breakdown rates of different types of paper and the effects of depth of burial on the probability of excavation of wastes by native animals. The results of these experiments will be used to develop ecosystem-specific guidelines for human waste disposal that will minimise deleterious impacts on conservation values, while minimising inconvenience to users. This paper presents the results of vegetation changes and breakdown rates of toilet paper, tampons and tissues from data gathered during the first year of the project.

People on the Roof: Impacts of Tourism on the Alpine Area of Mt Kosciuszko

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The alpine area around Australia's highest mountain, Mt Kosciuszko is an increasingly popular summer tourism destination. The estimated number of people visiting the area has risen in the last 25 years from 20,000 to 64,000 per year. Tourists in summer principally go on day walks in the area, with the summit of Mt Kosciuszko the major destination. Winter activities consist principally of cross-country skiing, snowboarding and ice-climbing. Tourists are causing a range of impacts on the soils, water quality, flora and fauna through their activities, travel and transport, and accommodation near or in the area. Summer tourism and its impacts is likely to increase with increasing promotion of the area as a summer tourism destination, particularly if predicted climatic changes occur in the region reducing the winter ski season. The types of impacts and effectiveness of current management responses are discussed. Further ecological and social research is required if tourism on the roof of Australia is to remain ecologically sustainable.

Managing Walker Impacts in the Tasmanian Wilderness World Heritage Area

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A Walking Management Strategy has been prepared as a framework to manage the impacts of walkers in the Tasmanian Wilderness World Heritage Area. The main components of the strategy are a system of categorising tracks (based on the zoning of the area and the level of track infrastructure), an education campaign, monitoring impacts on existing tracks and research into the impacts of walkers in various environments.

This case study examines how sustainable carrying capacities might be calculated for walking areas in the Tasmanian wilderness based on ongoing walking track monitoring, walker impact trampling trials and sensitivity mapping. This information can then be used to estimate at what level quotas may need to be set or intensive management applied for sustainable management of areas. Experimental trials have been established to examine the effect of different trampling intensities in typical Tasmanian alpine walking environments as well as the effect of spreading walker traffic over different time periods. These trials have been established at sites of varying altitude, slope, aspect, underlying geology and vegetation communities, to represent typical montane and alpine environments in the Tasmanian Wilderness World Heritage Area. Over a period of 5 years data have been collected on impact and subsequent recovery to provide an environmental framework for management decisions. From these data it is possible to examine the sensitivity of vegetation communities to trampling impacts and to extrapolate recovery data for the different plant lifeforms present. The GIS mapping programs MapInfo Professional and Vertical Mapper provide an efficient means of geographically representing likely impacts at various usage levels over large areas.

Recreational Trampling Impacts on the Understorey Vegetation and Soil of the Jarrah Forest, WA

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In recent times, demand for outdoor recreation and nature based tourism in the jarrah forests of Western Australia has experienced significant growth. Biophysical impacts are considered an inevitable consequence of the human utilization of natural areas for recreation, and require careful management if both conservation and socio-economic objectives are to be satisfied equitably. To improve available recreation impact data, trampling impacts on vegetation and soil of the jarrah forest understorey were studied in relatively undisturbed areas adjacent to recreation sites on the Dwellingup section of the Bibbulmun Track. Parameters studied were vegetation cover and height, leaf litter cover and depth, area of bare ground, and soil compaction measured as soil penetration resistance. Response and recovery to a range of impacts from 0-500 tramples were measured over a 12-month period to assess resistance and resilience factors. Plants were also considered in terms of how morphology and impact response syndrome can influence vegetation response.

Results indicate that the jarrah forest understorey vegetation generally has a low resistance to trampling, displaying a highly curvilinear impact response. Plant morphology has a significant influence upon resistance factors, with the dominant upright woody and herbaceous understorey species possessing low resistance, whereas prostrate/rosette and tufted growth forms displayed moderate or high trampling resistance. The dominant impact response syndrome was resprouting, and these species recovered well at the expense of seeding species, particularly at higher impact intensities. Litter depth was also highly curvilinear, and recovered slowly, although litter cover and soil compaction were more linear and less severe indicators of impact. Soil compaction increased to a maximum at 6 months recovery, before returning to near post-impact levels, although still above pre-impact levels.

Environmental Impact Assessment of Nature-Based Tourists in the Central Coast Region of WA

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The Central Coast Region of Western Australia is a stretch of coast 300km long and 30km wide. It is largely reserved for conservation and currently has little tourism development. Approximately 250000 tourists visit annually, for nature-based tourism activities such as off-road driving, camping, boating, fishing and bushwalking. Ten environmental indicators were scored from 1 to 10 (highest impact) at 71 sites: litter amount, type, and density; disease such as dieback; impact of fire, deliberate or accidental; erosion of tracks and river channels; trampling of vegetation; destruction of dunes; erosion of landforms; tracks caused by four-wheel drive vehicles; and built structures such as squatter shacks. Ten of the 71 sites had low levels of environmental impact (aggregate indicator score 0-20); 17 had low to moderate levels (21-40); 19 had moderate levels (41-60); 20 had moderate to high levels of impact (61-80) and none of the areas had very high levels of impact (61-80). The most heavily impacted sited had eroded dunes, trampled vegetation and numerous off-road tracks. The field data were compiled in a GIS and checked by aerial overflights and by satellite image analysis, to produce maps showing levels of degradation for each environmental indicator for the whole study area. Overall, the region has moderate environmental impacts caused by nature-based tourists. On the coast the main impacts are trampling of dune vegetation, erosion and litter, particularly near campgrounds and squatter shacks. In the hinterland the main impacts are erosion of waterways, weeds, plant diseases and fire.

This method is subjective but consistent, simple, broad-scale and useful in identifying physical impacts at the regional scale for management purposes. It could be applied in different environments with suitable indicators. It could also be used for environmental risk analysis.

Potential Effects of Snow Manipulation on Vegetation in the Australian Alps

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Although direct impacts of tourism on natural systems have been widely documented, the range of secondary impacts is often underestimated or not reported. This study examines potential direct and indirect effects of snow manipulation (slope grooming, snow grooming, snow making, snow harvesting and snow fences) on vegetation in the Australian Alps. In order to maintain economic viability, ski resorts have substantially increased snow manipulation in the last decade, particularly snow making. There has been little research in Australia on resulting environmental impacts, despite the high conservation value of the region with resorts located either in or adjacent to national parks. Based on overseas work, it appears that snow manipulation results in a cascade of changes that can negatively affect native flora. Slope grooming can involve extensive modification of the environment including removal of native vegetation, reformation of the slope topography and resulting changes to hydrological patterns. Snow grooming not only physically damages plants through direct contact, but compacts the snowpack increasing density, and reducing porosity and permeability of snow retarding snowmelt and limiting the ability of the snowpack to slow water runoff and moderate the effects of spring thawing. It also results in a reduction in the thermal insulating properties of the snow, thus soil under groomed snow experiences lower temperatures and increased depth of freezing. Snow compaction directly affects plants by increasing risk of physical damage from freezing, and flow on effects include changes in the composition of plant communities. The range of secondary impacts from snow manipulation is less well known but include changes to soil properties such as depleted nutrients and higher pH. Secondary biological impacts are likely to result in changes in soil biota, herbivory, animal activity, predation, insect activity and seed dispersal. The study highlights the need for research into secondary environmental impacts of tourism to ensure that winter tourism in Australia is not just economically sustainable, but also environmentally sustainable.

Session 3.2 - Wildlife

Wildlife Tourism: Good or Bad for Conservation?

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Tourism based on wild animals in their natural environment is big business internationally and is involving an increasing number of species and habitats. A critical question is therefore whether on balance such tourism is good or bad for wildlife conservation. There is a large body of scientific literature demonstrating a range of negative effects of recreation (including that which is focused on wildlife) on wildlife, although only a small proportion of this allows us to discern effects at the population or community level. Much has also been written about ways in which nature-based tourism can contribute to conservation - principally through channeling of revenue, providing an economic incentive for conservation, education and practical contributions such as provision of labour. However much of the literature is based on anecdotal reports, and it is difficult to quantify the extent to which nature-based tourism is currently associated with conservation benefits. In the case of tourism based on free-ranging Australian wildlife, the lack of systematic research on both negative and positive effects is particularly marked. However the evidence that exists allows us to conclude that: (i) there are some cases where wildlife tourism probably has a negative impact on wildlife; (ii) there are some cases where wildlife tourism has probably led to conservation benefits; (iii) the systems of monitoring and management currently in place are unlikely to be sufficient to ensure that significant detrimental effects do not occur should there be substantial growth in this form of tourism; and (iv) wildlife tourism is far from achieving its full potential with regard to conservation benefits. Priorities for research and management are recommended. Some of these are currently being addressed by research conducted through the Wildlife Tourism Subprogram of the Cooperative Research Centre for Sustainable Tourism.

