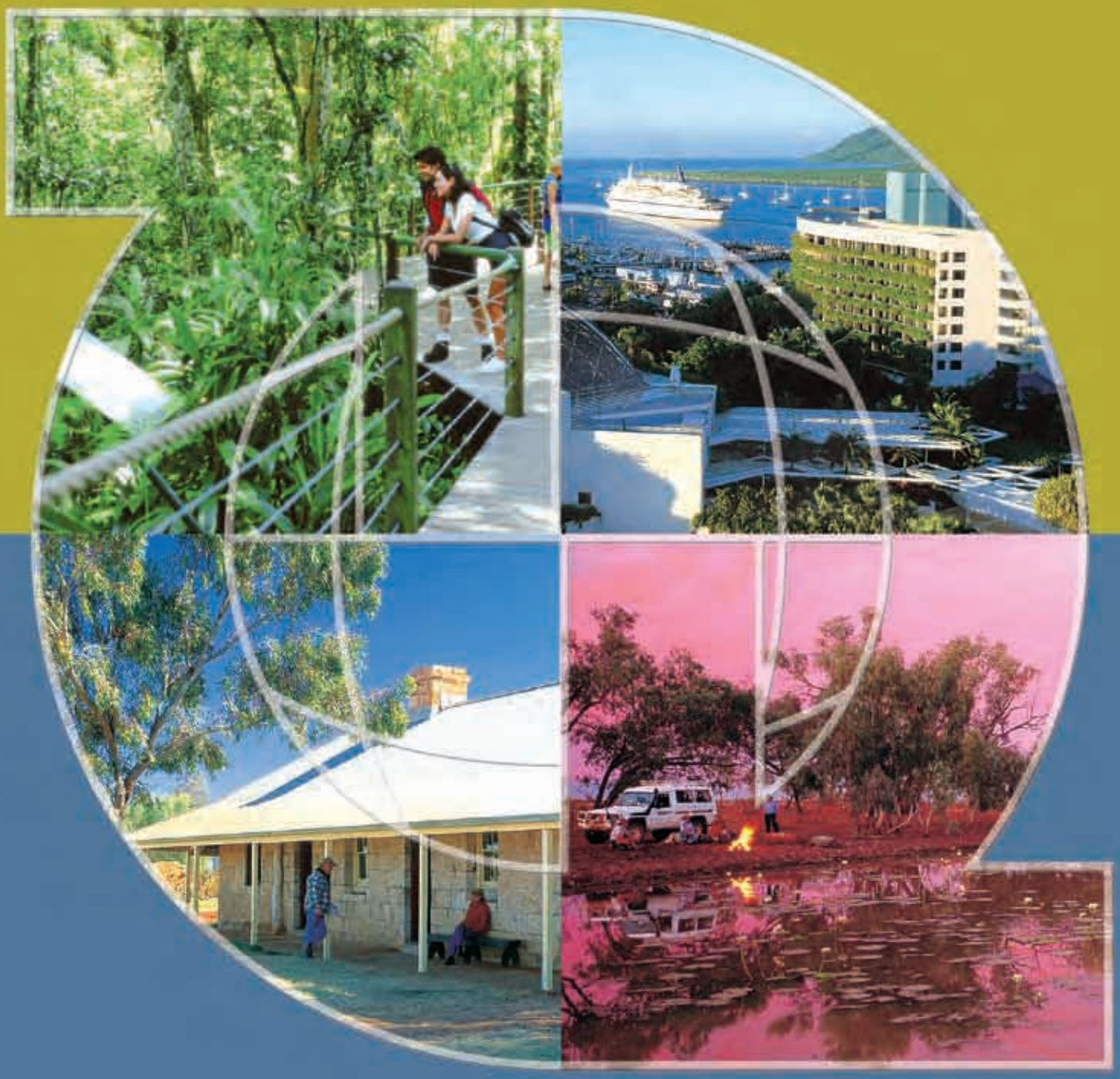
TOURISM AND THE KIMBERLEY COASTAL WATERWAYS

Environmental and cultural aspects of expedition cruising



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ABSTRACT

The Kimberley coast in Australia's far northwest, meanders from Broome, Western Australia, for over 3000 kilometres to the Northern Territory border. The largely undeveloped area has gained increasing popularity and publicity in recent years for its spectacular scenery, Aboriginal rock art and native wildlife which forms the platform for a strong and uniquely Australian tourism experience. Much of the coastal region has Aboriginal Reserve status and is administered by the Aboriginal Land Trust and native title claims have been lodged on most of the coastal areas. Commercial expedition cruises offer tours along the Kimberley coast and access land-based attractions, providing a unique experience of its natural environment and cultural features.

In recent years, the expedition cruise industry has grown rapidly, benefiting from, and at the same time contributing to, the area's tourism popularity. This growth in the tourism industry occurred in the absence of an overall planning framework and was largely unregulated, resulting in increasing concerns from government agencies, tourism operators, other stakeholders and the indigenous custodians about the lack of appropriate tourism and environmental management processes in the area. Tourism management issues included increasing operator/visitor volumes; lack of economic benefit to the local community; and declining quality of the tourism experience as well as environmental and cultural management issues such as impact to spirituality and site deterioration.

This report presents the findings of a one year project funded by the Sustainable Tourism Cooperative Research Centre to present an overview of activities and environmental and cultural impacts of the Kimberley cruise industry. A rapid assessment of biophysical impacts of tourism activities at onshore sites showed that current environmental impacts were at very low levels, though there is considerable potential for impacts, particularly to isolated island environments.

The issue of cultural and spiritual impacts at sites of Aboriginal significance, on the other hand, coupled with issues of on-site visitor management requires urgent attention. Acknowledgement of and respect for Traditional Ownership is vitally important for sustainable development along the Kimberley coast. There are currently considerable variations in operational practices that should be addressed through the development and implementation of good practice guidelines and operational standards.

There is an urgent need for an improved governance framework and the development of appropriate statutory and non-statutory mechanisms to facilitate sustainability in coastal planning and development of the Kimberley coastal area. The appointment of an adequately equipped body to oversee and drive the regional planning and development process, including the development of a coastal planning strategy, could provide the capacity for such a process. The expedition cruise tourism industry is strongly dependent on the pristine natural qualities of the area. Development by industries such as the petroleum and minerals sector has the potential to have a significant negative effect on the tourism product and visitor experience.

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SUMMARY

Background

- The Kimberley coast is an area of outstanding natural and cultural features that is rapidly gaining increasing recognition and popularity as a tourism destination. Tourism is one of several industries utilising the natural resources of the area. Other industries include the minerals and petroleum industry and the pearling, fishing and aquaculture industries.
- The focus of this report is on the expedition cruise industry, which currently forms the largest component of the area's coastal tourism activities.
- The tourism industry should not be seen as an isolated entity and its management should be approached in the context of overall industry activities and development in the area.
- There are two broad groups of coastal tourism in the Kimberley: (1) commercial tourism operators, made up largely of visitors on expedition cruise vessels and visitors to specific sites arriving by fly-in fly-out operations; and (2) free independent travellers, made up largely of people visiting on private yachts touring the region, and recreational visitors from nearby mining, pearling or other operations.
- At current, there is no overall management plan for tourism along the Kimberley coast.

Objectives of Study

The overall objective of this report is to provide an overview of current tourism activities with focus on the expedition cruise industry and to identify some of the key issues to the management of tourism in the area. This information is aimed at providing the foundation towards the development of a tourism plan for the area which should be part of a strategic planning framework for future development affecting the Kimberley coast. Specifically, the objectives of this study are to:

- identify the environmental and cultural hotspots in the region
- identify the characteristics of current expedition cruise ship operations;
- assess environmental/cultural management practices
- recommend sustainable environmental and cultural management alternatives by offering alternative approaches to managing the sustainability of environmental and cultural assets along the Kimberley coast.

Methodology

Initial data was gathered through:

- preliminary desk research
- participation at stakeholder workshops
- meetings with stakeholders and Traditional Owner representatives.

Field based data collection included:

- visits to country with Traditional Owners;
- observational research of expedition cruise vessel visitors while visiting on-shore sites
- rapid biophysical monitoring of on-shore sites.

Key Findings

There are a number of constraints that must be considered in relation to tourism and other development along the Kimberley coast. These include:

- the need to protect the rich indigenous heritage and respect the Aboriginal custodianship, which may limit tourism activities in some areas
- the need to protect high conservation areas, which may limit tourism in some areas
- the need to prevent the introduction and spread of exotic flora and fauna
- the fragility of some of the ecosystems, particularly reefs, islands and important habitats;
- the lack of supporting infrastructure
- the remote nature and vast size of the area
- the strong seasonal and tidal variations
- minimal governance
- mineral and petroleum interests in the area.