Nature Tourism's Contribution to Conservation Through Private Reserves

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It is important to evaluate the positive as well as negative ecological impacts of nature tourism. One such impact stems from the economic incentive that nature tourism provides for private sector conservation. In KwaZulu-Natal, South Africa, several landholders have converted land once used for cattle or crops into game ranches. This has led to conservation gains at landscape, ecosystem/community, species/population, and genetic levels. At the landscape level, protected areas represent 3.6%, 2.1%, 4.0%, 22.7%, and 74.9%, respectively, of priority class 1 through 5 landscapes in the province, with class 5 being the lowest priority. Game ranches contribute an additional 0.8%, 1.7%, 2.6%, 4.8%, and 0.0%, respectively. Across all classes, game ranches increase protected area representation from 7.4% to 9.9% of the province, which is a gain of one third. Contributions at other levels will also be presented. Not all private reserves are established because of tourism, so landowners were asked to state what use the land would have been in had tourism not been an option. Of the 27 game ranches interviewed, five would have been retained in their (relatively) natural state, such that gains to conservation from these properties are not due to tourism. However, the remaining 22 would have been in an alternate land use, primarily cattle, such that the gains are due to tourism.

In summary, private reserves can make an important contribution to biodiversity conservation. Though tourism is not the sole reason for the existence of private reserves, it is often the dominant one. Thus, tourism's contribution to biodiversity goes beyond its importance in the establishment and management of public natural areas.

Environmental Impacts of Linear Infrastructure and Service Corridors in the Wet Tropics of Queensland World Heritage Area

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The Wet Tropics World Heritage Area (WTWHA) covers about 9,000 km², and is located between Cooktown and Townsville in northeastern Queensland. Tropical rainforest is the dominant vegetation type and the area is the most biologically diverse in Australia. The WHA contains 1,427 km of roads and highways (608 ha), 324 km of powerline clearings (1,316 ha) and many hundreds of kilometres of walking tracks and boardwalks which together produce a range of biophysical impacts on the natural heritage values of the area. Such impacts include linear barrier effects to ground and tree dwelling fauna, a multitude of physico-chemical and biological edge effects, conduit effects for weeds and pest animals through provision of alien habitat, and road kills. This paper presents the results of a multi-disciplinary project examining the biophysical impacts of linear infrastructure (roads, walking tracks and powerline corridors) in the WTWHA. Research topics included heavy metal contamination along major highways through rainforest areas, impacts of linear barriers on small mammal movements, edge effects of roads and powerline corridors on rainforest microclimate and vegetation structure and floristics, recreation impacts along walking and mountain bike tracks, and penetration of vehicle noise into rainforest along major highways. A central theme in the results is that maintenance of canopy closure over roads significantly reduces linear barrier effects for native rainforest fauna (ground and tree dwelling), and minimises microclimate differences along edges and the penetration of weeds and pests into the forest. In situations where canopy closure cannot be achieved, such as for major highways, engineering solutions including provision of fauna over and under passes is highly recommended.

Measuring the Responses of Antarctic Wildlife to Human Activity

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The number of commercial tourists and Government expeditioners travelling to Antarctica is increasing rapidly. Most of these people interact closely with Antarctic wildlife, travelling to seabird and seal colonies by helicopter, over-snow vehicle or motorised boat, before making close approaches on foot to view and photograph the animals. The accelerated growth in visitor numbers, and the popularity of wildlife viewing, creates the need for well-supported management guidelines to minimise disturbance to Antarctic wildlife and thereby make our presence in Antarctica more sustainable. We are therefore measuring the responses of Antarctic wildlife to human activities associated with commercial tourism and Government operations. The research employs manipulative experiments in which animals are exposed to controlled disturbance stimuli while their immediate behavioural and physiological responses are quantified. In addition, we are monitoring wildlife breeding success in order to detect possible longer-term impacts associated with human/wildlife interactions (Woehler *et al.* 1994). To date, we have determined minimal approach distances for people visiting breeding Adélie penguins, *Pygoscelis adeliae* (Giese 1996, 1998), and operational guidelines for helicopters over-flying creche-age Emperor penguins, *Aptenodytes forsteri* (Giese & Riddle 1999). We have also completed experiments to measure the responses of Adélie penguins and surface-nesting petrels to over-flights by helicopters (results in prep.). Here, we report on current research, which includes a program to quantify the responses of Weddell seals, *Leptonychotes weddelli*, to human and vehicle activity. As part of this study, we are measuring the in-air and under-water noise generated by vehicles in Antarctica to better understand the noise regimes Antarctic wildlife are exposed to. We also introduce research to commence during the 2001-2002 season on the effects of visitation on surface-nesting petrels and sub-Antarctic seabirds.

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The Mareeba Wetlands: Planning for Wildlife Management Through Tourism

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The Mareeba Tropical Savanna and Wetland Reserve covers some 2,000 hectares of savanna around 60 km west of Cairns in Far North Queensland, Australia. It incorporates 12 constructed wetlands covering around 150 hectares of open water and associated swamps. The reserve is managed by a community-based not-for-profit organisation with a local membership of around 600 people, the Mareeba Wetland Foundation Ltd. The Foundation has raised over \$3 million in cash and kind towards the development of the Reserve, to attract and manage native animals displaced by rapid agricultural intensification of the northern Atherton Tablelands, and to provide a site for the reintroduction of locally extinct animals. From the outset, the Reserve has been developed to raise revenue from tourism as the main source of income.

The success of this approach has been demonstrable. As a result of specific habitat creation and management measures, within four years the Reserve has become one of the most important roosts for Brolgas (*Grus rubicundus*) and Sarus Cranes (*Grus antigone*) in North Queensland. It is also the only known breeding site within a protected area for Buff-breasted Button Quails (*Turnix olivii*), one of Australia's rarest birds. The Reserve has a nationally important breeding population of Cotton Pygmy Geese. It has also become a site for the reintroduction, using captive-bred stock of known provenance, of the Gouldian Finch (*Erythrura gouldiae*). This latter initiative has gained national notice through its sponsorship by Australian Geographic. In addition to this success in biodiversity terms, the last four years have been a success in community-based nature conservation and the Foundation's close partnership with the regional tourism sector. This has seen visitor numbers exceed targets, and the establishment of the Reserve as an integral component of the regional tourism market. Through its establishment as a gateway to Australia's Gulf Savannah region, and as part of the Savannah Guides organisation, the recent British Airways 'Tourism for Tomorrow' award has been a vindication of the strategy outlined above and its implementation by the Board of the Foundation.

Managing Environmental Impacts of Antarctic Tourism

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The number of Antarctic seaborne and airborne tourists seeking a nature based experience each austral summer has doubled over the last decade. As tourist numbers increase, so does the potential for associated environmental impact. This paper aims to assess tools and techniques for managing the Antarctic nature based tourism industry. The nature and scope of Antarctic tourism activities is first presented. This is followed by an assessment of the magnitude and intensity of environmental impacts associated with the industry. Problems associated with conducting environmental impact assessments are outlined and difficulties related to implementation discussed. The paper concludes by offering research and policy recommendations that could mitigate the environmental impact of Antarctic tourism including the adoption of cumulative impact assessment, land use planning, emergency response and contingency planning and environmental education.

Case Study: “Chaos to Sustainability”, the Management of Dolphin Tourism in Victoria.

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From its inception in the late eighties, Dolphin-based tourism in Port Phillip Bay has grown to become a multi-million dollar industry where well over ten thousand people annually participate in dolphin-swim programs, and similar numbers venture on sightseeing tours. The Dolphin Research Institute has worked with all stakeholders since the beginning; from chaos, through self-regulation, legislation, regulation, licensing, testing the legislation with the first prosecution, to a major review and Sustainable Dolphin Tourism Program. Over 15,000 field-researcher hours, including 1500 hours on dolphin-swim vessels, and 20,000 ID photographs of dolphin dorsal fins provide a unique data-set to record the history and to lay the foundations for the future sustainable management of the industry. Behavioural and population studies give some indication of the influence of the tours. Studies of compliance with the initial voluntary codes and subsequent legislative solutions give an insight on their relative effectiveness.

Are some or all of the dolphins of Port Phillip Bay habituated and does it matter? How many times per day is it OK to force dolphins to change direction, deep dive, stop feeding or simply change any behaviour? Does ecotourism justify putting a population at risk? Should we ensure through management that there is a net conservation return from ecotourism to the targeted living systems? What ideology directs management; “market forces”, “the precautionary principle” or the need to demonstrate “significant disturbance”? The case study highlights the way that a community conservation organisation can work with government and industry to achieve management outcomes. Victoria has led the way in the management of dolphin-based tourism and the current “Sustainable Dolphin Tourism Program” reflects a commitment to getting it “right”. After ten years we are clearer on the questions that need to be asked and are working together to find the appropriate answers.

The Contribution of Captive Wildlife Tourism to Conservation

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Captive wildlife tourism is a traditional part of our recreational history and culture. For more than 100 years, zoos have been popular places of entertainment, where city dwellers could experience perhaps their first interaction with live wild animals. However, in recent years the role of zoos has been changing. Whilst remaining attractive places of entertainment, they see their survival as dependent on becoming more relevant to modern society: zoos today emphasize their contribution to wildlife conservation. Yet some scepticism about zoos remains, and a critical question is whether on balance such tourism is actually good or bad for wildlife conservation. This paper reviews the role of captive wildlife tourism in wildlife conservation, both positive and negative, and discusses the effectiveness of present policies and actions.

The major contribution of zoos to conservation comes through their education programmes, and their captive breeding, management and display of wildlife. However, in recent years, zoos have also become more involved with *in situ* conservation work. In Australia, this is predominantly through local species recovery programmes for endangered species in cooperation with state government authorities and local communities. However, such activities are expensive, and a major obstacle for zoos has always been to strike a balance between commercial success and the development of professional conservation credibility. Often these objectives have been viewed as being mutually exclusive. Zoos must be constantly on the alert to confront their critics, both through the maintenance of high standards of animal husbandry and welfare, and through the promotion of their contributions to wildlife conservation. Their problem is how to achieve this, while still providing an entertaining and stimulating experience, which can compete effectively with the other leisure activities available to the Australian public.

Session 3.3 - Economics

The Net Economic Value of Timber Production and Recreation in Selected NSW Native Forests

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The National Forest Policy Statement recognised that forests provide a multiplicity of jointly produced goods and services. The resulting Regional Forest Agreements, as a joint Commonwealth and State compliance initiative, attempt to resolve contentious and protracted debate regarding allocation and conservation of forest resources. Proposed outcomes are designed to ensure conservation of forest diversity in concert with industry resource security. Net economic returns of the two main economic activities of forestry and tourism in selected NSW native forests for the 1997-1998 financial year are compared. The research analysis is based on 11 distinct sites of paired, contiguous or proximate native forests, under the management of either NSW State Forests or the National Parks and Wildlife Service. The sites are located in the three RFA regions in NSW and provide a geographically dispersed sample of native forests situated on the eastern seaboard of Australia. The logging revenue and management costs derived from selected native forests were calculated from dis-aggregated raw data supplied by State Forests of NSW. The economic value of recreation at selected national parks was determined by the analysis of on-site survey results using the travel cost method. For six of the 11 research sites, recreation confers higher economic benefits than timber production, inclusive of estimated error statistics. For the remaining sites, the magnitude of estimated variance in net economic values precludes the conclusive determination of site differentials. Of note, there is a negative net value of logging at 12 of 17 state forest sites. The magnitude of the estimated values for native forest recreation established by this research challenges the conventional wisdom of the economic primacy of logging compared to alternate non-wood outputs. Modelling based on the research results indicates that the promotion of recreation in native state forests will maximise both the economic values of individual state forests and in aggregate, the economic benefits accruing to society. In contrast, the failure to incorporate and account for the substantial value of native forest recreation into the decision making process, breaches the codified National Forest Policy Statement of maximising the economic benefits of native forests within an ecologically sustainable framework.

Fees, Permits, Assets & Risks

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During 2000/01 we reviewed current practices of each Australian terrestrial protected area agency in regard to visitor and user fees, tour and activity permits, risk and asset management, and visitor monitoring and education programs. Current practices differ widely between, and in some cases also within, individual State, Territory and Commonwealth protected area agencies. Most require commercial tour operators to be licensed, and most charge license application and annual fees. Most parks also charge visitor entrance and camping fees, whether visitors arrive independently or with commercial tours. Tour operators may receive discounts. There are concessions for children, seniors, community groups and local residents, and season passes as well as daily entrance fees. Most States and Territories charge different camping fees, depending on infrastructure and facilities, and sometimes also on season and demand. Different parks charge fees either per person, per vehicle, per site, or various combinations of these. Proportions of fees retained at individual parks, in individual regions, within the overall parks agency, or within the state government treasury differ between states, as do the budget procedures that may offset any fees collected. Fees are relatively low, unlikely to influence behavior for most tourists. Overall, fees contribute a small but still significant proportion of total parks operating funds. All States and Territories have risk and asset management systems in place, but these differ considerably in sophistication, integration and practical application. Recent changeovers by many State governments from cashflow to accrual accounting systems have introduced a number of practical

problems in park budgeting. The introduction of the Commonwealth Government's GST also forced parks agencies to review fees and revise fee collection mechanisms. The second phase of the project, in 2001/02, addresses on-ground environmental management and monitoring practices, which are typically determined at the level of individual parks or regions. To date, the second phase has reviewed a representative set of 30 park management plans from around the country.

Heritage Icon Value: Contribution of World Heritage Branding to Nature Tourism

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World Heritage listing signifies globally outstanding natural and/or cultural heritage: a "top brand" in marketing terms. Does this branding as heritage icons confer economic value through increased tourism expenditure, and if so, by how much? To test this, we need to compare growth in visitor expenditure at WHA's, pre-and post listing, with unlisted but comparable destinations nearby. WH listing involves a bundle of factors that may include actual differences in natural or cultural attractions as well as the recognition and marketing of those differences, and sometime also increased infrastructure and ease of access. It is more critical to obtain time series of comparable data, than precise point measurements of current expenditure. Using a travel-cost approach, the two principal variables influencing aggregate expenditure are total visitor numbers, and the distribution of visitor travel distances. For historical data, the only surrogate for travel distances is the proportion of international cf domestic visitors. Even for such basic parameters, data for Australian WHA's and control sites are rather sparse, more so than for Europe or North America. We compiled data for 6 Australian WHA's with reasonable control sites: Fraser Island, Kakadu, Uluru, SW Tasmania, Shark Bay and CERRA. Results are as follows. 1. Total visitor numbers at WHA's are commonly up to an order of magnitude higher than at comparable control sites, both pre-and post-listing. 2. For most Australian WHA's, data are inadequate to determine whether there is a significant heritage icon value. 3. For the few Australian WHA's with adequate data to test, WH listing does seem to have a positive effect on measures of tourism expenditure, particularly by increasing the proportion of international visitors quite significantly. 4. It would be useful to address the same question through a stated-preference approach, where total tourist expenditure is determined from new site surveys, and the proportion attributable to WH listing estimated by asking visitors what they would do under various alternative scenarios.

Protected Area Tourism's Contribution to Local Economies

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Public protected areas are primarily funded to contribute to conservation of natural and cultural values. However, such areas also serve as attractions for visitors, and resultant visitor spending contributes to local economies, typically in rural and regional areas. Though there have been some studies of this contribution in Australia, the role of protected areas in rural economies remains poorly understood.

This paper will present a review of previous studies in Australia and overseas as well as results from an ongoing evaluation of national parks in Queensland. In addition, relevant methodological issues will be discussed, including those involved in sampling, survey administration, and allocation of expenditure (e.g., whether all expenditure by park visitors should be attributable to the park).