This study found that:

- The expedition cruise industry is growing both in the number of vessels as well as in the size of some vessels, with expected expansion of operations at both ends of the market over the coming years.
- The frequency of visits and the number of visitors to sites along the Kimberley coast is increasing, particularly in the area between Cape Leveque and Mitchell River.
- There is insufficient data available to measure the number or activities of free independent travellers, including recreational users.
- Current environmental impacts of expedition cruise activities appear to be small, but potential for impact is high, particularly on islands and reefs.
- Current cultural and spiritual impacts on sites are of significant concern to Traditional Owners.
- No permits for access to any ALT reserves have been granted to commercial tour operators. Thus land-based excursions at many sites currently accessed by tour operators constitute trespass.
- There is a lack of data on environmental and cultural aspects and visitor activities. Data on commercial tour operations and vessel numbers are being collected by some government agencies but are currently not, or only partially, available to other interested parties, including land and water management agencies, despite the high need for data underpinning the decision making and planning process for sustainable development in the area.
- There is a strong need for a holistic approach to data collection and monitoring of activities and impacts.
- The tourism product of the Kimberley coast is based on the enjoyment of pristine, uncrowded environments in a luxury setting. Unrestricted access to some areas and lack of appropriate operational standards in relation to environmental, cultural and visitor management aspects may adversely affect the quality of the tourism experience and may contribute to deterioration of the sites accessed.
- All operations should require consideration of their potential effects on natural and cultural heritage values and specifications on mechanisms proposed to minimise and manage potential effects.
- There is considerable variation in current operational practices relating to environmental, cultural and visitor management aspects. This could negatively affect the tourism product as well as the area's environmental and cultural health, visitor safety and experiences and should be addressed through the development of good practice guidelines and operational standards.
- There is a strong need for an integrated approach to strategic tourism planning, involving the Traditional Owners and key stakeholder groups.
- Because of the expedition cruise industry's strong focus on the area's natural, cultural and scenic amenities and its mobile nature, coastal development, such as for example coastal gas and oil industry developments, may potentially have a very strong negative effect on the tourism product and experience. It further has the potential to increase independent free tourism activities such as by recreational activities from industry workers and by providing improved accessibility to the area.

Future Actions

Recommended ways forward and actions include:

- appointment of a body to oversee and drive the regional planning and development process and ensuring adequate representation of and consultation with the indigenous custodians and other stakeholders
- development of a coastal planning strategy to prevent or minimise development that would negatively affect the pristine character of the coastline and has the potential to be detrimental to existing industries
- agreement between government agencies to share information, streamline processes, legislative needs and changes, enforcement measures and funding as they relate to the management of the Kimberley coast area
- development of a tourism management plan to ensure environmentally and socially sustainable tourism which is consistent with the natural and cultural values of the Kimberley coast and which provides appropriate managed access to the area for members of the local community
- development and implementation of standards and good practice guidelines regarding tourism activities along the Kimberley coast, coupled with enforceable control measures and rewards for good practice
- review and strengthen data collection on independent and commercial tourism activities and implement a strategy for regular dissemination of findings
- development of zoning system based on cultural and environmental values and sensitivities
- collection of baseline data and implementation of monitoring programs to assess and evaluate current and potential impacts and changes
- minimal development of facilities in accordance with the image of pristine nature and remoteness of the area and with respect to Traditional Owner views
- exploration of a user pays system to help recover the cost of managing the area.

More specifically, Chapter 7 summarises some of the key issues identified during this project and suggests strategies to address them in view of moving towards a more sustainable expedition cruise industry along the Kimberley coast.

ACRONYMS

4WD		Four-Wheel Drive
AAPA		Aboriginal Affairs Planning Authority Act
AFZ		Australian Fishing Zone
ALT		Aboriginal Land Trust
ANW		Australia's North West
ATIA		Appropriate Tourism Impact Assessment
ATSIS		Aboriginal and Torres Strait Island Services
CALM		Department of Conservation and Land Management
CB		Citizens Band
CBA		Cost Benefit Analysis
CEO		Chief Executive Officer
CLIA		Cruise Line Industry Association
CO		Carbon Monoxide
CPVAC		Commercial Passenger Vessel Advisory
DEC		Department of Environment and Conservation
DEH		Department of Environment and Heritage
DGA		Dangerous Goods Act
DGSR		Dangerous Goods Safety Regulations
DIA		Department of Indigenous Affairs
DOCEP		Department of Consumer and Employment Protection
DOE		Department of Environment
DoF		Department of Fisheries
DPI		Department for Planning and Infrastructure
DVD		Digital Video Disk
EA		Ecotourism Australia
ECU		Edith Cowan University
EDGA		Explosives and Dangerous Goods Act
EIA		Environmental Impact Assessment
EMC		Environmental Management Change
EOI		Expression of Interest
EPA		Environmental Protection Act
EPBC		Environmental Protection and Biodiversity Conservation Act
EPERB		Electronic Positioning Emergency Radio Beacons
EPUD		Environmental Protection (Unauthorised Discharges) Regulations
FRM		Fish Resources Management Act
GBRMP		Great Barrier Reef Marine Park
GBRMPA		Great Barrier Reef Marine Park Authority
GIS		Geographic Information Systems
GPS		Global Positioning System
HC		Hydrocarbons
IAATO		International Association of Antarctica Tour Operators
ICCL		International Council of Cruise Lines
IMO		International Maritime Organisation
IPA		Indigenous Protected Area
IPLU		Indigenous Partnership Liaison Unit

IRB		Inflatable Rescue Boat
ISM		International Safety Management
ISO		International Standards Organisation
KLC		Kimberley Land Council
KMTA		Kimberley Marine Tourism Association
LAC		Limits of Acceptable Change
MARPOL		International Convention for the Prevention of Pollution from Ships
MOU		Memorandum of Understanding
MPA		Marine Protected Areas
MPSAC		Melaleuca-Port Davey Advisory Committee
MSD		Marine Sanitation Device
NEAP		National Ecotourism Accreditation Program
NO		Nitrogen Oxides
NRM		Natural Resource Management
NTRB		Native Title Representative Bodies
OSH		Occupational Safety ad Health Act
PBC		Prescribed Body Corporate
QPWS		Queensland Parks and Wildlife Service
ROS		Recreational Opportunity Spectrum
SIA		Social Impact Assessment
SO2		Sulphur Dioxide
SSC		Saltwater Steering Committee
STCRC		Sustainable Tourism Cooperative Research Centre
TCWA		Tourism Council of Western Australia
TOMM		Tourism Optimisation Management Model
TWA		Tourism Western Australia
TWWHA		Tasmanian Wilderness World Heritage Area
UCL		Unallocated Crown Land
UNCLOS		United Nations Convention on the Law of the Sea
US		United States
USL		Uniform Shipping Laws Code
VAMP		Visitor Activity Management Process
VC		Visitor Centre
VERP		Visitor Experience Resource Protection
VIM		Visitor Impact Management
WA		Western Australia
WWF		World Wildlife Fund

Chapter 1

INTRODUCTION

Context

In 2004–2005, the tourism industry accounted for $32.6 billion of Australia's gross domestic product and was a significant contributor to Western Australia's economy (Australian Bureau of Statistics 2006a). Western Australia received six million overnight domestic visitors and 635,200 international visitors in 2005, with the domestic visitor expenditure alone amounting to $2.8 billion (Tourism WA 2006a). The State's large size, low population density, unique natural features and extensive coastline provides the features for an attractive and uniquely Australian holiday experience for both domestic and international visitors and has seen the development of niche markets based on natural and cultural features, including the development and growth of the Kimberley expedition cruise market.

Cruise ship tourism has experienced strong international growth in recent years and is diversifying its product considerably, creating and developing new market niches (Dowling 2006; Ellis & Kriwoken 2006; Wild & Dearing 2000). One of the niche segments of cruise ship tourism is the expedition cruise market which is characterised by its nature based and/or adventure focus and the exploration of remote locations, often with an interpretive and educational component (Ellis & Kriwoken 2006). Nature based tourism in itself has also been a fast growing segment of the tourism industry accounting for 62.3% of international and 16.5% of domestic overnight tourism in 2004 (Newsome, Moore & Dowling 2002; Tourism Australia 2005b). The combination of a luxury cruise experience with a focus on 'discovering' remote areas and accessing natural and cultural attractions appears to have strong market appeal.

The Kimberley region in Australia's far northwest is largely undeveloped because of its remoteness from other economic and population centres of Australia and is often referred to as Australia's 'last frontier'. Much of the region has the status of Aboriginal Reserve and is administered by the Aboriginal Land Trust, which offers it considerable protective status. The Kimberley coast meanders from Broome, Western Australia, for over 3000 kilometres to the Northern Territory border and its rugged terrain makes it mostly inaccessible by land. Commercial cruises along the Kimberley coast allow access to this area, providing a unique experience of the area's natural environment and cultural features.

In recent years, the area has gained increasing publicity and popularity largely because of its spectacular scenery, Aboriginal rock art and wildlife which form the ideal platform for a strong and uniquely Australian tourism experience. As the area's tourism popularity increased and demand grew, an increasing number of tourism operations, with focus on accessing the remote attractions of the Kimberley coast, became established. The growth of this industry, which operates largely in State waters, has resulted in a largely unregulated, unplanned and unmanaged tourism industry. At the same time, interest from the minerals and petroleum industry in accessing potentially highly lucrative extractable resources of the Kimberley region and off-shore areas has grown.