Results from the first wave of surveys at Girraween and Eungella national parks suggest that the number of person-days per trip spent in the local region would be reduced by approximately half in the absence of these parks. This represents a loss of \$100 and \$133 per trip, respectively, in regional expenditure. These preliminary results will be updated for the conference with results from first wave surveys at Carnarvon and second wave surveys at Eungella.

Session 3.4 M&M Systems

Modelling the Relationship Between Tourist Numbers, Activities, Management Input and Environmental Impacts

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Strategic tourism planning requires knowledge of the relationships between tourist numbers, tourist activities, tourism management and environmental impacts. This knowledge is important when considering the possible impacts of increased numbers of tourists undertaking activities that might impact on the natural environment. Some of these considerations are associated with the notion of Cumulative Environmental Effects and the assessment thereof. Few studies have successfully established relationships or models because there is seldom a simple relationship between tourist numbers and the level of environmental impact. We have developed a range of frameworks and models that begin to deal with some of the complex issues associated with determining these relationships. These models will be used to try to predict when increased numbers of tourists will have significant detrimental impacts on natural resources. These predictions can then be used to drive management that will focus on guidelines designed to avoid, remedy or mitigate damage to key natural assets.

Small Recreational and Tourist Vessels in Inshore Coastal Areas: Types of Impacts

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In most parts of the world, recreational boating activities are confined to sheltered near-shore coastal waters. Increased per capita leisure time and rising disposable incomes kept growth rates of boat registrations at levels of 4 percent annually in most developed countries, including Australia. In many areas, this has led to increasing levels of congestion at popular anchor sites and launch facilities, and to greater chances of producing significant impacts. This paper examines the principal types of impacts associated with small recreational and tourist vessels and highlights current management strategies to mitigate adverse effects on the environment. Where possible, technical information and simplified models, rather than quantitative field data, were used to provide some estimates about pollution loads that can be emitted at crowded mooring sites.

The Effectiveness of Education and Interpretation in Reducing the Impacts of Visitors in National Parks

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Protected area managers use various tools to reduce visitor impacts. Education and interpretation programs are a common component of the toolkits which protected area managers use to limit visitor impacts. Visitors like them – but do they really reduce impacts? We tested an established, best-practice guided interpretation program in Lamington NP, QLD. With assistance from Binna Burra Mountain Lodge, we measured impacts by tourists on 15-guided walks over a 12-month period. Each walk was randomly assigned one of three levels of interpretation: (a) generic environmental education and interpretation but with no specific information on minimal impact practices; (b) as above but with specific additional appeals for minimal-impact behaviour, related to the impacts being measured; and (c) control, with no environmental education or interpretation.

For experimental purposes, the environmental indicators have to be measurable in an inconspicuous way. They also have to be reversible or zeroable, so that no permanent impact occurs, measurements for each walk start from the same baseline and impacts are clearly attributable to the visitors on that particular walk. In addition minimal-impact behaviours required must not be unreasonable. Three indicators met these criteria: noise level and intensity, shortcutting of corners, and picking up litter placed previously on the track. Results to date indicate that best-practice minimal-impact interpretation is effective in reducing some impacts, but less so for others.

Hogwash, Greenwash & Ethical Marketing

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Slick advertising, smooth words and magnificent images of perfect serenity and sublime settings are the eloquent trademark of powerful travel and tourism marketing machines. “Untouched wilderness”, “unspoiled settings”, “virgin rainforest”, “bountiful wild animals” and “crystal clear waters” are the types of words that lure many tourists to distant destinations. Business is dependent on the success of these messages and marketing. It is driven. Its focus is the financial bottom line. However its accountability for its own rhetoric is not always clear or responsible.

Pristine environments? “Hogwash!” is one reaction from tourists faced with an arrival reality of polluted and trashed destinations. Worse perhaps, is “greenwash”. This attack from green activist groups targets organizations who claim to be environmentally friendly but whose real behaviour is as exploiters or polluters. Unfortunately these charges are a commonly correct. So who do you trust? There has got to be a better way. How best can tourism marketers promote destinations ethically? Environmental certification schemes are an important solution. But they too can have their problems. Tick the box or process driven environmental certification schemes commonly fail because they do not account for actual environmental performance. They are a step in the right direction but easily exploited. Their façade of acceptability can easily be manipulated. The front door is pretty, but out the back lies the garbage and pollutants. It is actual environmental improvement outcomes that are needed. This very real issue has been evaluated and responded to. In April 2001, Green Globe 21, with the backing of research by the Cooperative Research Centre for Sustainable Tourism, introduced a new, upgraded Certification approach for the tourism industry, based on a set of environmental performance benchmarks for different tourism sectors in individual countries worldwide. These have not previously been available in the tourism sector. Benchmarking quantifies environmental performance. It describes actual environmental achievements. It forms a basis for marketing professionals to use real and demonstrated environmental credentials for companies and communities. It provides a basis for an ethical approach to marketing.

A Business Approach to Nature Tourism

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The establishment of the Queensland Parks and Wildlife Service (QPWS) as a separate entity early in 1999 led to the Service adopting a more business-like approach to tourism management. The regulated permit system was outdated and did not provide for contemporary commercial reality, particularly in areas of high demand. QPWS developed an 'expressions of interest' process for managing new business opportunities on parks.

The objectives of this process were to provide greater certainty and flexibility for operators, to meet competition policy requirements and to manage nature-based tourism in a way that was not only ecologically sustainable, but also commercially sustainable.

The business development unit of QPWS has now successfully completed a number of expressions of interest processes, with others still in progress. These processes have enabled QPWS to trial new business practices as a prelude to the wider reforms under the Tourism in Protected Areas initiative. The lessons learned to date and the advantages of these processes for operators, the community and the environment will be explained.

Session 4.1 – Planning

Forest Conflict: Forest Tourism in the South East Forests of New South Wales

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The first woodchip exports from SE NSW to Japan in 1970 triggered a 28-year conflict between conservation and wood chipping in the South East Forests. Local communities were polarized. Many people supported continued logging and woodchipping to maintain jobs and pay off debts. But farmers, tourism concerns and conservationists fought to protect the forest water catchments and wildlife.

Woodchipping became an election issue. A pro-wood chipping conservative Government was elected in 1988 and again for a second term. It was then replaced by Labor government elected on a platform that included the conservation of the South East Forests and enhanced tourism. Previously there had been no tourism destinations, infrastructure, road signs, maps, or coordination between organisations.

What happened next was extraordinary. Funding was available to invest in nature tourism. A community group was convened to organise the wise use of the funds. This group consisted of professionals, local government, volunteers and non-government organisations, including many former antagonists. The major of an avowed timber town worked with conservation groups. A plan was established, together with a high quality map, marketing posters and a video, road signs, and new visitor centres in local towns. Cooperative projects promoted wildlife viewing. New tourist destinations were created. These investments have set the scene for the establishment of a long-term nature tourism industry for the South East Forests of NSW.

Researching Visitor Impact Management: The Jamberoo Valley Nature-Based Visitation Study

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Many protected area managers are encountering difficulties balancing the demands of conservation and visitors. An essential component of sound management planning for these areas is objective data on visitor use impacts and needs. Most research in Australian protected areas has dealt with biological issues and little attention has been given to researching visitor management issues. In mid 1998 NSW National Parks & Wildlife Service, the University of Western Sydney and CSIRO commenced discussions designed to develop an agreed set of priorities in the NPWS district of the NSW South Coast.

The agreed overall long-term aim of the research is to develop management approaches that facilitate sustainable nature-based visitation and use of protected areas. A set of research themes were identified that comprehensively described all the issues important to the protected area managers. These themes then provided guidance for the design of specific research projects. A number of sites were chosen, which best represented a set of management issues in relation to levels of use, extent of on-site management, categories of visitor usage and activities and degrees of site hardening. This was done to increase the overall application and usefulness of the outcomes to other settings, and the connection between the different individual projects. Initial projects have been designed to incorporate more than one theme and issues, and to encourage cross-organisational collaboration. This paper discusses the background issues, the approach taken and some of the initial findings.

Planning for Recreation in the Australian Alps

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The Australian Alps contain a diverse landscape characterised by rugged wilderness, wild rivers, and seemingly endless foothills to high alpine peaks. Access varies from the need to be entirely self reliant through to the comforts of highly developed alpine resorts. Fittingly, the Alps attract people seeking a diverse range of recreational experiences. Diversity however often leads to conflict, where visitors seeking different experiences find themselves in the same setting. Management actions may also inadvertently change the character of a setting. A mismatch of activities and settings can result in unacceptable social and environmental impacts and reduced levels of visitor satisfaction. The *Australian Alps Recreation Planning Model* seeks to improve the way managers view and plan for recreation and visitor use. The model is deliberately designed to be simple, yet guide a logical and defensible thought process. This will encourage the development of recreation plans for areas, activities or issues and help clarify and define the role of monitoring in decision-making. The model has been implemented for a management unit in the border area of Kosciuszko and Namadgi National Parks. A planning team was assembled to work through an eight-step process. 1. Inventory: what recreational opportunities are provided and where (using an ROS); and where are the high natural and cultural values? 2. Visitor Profile: Who are the visitors and what do they seek? 3. Social Mismatches: How well do the visitors and settings match and where are the social impacts? 4. Environmental Risk: Where do high recreational impacts overlay high natural and cultural values? 5. Objectives: What is the most desirable outcome for smaller identifiable units and/or activities? 6. Monitoring: Assessing how well objectives are met by identifying indicators. 7. Responding: Dealing with impacts that may threaten the desired outcome. 8. Reporting: Regular review of progress toward meeting the objectives set. The result is a logical, defensible and acceptable plan and ongoing process of review. The outcome is: a solid understanding by managers of recreation settings, visitor needs and impacts; and an exciting and diverse range of recreation opportunities with high levels of visitor satisfaction, while minimising impacts on natural and cultural values.

Tourism Operators and Protected Area Managers: A Union Made in Heaven or a Marriage from Hell?

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While protected area managers (PAMS) do not have a monopoly on natural areas, the reality is that most of Australia's sought after natural heritage sites are held in public ownership. A comprehensive survey undertaken by Aries Tours confirms the fact that natural heritage values, authenticity and World Heritage listing are a significant motivator for consumers. The growth of nature-based tourism and ecotourism over the past fifteen years has created a situation, in icon sites, of considerable competition between operators for the right to take paying visitors on tours. The administrative and regulatory systems developed by PAMS to manage commercial tourism operations have grown in an ad hoc nature and are no longer sufficient to deal with the complexity of high demand sites. This paper examines a case study of Aries Tours' experience in developing evening tours to the Glow Worm cave at Natural Bridge. The site is within the Springbrook National Park – a World Heritage listed protected area. Since 1994, as the pioneering operator of this tour, Aries Tours has experienced many emotions when dealing with the PAM – frustration, elation, fear, hilarity, contempt, and euphoria. However the realisation that the PAM's share these emotions too, paves the way for forging an enduring partnership. In its quest to maintain market leadership Aries Tours proposed a range of innovative approaches to achieve growth, sustainability and protection of the natural resource. Through a partnership approach to the issue the QPWS and Aries Tours entered into an agreement that changes forever the black and white approach to the role of operator and regulator. The challenge for the future is spreading the partnership culture that exists in the senior hierarchy of PAM's to the rangers and field staff on the ground. Experiences gained, lessons learnt and perspectives on future directions will be outlined.

Tourism Potential Modelling for Nature Based Tourism

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Without a comprehensive understanding of the tourist-environment relationship, unregulated visitation from tourists to fragile mountain environments can result in adverse environmental effects. Impacts from direct trampling can be exacerbated through the natural processes of chemical and physical weathering. Previous studies show that susceptibility to human interference increases with elevation.

This paper presents a model of tourism potential for a case study area: the Grampians National Park (GNP) in western Victoria. The park is strategically located between the two highly urbanised capital cities of Adelaide (in South Australia) and Melbourne (in Victoria). Only 260 kilometres from Melbourne and 460 kilometres from Adelaide, the park is heavily visited during long weekends and school holidays as it serves as a recreational catchment for these cities. In addition, the park is part of the much travelled south-western Victoria tourist circuit. The Grampians National Park is one of the largest parks in Victoria and is an important area as it contains the habitats of a number of floral and faunal species found nowhere else in the world, and has a number of significant geomorphological features and Australian Aboriginal rock art. The tourism potential model combines an environmental resiliency model developed using multivariate analysis, with a tourism attractiveness model, within a GIS in an effort to examine the spatial distribution of tourism potential in the GNP region. Currently tourism is heavily concentrated in the northern Grampians, particularly during school holidays. This is resulting in adverse impacts on the environment and is potentially degrading the overall tourism experience in the region. Using the tourism potential model it is anticipated that new opportunities for tourism growth in the region, particularly in the south, can be explored.

Managing Visitor Impacts on Natural Values in Hallasan National Park, Cheju Island, Republic of Korea

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Hallasan National Park is one of 19 National Parks in the Republic of Korea and is located in the centre of Cheju Island, between the Korean peninsula and Japan. It is a very popular area for walkers and the focal point is the 1950m Mt. Halla. Mounting pressure to address serious track management problems created by heavy visitation to the mountain led the Cheju authorities to engage the Australian company Skyrail and through them, CSIRO, to undertake a feasibility study for a cableway in Hallasan.

The study found that the alpine area of Mt. Halla is the most vulnerable area in the National Park to disturbance, and is already in disrepair from past and present visitor pressure. The construction of a cableway alone will not automatically improve the management of Mt. Halla, as any construction activities will create some degree of impact in the National Park, which will be additional to existing track impacts. However, a cableway could be a useful management tool if it is used in conjunction with a comprehensive plan to manage the track system. In the absence of any plan, track condition is expected to deteriorate and so there is an environmental cost in terms of soil erosion and visitor impact on vegetation and plant species even if a cableway is not constructed.

The natural values found within the National Park are detailed in relation to visitor impacts and a track management strategy for the National Park is suggested, which maintains existing natural and aesthetic values while allowing for some track closure and rehabilitation. Initial reactions suggest that as a direct result of the study, the Korean Federal government will supply funds to Hallasan National Park for track management, which has otherwise been managed by the local Cheju authorities without Federal funding.

Visitor Management Model at Port Campbell National Park Using GIS-Agent Simulations of Recreation Behaviour to Evaluate Management Scenarios at Port Campbell National Park

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This paper describes advancements in recreation management using new technology that couples Geographic Information Systems (GIS) with Intelligent Autonomous Agents to simulate recreation behaviour in real world settings. RBSim is a computer program that allows park management to explore the consequences of change to any one or more variables so that the goal of accommodating increasing visitor use is achieved while maintaining the quality of visitor experience. RBSim provides both a qualitative understanding of management scenarios by the use of map graphics from a GIS as well as a quantitative understanding of management consequences by generating user statistics during the simulation. Managers are able to identify points of overcrowding, bottlenecks in circulation systems, and conflicts between different user groups.

RBSim is designed to be easy to use by Parks Victoria staff. This is facilitated through a tight integration with MapInfo GIS that allows a practical solution for quickly building complex simulation models. Simulation techniques provide methods for evaluating details of management decisions as they impact visitors and the environment. No other analysis tool that achieves this level of understanding is currently available. The paper describes RBSim and its application to simulating and evaluating alternative park management scenarios at Port Campbell National Park.

Session 4.2 – Social

Physical Parameters of Landscape Attractiveness in Tourist Destinations

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The concept of landscape attractiveness is primarily an experiential phenomenon that is derived through a visitor's cognitive processes of perceiving objects, their attributes and relationships within time-space behaviour in tourist destination. The biophysical parameters that individually or collectively measure attractiveness of recreational features in landscapes are mainly derived from expert judgement, public preferences and/or quantitative holistic approaches. Many studies have examined landscape attractiveness as result of variations of landform and landcover. These differences make some landscapes more distinct, unique, diverse, complex, scenic, and therefore relatively more attractive, than other landscapes. MacCannell (1976) defined tourist attractions as a phenomenon that developed "*as an empirical relationship between a tourist, a sight and a marker or image*". Landscape attraction, in its widest context, can be a process, an event, or an experience emanated as a result of the interaction among tourist, landscape stimuli and human perceptual responses that evolve into multiple cognitive images which make landscape either attractive or not attractive/repulsive. This paper examines the concept of landscape attractiveness for nature-based tourism as determined by the quantification of biophysical parameters of natural landscape attractiveness. However, the paper does not purport to define landscape attractiveness in absolute terms, since it is highly subjective and individualistic, but is intended to identify and measure various parameters that predict attractiveness. The resultant 'attractiveness appropriate map' can then be examined and modelled for potential tourism attractions in the region. It also provides recreation planners and park managers to develop diverse tourism products and facilitate sustainable tourism strategies for effective and efficient management, control and equitable distribution of visitors in space (over a large area) and time (less concentration) with acceptable minimum impacts rather than developing cumulative impacts in certain areas with low resiliency as experienced in the Grampian National Park.