This project grew out of increasing concerns from government agencies, tourism operators, other stakeholders and the indigenous custodians about the perceived lack of appropriate tourism and environmental management processes in the area with key tourism management issues including increasing operator/visitor volumes; perceived lack of economic benefit to the local community; and a perceived decline in the quality of the tourism experience as well as environmental and cultural management issues such as potential or actual site deterioration. Specifically, government agencies raised concerns about risk management and environmental safety of coastal tourism activities and a lack of clarity as to their responsibilities and powers; Traditional Owners raised concerns about the lack of information about coastal tourism activities and about environmental and cultural impacts at specific sites; and the tour operators raised concerns about environmental impacts, economic benefits and the rapidly growing number of operators and visitors potentially changing the nature of the visitor experience.

In January 2006, Tourism Western Australia (TWA) coordinated the establishment of two projects to fill in some of the apparent knowledge gaps of Kimberley Coastal Tourism in order to address those problems. The first project focussed on the visitor experience and economic contribution of tourism activities along the Kimberley coast to the area. This project was funded by Tourism Research Australia. The second project, which forms the basis of this report, focussed on the environmental and

cultural impacts of the Kimberley cruise industry and was funded by the Sustainable Tourism Cooperative Research Centre (STCRC) with the support of the Department of Environment and Conservation (DEC).

Project Description

This one year project conducted in 2006 presents an inventory of expedition cruise ship tourism activities in the Kimberley coastal area, identifying key travel routes, attractions visited, activities and management practices. In broad, this project aims to: (1) identify, map and characterise the environmental and cultural hotspots in the region as well as the key stakeholders involved; (2) identify current environmental and cultural management practices and determine potential impacts of activities on the environmental and cultural assets; and (3) provide alternative approaches to managing for sustainability of the environmental and cultural assets along the Kimberley coast.

The project outcomes will guide and direct stakeholders, including government agencies and the private industry, in taking an environmentally and culturally sustainable and coordinated approach to managing tourism activities along the Kimberley coast.

Research Objectives

The objectives of this study were to:

Identify the environmental and cultural hotspots in the region by:

- developing an inventory and location map of environmental and cultural attractions and values in the Kimberley coastal area; and
- developing a catalogue of land ownership and responsibility and key stakeholders for affected areas.

Identify the characteristics of current expedition cruise ship operations in terms of:

- the size and structure of the industry; and
- their activities.

Assess environmental/cultural management practices by:

- producing a baseline of current environmental and cultural management practices of expedition cruise ship operators in the Kimberley coastal area;
- a brief overview of existing environmental research and monitoring in the area;
- an inventory of current and potential impacts of expedition cruise ship tourism activities on the environmental and cultural assets in the Kimberley coastal area; and
- an inventory of current and potential impacts of other industry and user group activities on the environmental and cultural assets in the Kimberley coastal area.

Recommend sustainable environmental and cultural management alternatives by offering alternative approaches to managing the sustainability of environmental and cultural assets along the Kimberley Coast.

Chapter 2

RESEARCH METHODOLOGY

The research included both desk and field based components, with the field component comprising of: (1) discussions with cruise tourism operators and other stakeholders; (2) visitor observations; (3) biophysical monitoring; and (4) site visits with Traditional Owners. The following section briefly describes the research methodology applied. It further discusses protocols for engaging with Aboriginal Australians, and the process undertaken during this research, as the researchers quickly learnt of the importance of appropriate consultation and processes and the local Aboriginal communities' rich history of negative experiences and inappropriate dealings with government, industry and researchers.

This research was conducted with the approval of the Human Research Ethics Committees at both Edith Cowan and Murdoch Universities. Information obtained through this research and the use of images in this document is done with the consent of the relevant individuals or organisations, or is available from publicly available sources and used with due acknowledgement.

Preliminary Desk Research

Initial data for the project was gathered through reviewing Kimberley cruise vessel websites and contacting regional visitors' centres and cruise operators. Further information was sourced from a review of documents relating to the region, including Tourism WA visitor data and any relevant reports and books for the region. Information was also gathered through discussion with relevant stakeholders and Traditional Owners from the Kimberley region and a review of the tourism and recreational ecology literature. Subsequently, a draft inventory table was constructed detailing current cruise operators in the region, sites visited and activities undertaken.

Initial Workshops and Meetings

Stakeholder meetings were held in Broome as part of a workshop between industry and government agencies organised by the Tourism Council of Western Australia (TCWA). Subsequent meetings were held with cruise operators and representatives from indigenous bodies, government agencies and local interest groups to gain their views on the industry at current, particularly in relation to issues of industry growth, perceived challenges, environmental impacts at on-shore sites and potential management strategies. At this time, arrangements were made for researchers to board vessels and join cruises for the 2006 season so that observations of passengers and environmental monitoring could occur.

Traditional Owner input and approval for the project was sought through representation of the project to the Saltwater Country Steering Committee during a stakeholder workshop in Derby and through discussions with representatives of the Kimberley Land Council and the Department of Indigenous Affairs. At this time, arrangements were made for field trips to a selection of priority locations suggested by the Saltwater Country Steering Committee. Selected sites encompassed two of the four native title claim groups in the key area of interest.

Observational Research of Expedition Cruise Vessel Visitors While Visiting On-Shore Sites

Observations of visitor behaviour and management of visitors while visiting on-shore sites were made on five different vessels during six trips ranging from seven to 14 days in duration. Researchers were accommodated in-kind or at cost by the operators and thus participation on trips was dependent on availability, as full fee paying passengers were given priority. Participating operations spanned the full size range of vessels currently operating along the Kimberley coast.

Visits to Country with Traditional Owners

While the main ports of access for expedition cruises along the Kimberley coast are Broome and Wyndham, access to on-shore sites is largely limited to areas north of Cape Leveque, including country by the four native title claim groups Mayala, Dambimangari, Uunguu and Dambimangari (cf. Chapter 2 and Figure 9).

Meetings with Traditional Owners were held at the Mowanjum Aboriginal Community with representatives of the Dambimangari native title claim group and were linked with field trips to Dambimangari country at Raft Point and Langgi. Similarly, meetings were held at the Kalumburu Aboriginal Community with representatives of the Uunguu native title claim group and linked with field trips to Uunguu country on Bigge and Jar Islands.

During these meetings and site visits, the Traditional Owners discussed their connection to country, their cultural responsibilities, the types and importance of sites and preferences for the management of sites. Photographs of visitor activities at different types of sites were used to prompt discussions on the effects of visitation and tourism activities on the sites and their views on the appropriateness and management of these activities.

Environmental Monitoring of On-shore Sites Visited by Expedition Cruise Vessels

Expedition cruise vessels along the Kimberley coast frequently access on-shore sites as part of their trips to visit natural, cultural or historical attractions such as freshwater rock pools, Aboriginal rock art or evidence of European explorers and settlements. Apart from the Prince Regent Nature Reserve and Mitchell Falls National Park which fall under the control of the Department of Environment and Conservation (DEC), none of these sites are formally managed and virtually no site infrastructure is in place, resulting in the formation of informal trails in an ad hoc manner where frequent repeat visitation occurs. This study provides a baseline assessment of informal trails at key sites visited repeatedly by expedition cruise operations.

Walk trail monitoring

Trampling by visitors accessing a site inevitably results in vegetation removal and soil compaction and can quickly result in a visible trail. Unlike many other areas around the world with visitor pressures year-round, the Kimberley coastal on-shore sites receive little or no visitation from December to February due to the torrential rains and the threat of cyclones during the wet season. This provides the natural environment with a window for regeneration and vegetation growth, and possible recovery from visitor impacts.

Monitoring the walk trails and obtaining information of trail condition and trend can be used to evaluate the acceptability of current conditions and to define what conditions are considered problems and to monitor conditions such as deterioration, erosion and multiple trails (Hammitt & Cole 1998). Cole (1990a) states that initial trail construction accounts for the majority of environmental change that takes place on a trail and its margins as vegetation is removed or trampled and the trail soil is compacted at relatively low use levels.

In this study, trails were monitored, where present, at on-shore sites visited on five different vessels during six trips on expedition cruise vessels. The itineraries of these vessels therefore dictated which sites were available for monitoring. After review of available itineraries of all cruise vessels, the sites monitored represent the most frequently visited areas. The sample based trail monitoring method was used to measure indicators such as trail width and tread incision. In addition, the general trail condition, major habitat, presence of exposed roots, multiple treads, presence of human sourced rubbish (including type of rubbish and quantity), visual evidence of erosion (trail condition) and the presence of any maintenance features such as markers, stone cairns, steps or signs were described. Interval point distances for each trail were chosen arbitrarily by the recorder and then standardised for each subsequent measurement. This method quantifies average trail condition, is simple and when repeated as a monitoring program, does not have to be commenced at the same start point as long as the original interval distances are replicated (Leung & Marion 1998). Further advantages of the sampling based method are that it is systematic, simple to use and provides a detailed assessment at each interval point. It further provides a characterisation of mean trail conditions. Weaknesses of the method are that it assumes uniform traffic and data collection is not random. For the purpose of this study, however, this method was deemed most appropriate as monitoring was conducted during on-shore visits while on the cruise vessels. Therefore, a simple, time efficient method was required that could be easily replicated.