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Travel Motivations

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I present the key findings from a series of studies exploring the interaction between travel motivations and actual travel behaviour in the Australian domestic tourism market. Six psychographic market segments developed in the early 1980s, were used to measure changes in travel motivations and preferences over a twelve-year period. Changes in travel preference behaviour are highlighted in terms of shifts in market share and resultant motivations for travel. Results reveal that a shift in travel preferences has occurred with consumers demanding more quality, value for money, independently organised, individualised and environmentally orientated travel products and experiences.

To better understand the dynamics underlying travel preferences, I present a model highlighting the multi-dimensional nature of tourist motivation and travel preference behaviour. The model highlights the key motivational triggers that influence holiday choice. Importantly, the model recognises that travel behaviour is in a constant state of change during the lifecycle and across places depending on an individual's dominant motivational state. I conclude the paper by highlighting the implications of these findings for tourism marketing and product development.

Management Applications and Implications of Visitor Satisfaction Data

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Managers of protected areas are under pressure. Their estates are growing but rarely does funding keep pace. The pressure on those estates is increasing as recreational and touristic use of protected areas intensifies and diversifies. At the same time governments are demanding that protected area management agencies demonstrate performance for both the conservation and recreation components of their charter. For the latter it is increasingly important that protected area agencies understand how well they meet the needs of visitors. This paper therefore focuses on visitor satisfaction: how to measure it, and how to use the data for management. It reports surveys in 7 northern NSW national parks from October 1999 to July 2000. The parks reflect a range of usage patterns and visitor types. Over 1,600 visitors provided information on: visitor characteristics, activities engaged in, frequency of national park use, factors affecting the quality of their experiences, visitor satisfaction overall and with specific park features, and visitor preferences with respect to certain types of facilities. The management applications and implications of these data are considerable, but there are a number of unresolved issues. Understanding the features most important to visitors allows managers to prioritise the allocation of resources, particularly in forward planning. Combining importance data with satisfaction for specific features and facilities can identify where improvements are most urgent. Understanding visitor preferences for particular facilities helps set an appropriate level of provision. However, questions remain about how to interpret and utilise these data. What is an appropriate or adequate level of visitor satisfaction? Should the management agency aim only for satisfied visitors on average or a specific threshold of visitor satisfaction? The type of performance target influences the management implications of these data. These data can also be used in conservation. Understanding what visitors regard as important may provide simple cost-effective ways to control the level of visitation to fragile areas.

Exploring Visitor Experiences in the Natural Environment

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Man's place in, and his experience of the natural environment has been the subject of systematic global research for many years, but a number of key questions remain relatively under-explored. In particular, how do visitors construct 'experience' and, how do ensuing experiences vary across biophysical settings? Man's experience of and interaction with the environment has been described in a number of ways. The environment has been described as an external 'physical place'. The 'self', wherein man is totally integrated with the environment. A 'social system', as a place to socialise. An 'emotional territory' to be described by feelings; and a 'setting for action' (Ittelson et al., 1976). Interaction thus may be physical, emotional, cognitive and spiritual (Mausner, 1996). Further, Ittelson et al. (1976) argue that environmental experience is an active process in which individuals utilize their resources to create a situation in which they can carry out activities, obtain a 'locus in the world'; or function with the maximum of satisfaction.

Research on the type, structure and variety of experiences may assist in decisions as follows. 1. Allocation of funding for visitor facilities including: number, type and location of accommodations; culinary facilities such as restaurants, cafes, vending machines, and picnic sites; safety features; type and perceived control of activities in preferred environments; and location of areas for socialization. 2. Visitor education and interpretation initiatives concerning the biophysical nature of parks and their suitability for defined visitor groups. 3. An understanding of visitor preferences regarding 'natural environments' (degree of isolation desired vs. facilities required). The first phase of a multi-phase study will be conducted in April this year.

Ittelson, W. H., et al. 1976. *Experiencing the Environment*. Plenum, New York, 187–206.
Mausner, C. 1996. *J. Enviro. Psychol.* **16**: 335–348.

Interpretation and Education Program – Wilsons Promontory

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Your mission (should you choose to accept it) is to infiltrate the agenda of your interpretation and education programs with a new device. Providing a training program for teachers at Wilsons Promontory National Park has had a significant effect in minimising the impact of school groups. Thinly disguised as a holiday program for teachers and outdoor leaders, *Operation Prom* has been running for seven years and covers numerous aspects including Aboriginal perspectives, a cure for 'Oh no not another walk syndrome', feral peril, minimal impact recreation and much more

This session will enable participants to begin to plan and implement similar programs that suit their particular locations. Expect a hands-on session.

Ecotourism Management in Developing Countries: the Role of Local Institutions

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Ecotourism is an important niche market in the world tourism industry. The key feature of ecotourism is its close connection with the natural environment. The supply of ecotourism resources emanates mainly from developing countries in Asia, Africa and Latin America and the demand often comes from the developed countries. For example, tourism arrivals in Belize from North America increased from 30 000 in 1984 to 90000 in 1990. The increased demand for these resources due to ecotourism can threaten the preservation of the major characteristics that attract tourists. The deep-seated political cleavage between the developing and developed countries concerning the supply and demand for ecotourism has hence raised numerous concerns on ecotourism management.

Most ecotourism resources have public or common good characteristics and these resources are used by indigenous populations for their sustenance. Traditional neoclassical economics fails to recognise the role of traditional institutions in analysing economic problems relating to the use of natural resources. However the new institutional economics approach that emphasises the role of local indigenous institutions in developing countries can play an important role in better managing ecotourism resources. Common property is owned by clearly defined groups and individual members have rights to use the resource based on rules and norms of appropriation. The authority systems and the co-operative ethic can provide the resource users assurance about expected behaviour of other users, enable coordination and minimise free riding. Thus encouraging management styles based upon local rules and collective action can ensure long run conservation of the natural resource as well as a sustained supply of ecotourism resources.

**Rethinking ‘Impacts’ in National Parks and World Heritage Areas:
Transactional Links Between the Psychosocial Impacts of Environment on Visitors
and the Biophysical Impacts of Visitors on Environment**

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This paper presents an environmental psychological and transactional perspective on the impacts of visitation and use in World Heritage Areas and national parks. The perspective draws from three years of research examining the impacts of visitation and use in the Wet Tropics World Heritage Area of North Queensland, increasing applications of environmental psychology in natural resource management and leisure studies, and an interdisciplinary and integrated approach to indicator development and impact assessment. A central consideration of the model and perspective presented is the challenge of managing diverse impacts through a more psychologically informed designing of the visitor experience as well as the setting. The perspective also reframes the notions of presentation, interpretation, education, and behaviour change as an important complex of *psychosocial* ‘impacts’ that are directly and reciprocally related to conventionally understood biophysical impacts. Such impacts are often very positive and, conceptualised as impacts, provide both balance and insight – and transactional sense - to more conventional considerations of visitor impacts and management objectives assessment. The paper concludes with an example of how this approach has been applied to a new interpretation site in the Wet Tropics.

Session 4.4 – Closing

Nature Tourism Opportunities and Challenges

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The natural assets of a destination play an increasingly important part in presenting and marketing a tourism experience. Market trends indicate increasing sophistication and segmentation in consumer demand, with elements of nature tourism featuring prominently. Australia is well placed to build on its strong image as a 'natural', clean and unspoilt destination with unique landscapes, fauna and flora. However, to translate consumer perception and market opportunity into sustainable products requires not only business planning and appropriate management of the natural assets but also effective cooperation between the private business and the public sector.