Measurement of distance

Distance of trails was measured by pacing. Due to the rocky and often steep nature of the terrain and time constraints it was feasible to use pacing over other techniques such as a measuring wheel. Pacing was cross-checked with a global positioning system (GPS). Natural walking gait was calibrated by pacing along an accurately measured base line of 50 metres. Pacing by each researcher was repeated several times and the recorded number of paces was then averaged to determine the number of pacers per 100 metres for the recorder.

Width, depth and slope measurements of access trails

Rapid survey samples (sample based surveys) were used to measure trail width and bare ground, maximum depth and slope. The average width and depth measurements provide a useful characterisation of trail condition and problems. Further, width and depth measurements permit an assessment of change over time. Linear sections of trail slope were documented by recording the start and finish point of each segment of slope with a clinometer. Slope was measured as a slope with a gradient greater than six degrees influences the velocity and subsequent erosion of trail soil with increasingly steep trail slopes initiating a greater water velocity (Randall 2004).

Visual assessment of trails

Data was collected to assess trail condition and numerous measurements including observations of erosion, rubbish, root exposure, number of parallel and lead of trails and vandalism were taken. The number of measurements taken and the appropriate distances between sample points depended upon the length of the trail.

Protocol for Engaging with Aboriginal Western Australians

Over the last twenty years, a number of documents have been published on protocols for engaging with Aboriginal Australians (cf. Australian Heritage Commission 2002; Berndt 1981; Central Coast Aboriginal Interagency Network n.d; Department of the Environment and Heritage 2004; Forrest & Sherwood 1988; The Australian Institute of Aboriginal and Torres Islander Studies 2000; West Australian Government 2005). Yet to this day, one of the key issues for tourism development, activities or projects along the Kimberley coast (and many other parts of Australia) appears to be inappropriate, or lack of, consultation and engagement with the custodians of the area. ‘We just want to be asked’ and ‘we should be treated with respect’ are statements that reverberate again and again in existing reports and during community engagement for this project (cf. Kimberley Land Council 2000, 2004b, d). The building of a relationship based on respect is the foundation to effective community engagement. Given our experiences during this project, we believe that extensive community engagement is fundamental to any successful development and planning in the Kimberley. Appendix B provides a summary of some general tips as well as project engagement and visiting protocols relevant to engaging with Aboriginal Australians from the Kimberley coast. These protocols are by no means comprehensive or new, but can be a starting point to building a respectful and productive exchange and working relationship. More specifically, the following section briefly discusses the processes involved in the Kimberley Coastal Tourism project as an example of Traditional Owner engagement in this region.

About 80% of the Kimberley coast is in Aboriginal Land Trust (ALT). Thus consultation with the Traditional Owners for the Kimberley region should be fundamental to any tourism, planning or development related projects relating to the Kimberley coast. Given the diversity of the Aboriginal communities in the Kimberley region, however, it is important to ensure that consultation occurs through the appropriate representatives of the relevant communities. The Native Title Act outlines native title claim groups as the legal framework for engagement with Indigenous people with regard to land and thus the first engagement should occur through the appropriate native title claim group (T. Vigilante, pers. comm. 2007). Where a claim is not determined, the Kimberley Land Council (KLC) can act as the contact point. Several key bodies have assisted this project in this process. Initial discussions with the KLC and the Department of Indigenous Affairs (DIA) provided a platform for introduction of the project, its relevance to the area and the area to be assessed. The KLC clearly highlighted the requirement of speaking to the relevant communities directly (thus not assuming the KLC to represent the communities’ views) and provided the necessary contacts and introductions to representatives of the four Native Title Groups relevant to the project area. Initial representation of this project to the Traditional Owners occurred through presentation to the Saltwater Steering Committee (SSC). The SSC was established in November 2004 and is made up of three community representatives

from the Mayala, Dambimangari, Uunguu and Balanggarra North Kimberley native title claim groups, which covers the land areas accessed by expedition cruise ships as assessed during this project (Kimberley Land Council 2006). The SSC represents the interests of, and provides a forum for the concerns of, Traditional Owners for the broad North Kimberley coastal and marine region (Kimberley Land Council 2006).

The project field sites were determined through discussions with the SSC and agreed upon by all groups, even though field visits with Traditional Owners could only be made to sites in two of the four Native Title areas due to limitations with cost, time and logistics. Traditional Owners engaged for the field trips and consultation were paid for their time in accordance with a fee schedule by the KLC and ALT transit permits (as legally required) were gained for the sites visited. Further, it was important to gain Traditional Owner permission to photograph country and sites.

Appropriate community consultation does not stop once the data has been collected but requires the findings to be disseminated and fed back to the communities in an appropriate format. From discussions with the KLC and community representatives, this format may differ considerably from just providing a copy of the final report as commonly provided to government agencies, but may involve face-to-face meetings and visual means such as photographs of country and key issues/activities and verbal presentation and discussion of the findings. Thus projects should factor in the cost of such dissemination of the research findings in their research budget.

Chapter 3

KIMBERLEY COASTAL REGION SITE DESCRIPTION

The Kimberley region of northern Western Australia consists of an area of approximately 424,517 km^2, which is the equivalent to one-sixth of Western Australia and almost twice the size of the State of Victoria (Geoscience Australia 2006; Kimberley Development Commission 2006). It is bounded by the Indian Ocean to the west, the Timor Sea to the north, the Great Sandy and Tanami Deserts to the south and the Northern Territory border to the east (Figure 1) (Hercock 1999). The meandering Kimberley coastline extends for about 3000 km between Broome (Latitude 17º 57' S; Longitude 122º 14' E) in the south and the Northern Territory Border in the North and is sheltered by the Buccaneer and Bonaparte Archipelagos comprising of thousands of islands (Figure 1).

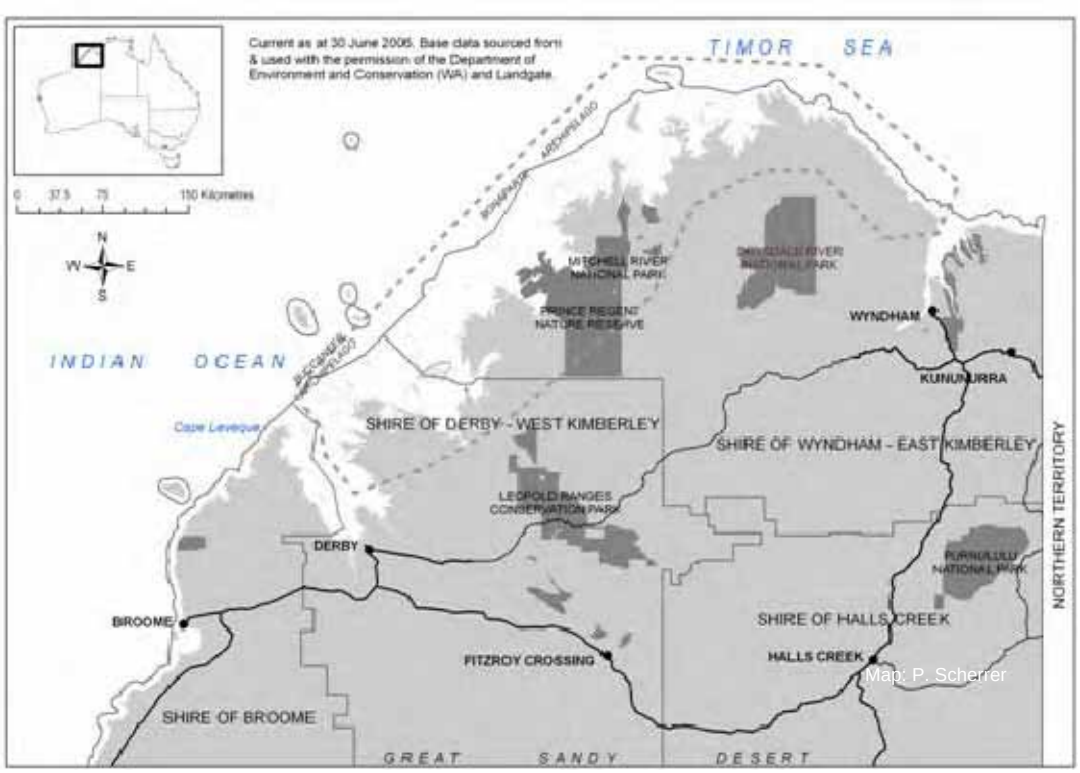


Figure 1: Overview of the Kimberley region and the coastal project area (dotted line)

The Kimberley region comprises four administrative areas: the Shire of Broome, the Shire of Derby (West Kimberley), the Shire of Wyndham (East Kimberley), all of which have coastal access, and the inland Shire of Halls Creek (Figure 1). As indicated by the dotted line in Figure 1 above, this project focused on the coastal areas between Cape Leveque and Wyndham where the expedition cruise vessel activities are concentrated. Thus the project area is administratively part of the Shires of Derby and Wyndham and includes the four native title claim group areas of Mayala, Dambimangari, Uunguu and Balanggarra (cf. Land Tenure Section and Figure 9).

Climate

Climatically, the Kimberley is located in the wet-dry tropics and experiences dramatic seasonal differences (Bureau of Meteorology 2006). Mean daily maximum temperatures are 30ºC or higher throughout the year (Bureau of Meteorology 2006). Almost all rainfall occurs during the short summer wet season from December through to March, while the dry season months of June to September are virtually rainless (Bureau of Meteorology 2006). During May to October, winds are predominantly easterly with little cloud, while between November to April the prevailing winds in coastal districts are westerly accompanied by increased humidity and thunderstorms (O'Connor 1999). Rainfall on the coast is produced by the seasonal monsoonal and cyclonic winds and varies with latitude and coastline variation (Brooke 1997). Average rainfall during the wet season ranges from 1500 millimetres to less than 350 millimetres (Holmes 2004). Most tourism activities along the Kimberley coast occur during the dry season and cyclone free months of May to September, providing an opportunity for vegetation recovery at sites accessed by visitors during the off-season (November to February). Even within the dry season when tourism activities peak, the tourist experience can change considerably, particularly with respect to the natural environment and fishing. Seasonal differences provide opportunities for product diversification, with some operators providing a different focus in their marketing of earlier trips (e.g. when waterfalls are in full flow and vegetation is lush green) compared to trips later in the season, by highlighting particular features. Further, some cruise operations are now advertising short trips during the wet season (cf. Chapter 4).

Landscape

The ancient Kimberley landscape comprises of plains overlain with undulating sand ridges and rocky sandstone ranges (Nel 1996). Large areas of the region remain intact. Variation of vegetation types can be found across the Kimberley due to the difference in soil types and rainfall across the region (Holmes 2004). Although tropical savannah is the dominant vegetation type within the Kimberley region, both open and dense eucalypt woodlands exist, along with remnant rainforest and mangrove vegetation (Hercock 1999; Kay 2004). Supporting the unique biodiversity of the region are numerous mound springs and swamp rainforests (Holmes 2004).

The coastal environment of the Kimberley is influenced by warm, south-equatorial currents. Two broad coastal zones can be described for the Kimberley, which has a coastline in excess of 3,000 kilometres (Holmes 2004). The coast from Broome to Cape Leveque comprises low sandy beaches with occasional low cliffs, while the coast from Cape Leveque to the Northern Territory border, which is the main area of expedition cruise ship activities and the thus the focus for this project, consists of a more rugged coastline which is devoid of exposure to heavy oceanic swells (Figure 2)(Prince 1986). Sandstone and dolerite escarpments characterise these coastal areas, which contain protected inlets comprising turbid waters and muddy banks (Holmes 2004). Some 3000 islands lay offshore in the sunken coastline adding to the complex shoreline structure and diversity of the coast, which is of great scientific interest (Hill 2004).

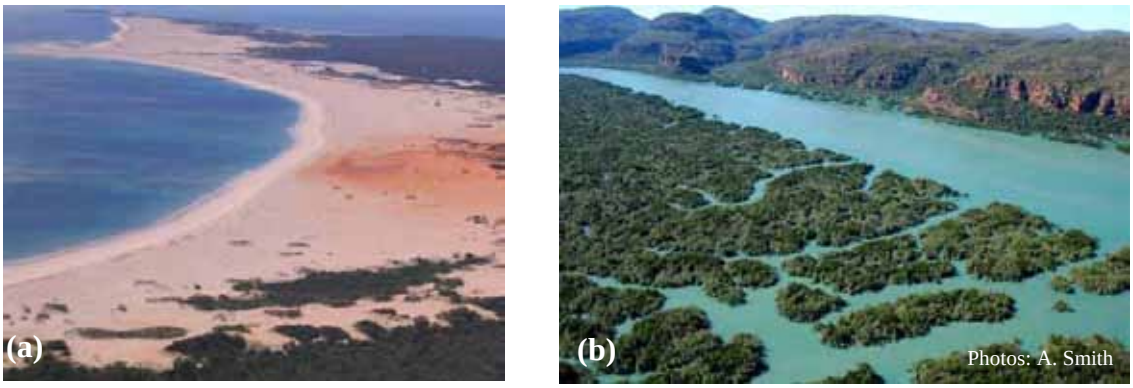


Figure 2: Two types of Kimberley coastal zones: (a) low sandy beach landforms south of Cape Leveque, and (b) sheltered sandstone and dolerite escarpment landforms north of Cape Leveque

Many island ecosystems are ecologically fragile due to their relative small size and unique evolutionary development (Newsome et al. 2002). At the same time some of this fragility is also related to the isolated nature of plant and animal populations. Uniqueness and especially small endemic populations are thus major contributing factors to the sensitivity of island biotas (Newsome et al.

2002). The accidental or deliberate introduction of non-native plants and animals or diseases to islands could occur as a result of visitation and development (Newsome et al. 2002). Exotic plants can be transported to islands attached to visitors' clothing and personal possessions and as seed in soil stuck in the tread of footwear, while small animals can be accidentally transported on boats and then reach land either by swimming or flying a short distance or being carried in luggage or items taken ashore (Newsome et al. 2002). Potential environmental impacts and threats relating to activities along the Kimberley coast are further discussed in Chapter 5. The coast of the Kimberley is subject to large tidal variations with tides up to 12.5 metres, which along with the summer rain discharge, have a great influence on the coastal environment (Hill 2004).

Some of the key landscape based tourist attractions include waterfalls such as the Kings Cascades (Prince Regent River) and Mitchell Falls (Mitchell River), rivers such as the Berkley and King George which are contained by vertical cliffs of up to 30 metres in height, freshwater rock pools, secluded beaches and hilly viewpoints overlooking the archipelagos (Figure 3).

Figure 3: Examples of scenic and landscape attractions of the Kimberley coast: (a) Kings Cascades, Prince Regent River; (b) rock warriors at Langgi; (c) King George River; and (c) rock pool at Surveyors Creek, Mitchell River

The most predominant landscape types accessed by expedition cruise vessels during tender or shore-based excursions include grasslands, open woodlands, rainforests, mangroves, beaches, rocky coast and reef areas (Figure 4). The environmental impacts of tourism activities at these sites can vary dramatically with a walking trail leading across a rock platform leaving virtually no trace compared to a reef area or dense grassland which may be severely impacted by even a few visitors. Island environments are particularly vulnerable as flora and fauna have often been protected from impacts through their physical isolation and separation from the mainland (cf. Chapter 5).

Biodiversity

The Kimberley has been identified as an area of high biological diversity and as a hotspot for its uniqueness, variety of habitats and species richness (Holmes 2004; Horstman & Wightman 2001b). High levels of threatened and endemic terrestrial species are found within the region and include 126 endangered fauna species, 132 priority listed flora species, 11 threatened ecological communities and a further 46 communities, at risk (Holmes 2004). Threatened species of interest include the golden bandicoot (*Isoodon auratus*) and the golden backed tree rat (*Mesembriomys macrurus*) (Hill 2004). According to Holmes (2004) intact ecosystems have been protected on the many islands which make up the extensive archipelagos off the coastline. The large river systems also provide important habitats for highly endemic species of freshwater fauna, such as gudgeons (*Eleotridae* sp.) and rainbow fish (*Melanotaeniidae* sp.). Four wetlands of international significance are listed on the Ramsar convention along with 21 nationally important wetlands and seven wetlands of subregional significance that support unique biodiversity (Holmes 2004). The coastal environment provides habitat for important fauna species, including migratory waders, breeding seabirds, intertidal fauna, breeding turtles and pearl oysters (Holmes 2004).

While there have been a considerable number of surveys and exploration trips to examine both marine and terrestrial aspects of biodiversity in the Kimberley region, much of the results are unpublished or in grey literature such as internal reports by government agencies. However, the Department of Environment and Conservation is currently conducting a review of existing literature to compile a comprehensive bibliography of relevant information and research on the Kimberley (K. Waples, pers. comm. 2006). Results from that overview will provide a coarse screening of biodiversity values and will help to identify knowledge gaps (K. Waples, pers. comm. 2006).

Early reports on the Kimberley region revolved largely around the region's potential for settlement and suitability for grazing with few reports, such as that by Fitzgerald (1918) focussing on botanical aspects. It was not until the 1970s and early 1980s that a number of studies were carried out by the Department of Fisheries and Wildlife, the Western Australian Museum and others, to survey and document the biodiversity of the region (e.g. Beard 1979b, a; Burbidge & McKenzie 1978; Kabay & Burbidge 1977; McKenzie 1981; Miles & Burbidge 1975; Western Australian Museum 1981). Further, a series of marine biological surveys were conducted by researchers from the Western Australian Museum and the University of Western Australia between 1994 and 1996 (Walker 1997b; Wells, Hanley & Walker 1995). Up until 1995 the marine plants, fish and invertebrates of the Kimberley were largely unknown and the surveys undertaken by the Western Australian Museum attempted to address these serious gaps in knowledge (Wells et al. 1995). For instance, there had been little systematic collection of macroalgae and seagrasses off the Kimberley coast up until 1987 when the first list of seagrasses was recorded (Walker 1997a). Subsequent surveys in 1994 and 1995 identified a total of 143 species off the coast (Wells et al. 1995). Two more recent studies also addressed the changing patterns of landscape fires with a reduction in traditional fire regimes and an increase in natural wildfire events (Fisher, Vigilante, Yates & Russell-Smith 2003; Vigilante & Bowman 2004).