In a competitive global environment, businesses are challenged to meet visitor expectations in providing quality nature experiences to targeted markets. The effective application of a growing body of scientific research outcomes in tourism business practices and in product development has the potential to play a key role in equipping the industry for these challenges. Meanwhile, management agencies in protected areas are dealing with natural assets of growing intrinsic value. Community expectations in terms of access to these assets and conservation of their biological integrity need to be balanced with the economic sustainability of the community. More than most other industries, tourism has a strong claim on being able to support all three objectives under appropriate conditions.

Tourism cannot be separated from its natural settings. In that context, the success and sustainability of tourism in Australia depends crucially on the cooperation between the commercial tourism sector and the public sector, with the latter generally responsible for the management of natural areas. The global competitive position of Australia's tourism industry will be affected by how successfully this cooperation develops.

Posters

Conflict Resolution in Marine National Park Management in Australia: A Case for Scenario-Based Policy Planning

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The Victorian marine and coastal environment is unique in its natural diversity. Such diversity of flora and fauna, cultural sites and landscapes, along with its easy accessibility to the coast, provide valuable opportunities for ecotourism. Marine fauna such as the little penguin, southern right whale and Australian fur seal are major tourist attractions. In addition to its environmental values, the marine and coastal environment is a valuable economic resource. Victoria's commercial fish and shellfish industries in this environment generate jobs, exports, recreational fishing, boating and sightseeing and other leisure activities. The Victorian Environmental Conservation Council, in its year-2000 report to the Victorian Government, has recommended an establishment of multiple-use marine parks, sanctuary (or highly protected) zones within marine parks, and marine aquaculture areas. Consequently, the Victorian Government has decided to reserve about 5.2% of the State's coastal marine environment in twelve highly protected marine national parks (MNPs).

This decision has created controversy over the marine resources owing to the wide range of stakeholder groups involved. These include commercial and recreational fishermen, Aboriginal communities, coastal communities, conservation groups, the seafood industry, the dive industry, and the reef tour operators. Whilst public comments and consultation processes provide useful information to minimise these conflicts, they often fail to interpret, quantify and incorporate stakeholder values into the decision making process. This paper (a) examines the value conflict in establishing MNPs in Victoria and (b) proposes a scenario-based policy planning framework to resolve the value conflicts involved. The proposed approach takes various value tradeoffs and stakeholder preferences into account in using multicriteria methods. The approach can eliminate the need for governments to interpret community values in the final judgement, providing greater stakeholder involvement and transparency in decision making.

Tourism Genesis – Planning & Managing: Tourism Destination Development

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To plan for and develop environmentally, culturally, and economically sustainable tourism destinations, it is necessary to understand the causal factors that precede certain developmental changes. The established tool for describing destination development has been Butler's (1980) Tourism Area Cycle of Evolution. Although a useful descriptive technique, application of this theory does not provide a detailed understanding of the causal factors of tourism destination development. Carter (2000) has demonstrated that Butler's "smooth" curve is in fact a series of discrete events. The aim of this working paper is to provide further insights into this phenomenon. What is required for planning decisions on sustainable tourism is a Multi-Trajectory Model of Tourism Destination Growth. This model incorporates concepts from a number of theories on the processes of change. The model is appropriate for the study of tourism development, as an open, complex, and dynamic system that develops and operates within a destination. The Multi-Trajectory Model of Tourism Destination Growth incorporates multiple causal factors. If these causal factors can be identified they represent an important planning input. In this context, development for a tourism destination can be directed toward predetermined levels of acceptable change. Additionally, this encourages discussion to occur about acceptable change in the context of a predictive model.

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Carter, T. (2000). *Cultural Change and Tourism: Towards a Prognostic Model*, PhD, Univ. QLD.

Green Guides to Best-Practice Environmental Management by Adventure Tour Operators

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For small-scale adventure tours, particularly those in national parks and other fragile environments, the most critical environmental impacts occur on-site. Commonly, however, they are diffuse and difficult for land managers to control directly. Impacts can be reduced if tour operators adopt minimal-impact technologies and practices, and teach their clients to do likewise. Operators are more likely to follow environmental management guidelines if: (a) competing operators have already adopted these practices; (b) operators and guides are involved in compiling the guidelines; (c) the guidelines are short, simple and straightforward; (d) the guidelines can be adopted without significant additional cost; (e) they are readily available, cheap or free, and can survive rough handling; (f) they are endorsed by relevant industry or recreational associations; (g) they are endorsed by land managers who control tour operator permitting. The *Green Guide* series attempts to meet all these criteria. To date 5 have been produced, tested and released, covering whitewater rafting, small boats, whale watching, SCUBA diving, and 4WD and off-road tours. The last is in highest demand, with over 40,000 copies requested to date. Three more, on heli tours, backcountry bushwalking and camping, and mountain biking are in production. A further 10 are scheduled for production over the next three years, subject to continued funding. In addition, we plan to add different delivery formats and mechanisms, and evaluate the effectiveness of the *Green Guides* in improving environmental performance.

How to Establish Best Practice Environmental Management: Some Lessons from the Australian Tour Boat Industry

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The environmental impacts of tour boats operations are generally difficult to control through existing legislation and regulation alone. Policing relevant provisions at a large scale is usually too costly to justify the expense in relation to the likely magnitude of impact. As an alternative to legislation and regulations imposed by government and management authorities, industry self-regulation has been promoted to minimise tour boat related impacts. Our aims were (a) to assess the current level of use of formal, non-legislative environmental management guidelines by Australian tour boat operators, thereby allowing the identification of best practice in environmental management measures; (b) to establish what factors influence the level of compliance of tour boat operators to formal, non-legislative environmental management guidelines; and (c) to gain an insight into the effect of the Australian tour boat industry on the environment. The method used was (a) survey questionnaires administered during face-to-face personal interviews; and (b) individual *in-situ* boat audits carried out incognito. However, after almost 120 days in the field, nearly 1000 phone calls and investing considerable funds to become available to the operators, only 47 interviews and 32 individual boat audits have been completed to date.

The principal difficulty is that many tour boat operators were very unwilling to take part in the surveys, for reasons such as: survey fatigue; being too busy during the survey period; or a belief that they shouldn't be answering the questionnaire, because they did not see themselves as part of the tourism industry. Many who did take part were very defensive. Hence it seems unlikely that industry self-regulation as currently implemented and promoted will be effective for the tour-boat industry as a whole. Inefficient or poor investment is seen as one of the major impediments to the successful implementation and adoption of industry self-regulation measures and hence the adoption of best practice measures for environmental management.

Indicators of Environmental Change From Tourism: A Review of the Literature with a Special Emphasis on New Zealand

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Projections of large increases in tourist numbers traditionally associated with New Zealand's natural assets means it is necessary to identify the possible implications of this growth on New Zealand's wildlife, vegetation and physical environment and the resulting management requirements. A literature review aimed to identify these implications by compiling a diverse range of literature on the biophysical impacts of tourism and recreation and subsequently establishing a comprehensive list of possible tourist activities, impacts and indicators of environmental change. The criteria for including papers in the bibliography were that they:

1. Discussed the interaction(s) between tourist or recreational activities and the surrounding wildlife, vegetation and/or physical environment.
2. Were applicable to a New Zealand context (including sub-Antarctic islands).

Selected papers were then reviewed and information was extracted on six key areas: main focus of the research; natural asset, and its classification; tourism activity; environmental impacts and indicators for these. In all 478 articles have so far been reviewed. Analysis has then been undertaken within the areas of wildlife, vegetation and the abiotic or physical environment. An interactive, i.e., searchable and updateable, website for this bibliography has been developed and will be demonstrated.

The Effects of Human Activity on two Penguin Species on Macquarie Island: Experimental Methodology

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As the number of people visiting sub-Antarctic and Antarctic environments increase, so do incidences of human-wildlife interaction. Commercial tourism represents the vast majority of visitors, with a major purpose of such visits being the unique opportunities to encounter Antarctic wildlife (www.iaato.org/). In addition, Treaty Nations will continue to conduct and support scientific research in the Antarctic, further increasing incidences of direct and indirect human-wildlife interaction.

Seabirds in the Antarctic and sub-Antarctic represent some of the more susceptible species for human-wildlife interaction. The open nature of nesting, combined with the restriction of breeding sites to primarily ice-free areas along coastline, makes Antarctic and sub-Antarctic seabirds highly accessible for commercial tourism and vulnerable to Treaty Nations operations. Thus, appropriate guidelines, based on rigorous scientific protocol, are required to attain sustainable human-seabird interactions.