Significant scientific data gaps in regard to fauna and flora surveys in the Kimberley remain, with many species not yet identified and ecological communities not yet described (Holmes 2004). As a result of these gaps the conservation status of many species is also unknown and modelling systems to assess species distribution have not been developed. Threats to the regions biodiversity include changed fire regimes, feral animals including the potential threat of cane toads, exotic weeds and grazing pressure (Holmes 2004) as well as the threat to previously isolated island systems with increasing human activities in the area.

Figure 4: Examples of the major landscape types encountered by tourists along the Kimberley coast: (a) grassland; (b) open woodland; (c) beaches; (d) rainforest; (e) reef; (f) mangroves; and (g) rocky coast.

In an effort to fill some of the knowledge gaps and get an update of the current status of island environments, the Department of Environment and Conservation in 2007 is commencing a two-year biodiversity study of 19 islands along the Kimberley coast, assessing terrestrial and aquatic fauna, birds, plants and non-biotic attributes (A. Start, pers. comm. 2007). The objectives of the study are to

document the scope of biological assets, identify current and potential threatening processes and to provide a knowledge base for the development of conservation and land management plans and assessment of sustainable development (A. Start, pers. comm. 2007).

From a tourism point of view, the key attractions in terms of fauna include marine species with iconic value such as whales regularly seen around Kuri Bay, saltwater crocodiles (C*rocodylus porosus*) that can be encountered on muddy riverbanks, barramundi (*Lates calcarifer*) which is very popular for fishing, and dolphins and turtles (Figure 5). Bird watching is also a popular activity, with some operators offering charter trips specifically geared towards bird watching enthusiasts. The collection of wild oysters are part of the itinerary features on the menus of most operators, while pearl farms encountered along the trip provide points for interpretation, with one operator marketing a visit to a pearl farm as one of their destinations.

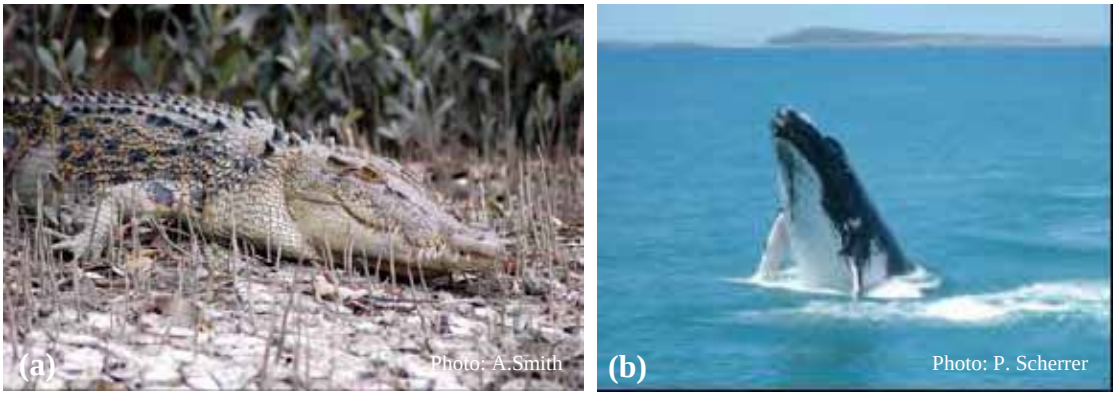


Figure 5: Examples of iconic wildlife attractions along the Kimberley coast: (a) saltwater crocodile and (b) southern right whale.

Apart from the boab trees (*Adansonia gregorii*) encountered along the Kimberley coast and the ancient cycads (*Cycas basaltica*), remnants from the Devonian period, at Careening Bay (Guého 2003), the attraction of flora to tourists appears to be largely dependent on the level of interpretation offered by the operator/guide and the personal knowledge and interest of individuals.

History

Some of the key tourism attractions in the Kimberley region are cultural and historic sites including evidence of Aboriginal occupancy going back thousands of years and more recent sites of European exploration and settlement. The following sections provides a brief overview of the historical background to the Kimberley coast, beginning with the Aboriginal occupation of the land and providing a timeline of European exploration as they relate to current tourism activities. This section also provides some insights into the past relationships between the Traditional Owners, European settlers and government, which still influence the attitudes and relationships during current interactions.

Aboriginal occupation

Initial settlement of Australia is estimated to have occurred between 40,000 to 65,000 years ago (Morwood 2002; O'Connor 1999; Walsh 2000). Occupation of the Kimberley region in Australia's far northwest began at least 30,000 years ago and probably earlier, according to archaeological excavation studies by O'Connor (1999) and evidence of rock art which was dated to about of 40,000 years before present (Fankhouser, O'Connor & Pittelkow 1997).

The extensive period of Aboriginal occupation of the Kimberley region is also reflected in one of the world's longest and most complex rock art sequences, with distinct chronological differences in painting types, subjects and styles (Walsh 2000). Wandjina figures and the earlier Gwion Gwion[1] (also referred to as Bradshaw figures (Figure 6) are the two main styles of rock art along the Kimberley coast, with a study by Roberts et al. (1997) dating a Gwion Gwion figure at more than 17,000 years old.

[1] Variant spellings are: Gwion Gwion, Guyan Guyan or Guyon Guyon.

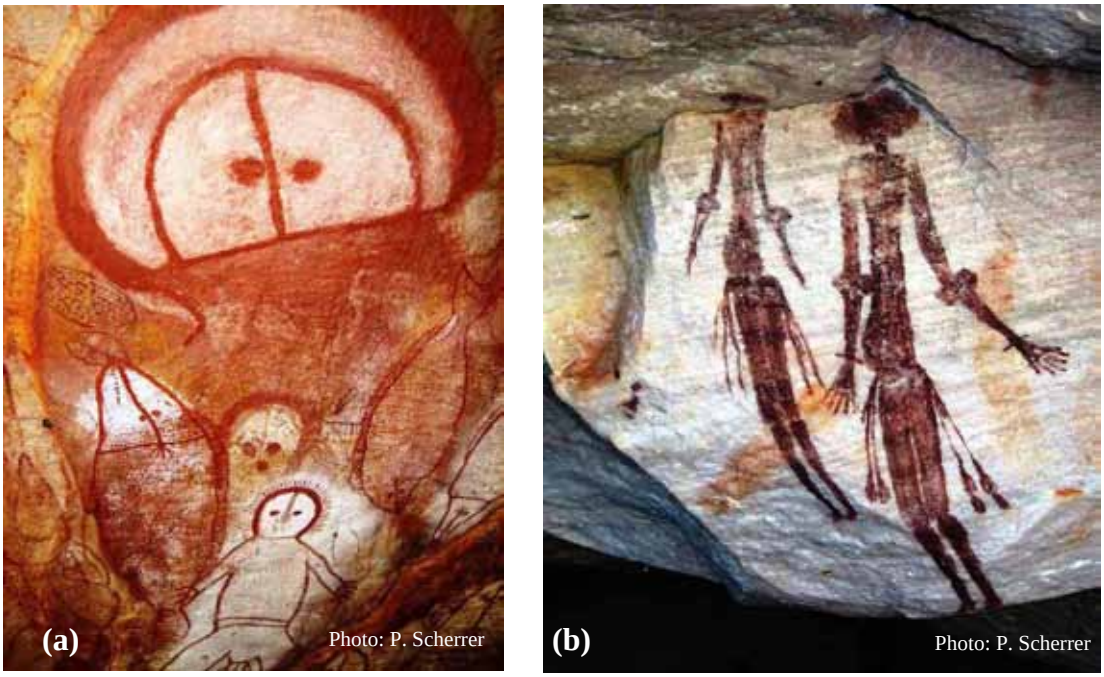


Figure 6: Examples of (a) Wandjina style and (b) Gwion Gwion (Bradshaw) style rock art along the Kimberley coast

Aboriginal people along the Kimberley coast live under a highly organised and complex social structure which is also reflected in the diversity of cultural and language groups (Department of Indigenous Affairs 2004; O'Connor 1999). Their close connection to country, which includes the dimensions of people, Dreamings, areas of land and sea, living and non-living things, the subsurface, underground and the sky, has enabled them to survive off the land despite at times extremely harsh conditions (Kimberley Land Council 2005). The Law assigned to Aboriginal peoples in the Dreamtime forms the basis and guiding principles for their society and interaction with nature and assigns rights and responsibilities to be upheld (Kimberley Land Council 2005; Wunambal Gaambera Aboriginal Corporation 2001a).

Indonesian fishermen, who for at least two hundred years had made annual voyages to the Kimberley coast to collect bêche-de-mer[2], were the first people of different race and culture with whom the Aboriginal people communicated (Crawford 2001). The Indonesians established hearths to process their catch at strategic points along the coast and according to Crawford (2001), archaeological evidence as well as Aboriginal stories suggest that Aboriginal people and Indonesians appeared to largely coexist amicably.

The first documented contact between Aboriginal people from the Kimberley coast and European explorers was around 1820 during hydrogeographic survey expeditions lead by Philip Parker King (Crawford 2001). Over the following decades, there was an increasing stream of explorers, settlers and pearlers to the region which also resulted in increasing contacts, including some hostile encounters, with the local Aboriginal people (Crawford 2001; O'Connor 1999). Nevertheless, prior to the 1900s, contact with Europeans and Indonesians appeared to have had little impact on Aboriginal society with the economic base remaining in hunting and food gathering, supplemented by some crop planting (Crawford 1985).

During the latter part of the nineteenth century, expeditions of pastoralists, missionaries and police to the Kimberley often resulted in unfriendly and sometimes violent encounters with Aboriginal people (Crawford 2001; Kimberley Land Council 2005).

European efforts to settle the Kimberley region later culminated in extreme violence such as the massacres at Forrest River and Mistake Creek (Crawford 2001; Kimberley Land Council 2005).
The so-called period of pacification was followed by a period of colonial control, with white laws being introduced to limit the freedoms of Aboriginal people including the *Aborigines Act* (WA) in 1905 under which the Chief Protector was made the legal guardian of every Aboriginal and 'half-caste' child under 16. In 1906 the first mission was established at Pago (moved to Kalumburu in 1937) by

[2] Also named sea cucumber or trepang, bêche-de-mer is an echinoderm of the class Holothuridae and lives on the sea floor. It is considered a delicacy in Asian countries such as Indonesia and China. Source: The Australian Oxford Dictionary (1991) Oxford University Press, Melbourne.

Benedictine monks, followed by a Presbyterian mission near Hanover Bay (later moved to Kunmunya) and an Anglican mission at Forrest River (Oombulgari) (Table 1) (Chalarimeri 2001; Crawford 2001). While the initial contact with the missionaries was mixed with considerable mistrust fuelled by earlier encounters with Europeans and some incidents, the Aboriginal people of the surrounding areas would in time become more or less permanently based at the missions (Crawford 2001). The attempts to integrate the Aboriginal population into the white population and economy and to sever the links between Aboriginal people and their country, law and culture became official government policy in the 1950s during the "assimilation" era. Rather than to assimilate, however, Aboriginal people tended to disengage rather than to submit to an imposed outside force (Kimberley Land Council 2005).

Table 1: Timeline of missions established in the Kimberley

1906	—	Pago Mission established by Benedictines at Napier Broome Bay in Gwini people country
1912	—	Presbyterian mission established at Port George IV, close to Hanover Bay, near the entrance to Prince Regent River. Accessed via sailing lugger
1916	—	Port George IV Presbyterian mission moved to Kunmunya
1930s	—	Kalumburu—Aboriginal community with about 270 residents. Settled by Benedictine monks for good soil and abundant water
	—	Oombulgary (Forrest River Mission)—established by Anglicans
1951	—	Kunmunya Mission abandoned. The resident Aboriginal population was briefly relocated to Munja at the head of the Walcott Inlet and subsequently to Wotjulum on the Yampi Peninsula
1954	—	First vehicle overland arrives at Kalumburu
1956	—	Former Kunmunya Mission population was relocated to Mowanjum near the township of Derby
1972	—	Last Ngarinyin elders left nomadic life leaving the Prince Regent country unpopulated
1984	—	Kalumburu mission transferred from Benedictines to the Bishop of the North-west Development of the Kalumburu Council

With the initial relocation of the missions and eventual closure of all but Kulumburu (Table 1), communities were moved further and further away from their traditional homelands. Nevertheless, to this day, the desire of many older people to return to their traditional lands remains strong (Kimberley Land Council 2000, 2004a, 2004c, 2005; Crawford 2001; cf. Chapter 5). Today, despite the inherent social problems associated with disengagement and geographic displacement, the Aboriginal people of the Kimberley continue to define their communities through the practice of law and culture and remain strongly attached to their identity, with emphasis on independence, tradition and self-determination (Kimberley Land Council 2005). There is a strong interest by Aboriginal people of the Kimberley area in the maintenance of their cultural sites, many of which have become tourist attractions accessed by people on private vessels and by tour operators.

The Aboriginal history and cultural sites form a key component of the Kimberley coast tourism product, with expedition cruise vessels regularly visiting sites of Aboriginal significance, including rock art and burial sites, and using the Aboriginal aspect in their marketing (Figure 7**;** cf. Chapter 4).

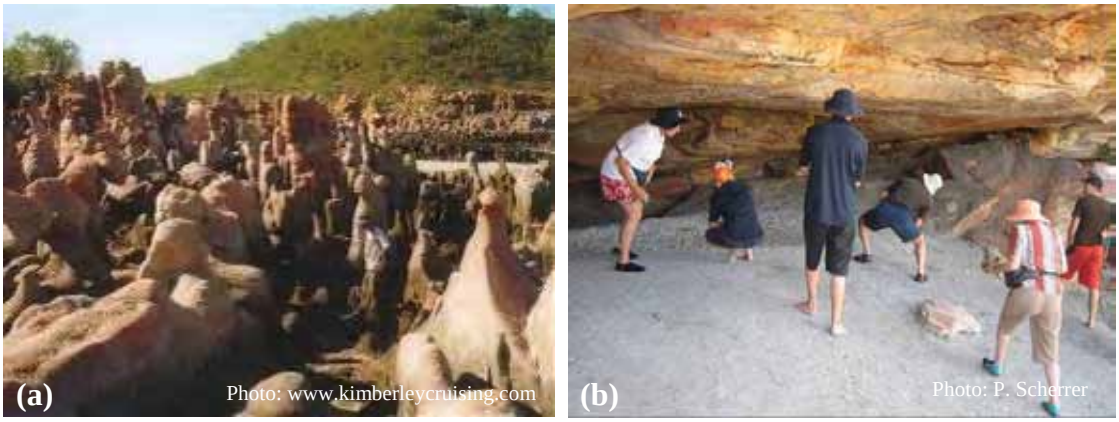


Figure 7: Visitors at sites of Aboriginal significance: (a) Stone Warriors at Langgi; and (b) rock art site in cave with midden

European explorers

The Kimberley region was Australia's last major region, apart from the Central and Western deserts, to undergo European settlement (O'Connor 1999). While the first recorded European visit to the area occurred by sea in 1644 by the Dutch explorer Abel Tasman, serious attempts at European settlement did not occur until the late nineteenth century. The timeline below (Table 2) shows the sequence of early exploration and survey expeditions followed by the attempts at developing pastoral lands. More recent activities include pearling and mining and the development of the expedition cruise tourism industry.

Table 2: Timeline of European exploration and settlement of the Kimberley region

1644	—	Abel Tasman (Dutch explorer) charted the Kimberley coast during the first recorded European visit to the area
1688	—	William Dampier (English explorer) in the *Cygnet* explored the Kimberley and landed near Cape Leveque
1788	—	The vessel *Vansittart* surveyed the Kimberley coast (providing today's name for Vansittart Bay)
1801	—	French scientific expedition under command of Nicholas Baudin surveyed the Kimberley coast and named the Bonaparte Archipelago and many of its outlying islands
1819 to 1822	—	Phillip Parker King conducted three hydrogeographic surveys between 1819 and 1822 of the Kimberley coast aboard *HMC Mermaid*. Beginning of contact between Northern Kimberley Aboriginal people and Europeans with first contact at Encounter Cove, Vansittart Bay. In 1920, King explored Prince Frederick Harbour in the *Mermaid* which was leaking badly that it had to be careened for repairs, giving today's name to Careening Bay. In 1921 King had an on-shore encounter with Aboriginal people at Hanover Bay that resulted in a spearing attack, subsequent shots by Kings expedition and 'confiscation of materials' from the local Aboriginal people
1837	—	George Grey explored country between Glenelg River and Prince Regent River
1837	—	John Clements Wickham and John Lort Stokes in *HMS Beagle* examined as far north as Port George IV and sighted Mt Trafalgar and Mt Waterloo and carried out hydrogeographic surveys of the Australian coast
1863	—	Exploration of Camden Harbour and Glenelg River by J. Martin from 1863-1864
1864	—	Camden Harbour settled. Families from Victoria, Australia attempted settlement and sheep farming
1865	—	The supply ship *Calliance* wrecks at Camden Harbour. Camden Harbour settlement was abandoned
1869	—	First documented voyage by a pearler *Argo*
1879	—	Alexander Forrest explored the Kimberley with interest in pastoral leases and townships across the Kimberley. Focused on floodplains of the Fitzroy and Ord Rivers
1880	—	Establishment of Ports forms the beginning of Wyndham and Broome
1882	—	Establishment of first pastoral station at Yeeda near the present town of Derby
1890	—	Joseph Bradshaw was first of a series of people interested in the pastoral potential of the West Kimberley. Leased 20 blocks of 50,000 acres straddling the Prince Regent River upstream from St Georges Basin
1891	—	Joseph and Frederick Bradshaw along with William Tucker Allen and Hugh Young undertook expedition on *The Twins* (also refereed as *The Gemini*) from Wyndham to the Roe River (mistakenly taken for the Prince Regent River) where 161 plant specimens were collected and Joseph Bradshaw made rough sketches of rock art known as 'Bradshaw paintings' but identified by Aboriginal people as *gwion gwion* (also spelt gyuon gyuon)
1901	—	Brockman exploring party visited Prince Regent River, Calder River and along the Roe and Moran Rivers
1905	—	C. Crossland entered area near Prince Regent River looking for good pastoral lands
1914	—	Government opened land between Wyndham and Drysdale River for cattle grazing. Establishment of Barton Plains Pastoral Station on the banks of the Drysdale River by Bovril Ltd. Abandoned in 1917
1921	—	W.R. Easton visited on a pastoral expedition from Port George IV Mission (Kunmunya) into St George Basin in Prince Regent River, Calder and Glenelg Rivers to the Headwaters of the Drysdale River
1964	—	Most of Bradshaw's old leases including the homestead were incorporated into the conservation estate with the declaration of the Prince Regent Nature Reserve