This presentation is part of a larger research project investigating the effects of human activity on seabirds in Antarctic and sub-Antarctic environments. This is achieved by empirically measuring the physiological and behavioural responses of seabirds to approaches by pedestrians (both singles and groups) and to the activity of zodiac boats and helicopters, in addition to monitoring of population dynamics. Here, we will present the experimental methodology for 2001 / 2002 field season on Macquarie Island, including:

- Measuring the reproductive performance, behaviour and heart rate of Royal Penguins *Eudyptes schlegeli* exposed to pedestrian visitation.
- Measuring the effects of zodiac operation on King Penguins *Aptenodytes patagonicus*.

Choosing Well When Providing Infrastructure: A Case Study of Walking Tracks in the Kosciuszko Alpine Area

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The popularity of nature tourism destinations can threaten the environment the attraction is based on. To limit detrimental effects of increasing visitor numbers, management tools such as the hardening of facilities are commonly used. However, decisions about the type of hardening are often based on the short-term financial cost of construction. To develop sustainable tourism facilities in natural areas, a long-term view needs to be adopted with increased weight placed on environmental and social issues. The importance of such an approach is demonstrated using the walking track network of the Kosciuszko alpine area as a case study.

Increasing visitor numbers to the alpine area of Kosciuszko National Park, New South Wales, are placing growing pressure on its walking tracks. Much of the established walking track network evolved from old bridle tracks and service roads. Over the years, many different materials and techniques have been used in efforts to harden or maintain degraded tracks or to establish new tracks to deal with the increasing demands. This has resulted in an array of track types ranging from informal tracks and hardened ground tracks to raised walkways. Comparisons of some environmental, social and financial costs and benefits for different tracks highlight that a holistic long-term planning approach is required. The introduction of foreign materials associated with hardening efforts brings with it the risk of creating long-term liabilities such as weed problems. These need to be managed, creating additional financial costs that should be considered in the initial decision making process. The holistic approach would lead to a more beneficial choice of track than current practices. The development of a walking track strategy that incorporates these aspects and provides a scientific base for management decisions is recommended.

Training Environmentally Responsible Nature Tourism Operators

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The B.A. (Nature Tourism) at La Trobe University's Bendigo campus seeks to develop: an understanding of natural and cultural environments; naturalist skills and practices; outdoor living and travel skills; outdoor leadership; paradigms of environmental thought; environmental interpretation skills; and tourism enterprise management. The expansion of the nature tourism industry has led to increased visitation of natural areas and associated human environmental impacts. However, effective management of nature tourism operations and locations can result in responsible environmental behaviour through training of graduates in appropriate philosophy and practice. Students spend over 75 days in the field, studying environmental science, outdoor leadership and environmental interpretation.

Our philosophy is that all Australian bush environments, natural or cultural, have intrinsic values that can form the focus of a nature tourism operation, and nature tourist operations can occur on public and private land. Major anthropogenic changes to natural settings may have taken place in the past, but minimal environmental impact is the aim today: through self-sufficiency, thoughtful route and camp selection, and minimal waste generation. The Bendigo campus allows field study both in areas of high tourist appeal (e.g.. alpine environments), and in subtle landscapes seen by many as uninspiring (e.g.. box and ironbark country).

A Stakeholder Approach to Nature Tourism: the Case of the Twelve Apostles

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Public participation and accountability are of crucial importance in planning processes. Major tourism projects, some of which have been extremely controversial, have been undertaken with negligible public participation, indeed by 'fast-tracking' statutory planning. Port Hinchinbrook development, south of Cairns, is an example in which not even World Heritage Listing ensured an environmental impact assessment was undertaken by any of the three levels of government. A 1999 Senate Inquiry concluded that it had been 'a tragedy of errors'.

The Twelve Apostles case study demonstrates the value of stakeholder management in evaluating the planning and decision-making processes regarding a visitor complex at the Twelve Apostles. Lip service is routinely paid to 'community involvement', but insufficiently guaranteed by statutory planning process. Deregulation, corporatisation and other features of neoliberalism, (rigorously applied in Victoria) have had major implications for the role of government and for representation of the public interest. There are lessons to be drawn from the Twelve Apostles regarding nature tourism and the environment, not least regarding the political economy of national park planning and management.

Munro, A. 2001. *Stakeholder Participation and Ecologically Sustainable Tourism: The Case of The Twelve Apostles* MBA Thesis, Victoria University

The Legacy of Old Tracks: A Case Study from the Kosciuszko Alpine Zone

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Summer visitors to the Kosciuszko alpine area have increased three-fold since 1978 with 64,000 people now visiting the area during the warmer months. The most popular tourist activities are walking and sightseeing. The bulk of visitations are centred on Australia's highest peak, Mt Kosciuszko, which is easily accessible via walking tracks from Charlotte Pass and Thredbo. Management of these tracks has become an important issue, involving the maintenance or replacement of heavily used tracks as well as the recovery of closed tracks. Impacts such as trampling and erosion on alpine ecosystems can be severe and long lasting because of the short growing season, the system's fragile nature and the harsh environmental conditions. This study examined the old walking track from Crackenback Station at Thredbo to Rawsons Pass below the Kosciuszko summit, as a case study to investigate the extent to which the vegetation on the former track had recovered since its closure and revegetation in the late 1980s. Twenty-two quadrats spread over the length of the track in tall alpine herbfield vegetation were sampled. Each 'track' quadrat was paired with a plot four metres away in 'natural' vegetation. The quadrats were assessed for vegetation cover, species composition and species abundance. Soil samples were collected from ten randomly selected sites for both 'treatments'. The study found that there was a significant difference in vegetation cover between the natural and track. Nutrient levels on the track were lower than in the natural plots, which could be due to continuing erosion on many of the track sites. Vegetation composition also differed and weeds were more abundant on the old track. These results highlight the long-term nature of impacts in the alpine zone. Despite initial revegetation efforts and more than a decade of rest, the vegetation has not recovered to levels comparable to the vegetation outside the immediate impact zone.

Nature Tourism in the Temperate Eucalypt Forests of Western Australia

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Forest-based tourism and recreational use of forested areas are growing steadily, producing ecological and social impacts that present significant management challenges.

This study aims to: determine the biophysical impacts of a range of recreation and tourist activities; develop and apply methods for assessing impacts using both multiple-parameter and rapid-assessment techniques; assess the nature and significance of social impacts, by surveying user perceptions of problems in relation to actual and proposed management actions; monitor impacts at selected sites and determine management outcomes across a range of land tenures; assess the effectiveness of a range of management tools in dealing with these impacts; and develop best practice management techniques for the Australian context, with wide application in both wet and dry eucalypt forest ecosystems.

Five eucalypt sites have been selected in southwest Western Australia, covering a range of land tenures, management regimes, activities, use levels and visitor types. Fieldwork is currently under way.

Motivators for the Adoption of Environmental Management in the Queensland Tourism Industry: A Preliminary Study

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Understanding the factors that motivate the adoption of sustainable practice in the tourism industry, is key to the development of effective policy mechanisms. This paper presents a model based on a literature review and the findings of a recent study exploring the factors that motivate the adoption of environmental practices. The model concentrates on factors other than legislation, to reflect the current economic rationalist approach to policy that favours self-regulation to strict command and control legislation. Governments have been hesitant to introduce policy and regulation that constrains industry growth and competition. Strong regulation also requires considerable funding to police and prosecute offences and can stifle innovation. That is not to say that regulation is poorly suited to achieve sustainable outcomes, merely that policy decision makers must apply the most appropriate mechanisms to achieve the desired outcomes.

The study revealed that while economic concerns were significant, perception and knowledge of an environmental practice were critical determinants to adoption of a practice within an operation. Other issues that manifested within the study were the roles of key personnel, staff participation and a strong corporate culture. The findings of this study have provided the groundwork for my doctoral thesis and will have implications for policy development and the tourism industry. Policy mechanisms that are flexible and recognise the varied nature of tourism operations, both in size and structure, will encourage increased adoption of environmental practice that will have positive environmental outcomes. Improved environmental outcomes will provide the foundation for a sustainable tourism industry.