Sources: (Coate 2006; Crawford 2001; Keighery, Gibson, Kenneally & Mitchell 1995; Miles & Burbidge 1975; O'Brien 1997; O'Connor 1999; Willing & Kenneally 2002)

The European history is another component of today's multifaceted tourism product of the Kimberley coast. Sites visited by expedition cruise ships include the 'Mermaid Tree', a large boab tree at Careening Bay that was inscribed by the crew of the *HMC Mermaid* in 1820; and the ruins and graves of the failed settlement at Camden Harbour and Sheep Island (Figure 8). These sites instill in the visitors a sense of the settlement and exploration history of this remote area, the hardship, difficulties and crushed dreams these people faced in their times. There are also numerous remnants of plane wrecks and operational equipment near the former Truscott Airbase constructed in 1944 during World War II, including the frequently visited wreck of a DC3 plane near Vansittart Bay (Figure 8).

Figure 8: European history sites (a) Mermaid tree at Careening Bay, (b) DC 3 wreck at Vansittart Bay and (c) settler grave on Sheep Island.

Land Tenure

The Kimberley region consists predominantly of Aboriginal reserves with areas of unallocated Crown Land, pastoral leases, mining reserves and conservation estates (Sutherland & Pritchard 2001). The region has both significant natural, Aboriginal and Anglo cultural values. Both the land and seascapes of the Kimberley region are regarded as sacred to the Aboriginal owners (Sutherland & Pritchard 2001).

Aboriginal reserves

The majority of coastal land in the Kimberley is designated as Aboriginal reserve (Figure 9). Aboriginal reserve land is Crown land set aside for the use of Aboriginal people (Department of Indigenous Affairs 2006). Aboriginal reserves are classified as 'A class reserves', which requires for any change to be approved by both Houses of Parliament, thus giving it added protection (Department of Indigenous Affairs 2006). Certain Aboriginal reserves held by the Aboriginal Lands Trust (ALT) are subject to another level of protection under Part III of the Aboriginal Affairs Planning Authority Act which restricts access for miners and the public and stipulates the need for a special entry permit issued by the ALT or the Minster for Indigenous Affairs (Department of Indigenous Affairs 2006). Many reserves are managed by management bodies. The rights and duties of management bodies are set out in Management Orders and can include the power to lease the reserve, as long as the lease is consistent with the purpose of the reserve (Department of Indigenous Affairs 2006).

Unallocated Crown land

Some portions of coastal areas are designated as unallocated Crown land (UCL; formerly known as vacant Crown land). UCL 'is not subject to any interest (other than Native title interests under the Native Title Act 1993) and which is not reserved or declared or otherwise dedicated under the LAA or any other Act' (Department for Planning & Infrastructure 2005a).

Freehold land

There is very little freehold land with coastal access along the Kimberley coast. Freehold land is land over which the Crown has granted ownership (Department of Indigenous Affairs 2006). Freehold gives the owner the exclusive right to the land for an indefinite period of time, including the rights to sell, lease or rent the land to someone. The Crown retains the right to compulsorily buy the land back for purposes to benefit the State (Department of Indigenous Affairs 2006).

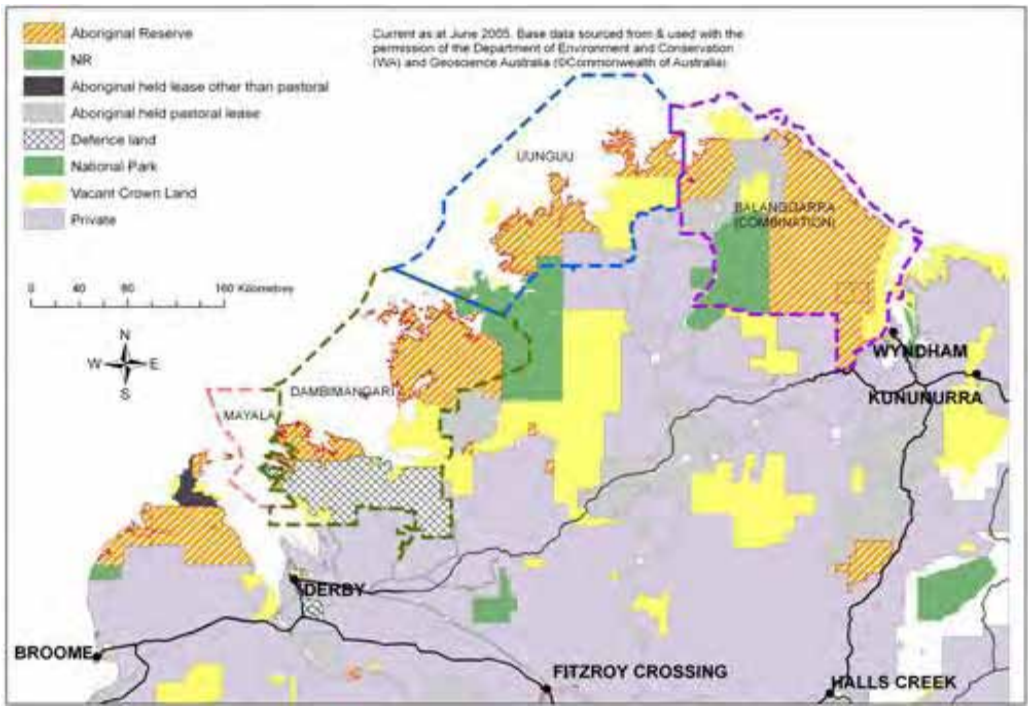


Figure 9: Land use map of the Kimberley region with Native Title claim areas within the study area

Leasehold land

As shown in Figure 9, there are a number of areas covered by leases along the Kimberley coast. Leasehold land is Crown land over which the Crown has granted a lease for a set time and specific purpose (Department of Indigenous Affairs 2006). The lessee can hold, occupy and use the land in return for rent, but never owns the land and the leasehold will carry with it certain conditions or requirements. A lease may be sold to another person or group with the approval of the Minister for Lands. There are different types of leases: pastoral leases are leases for grazing stock and all purposes connected with that and are issued by the DPI; general leases are leases for some particular purpose, such as for the purpose of the use and benefit of Aboriginal people, and are issued by the DPI; reserve leases are issued by a reserve's management body or by DPI; leases in perpetuity are issued by the DPI, have no expiry date and are only given to or for the benefit of Aboriginal persons (Department of Indigenous Affairs 2006).

Conservation areas

In 1978, the Prince Regent Nature Reserve was nominated as a World Biosphere Reserve by UNESCO in recognition of its pristine values and outstanding wildlife. This area today has become one of the main attractions and destinations for expedition cruises along the Kimberley coast.

There are a number of conservation estates managed by the Department of Environment and Conservation (DEC) in the Kimberley. The two main areas relevant to coastal tourism are the 635,000 hectare Prince Regent Nature Reserve and the 115,300 hectare Mitchell River National Park. There is also a series of three smaller conservation areas on the Mitchell Plateau, namely the 17,570ha Lawley River National Park, the 1270 hectare Camp Creek Conservation Park and the 12,200 hectare Laterite Conservation Park (CALM 2000). As outlined in a document by the Wunambal Gaambera Aboriginal Corporation (2001a), however, the Traditional Owners question the legality in the way these reserves were declared. Arrangements are being made to establish joint management of the Mitchell River National Park between DEC and the Traditional Owners.

Native title claims

In 1992, Australia's court system recognised in the Mabo decision that Aboriginal people have developed, and in many cases still practice, a system of law and land ownership relating to the laws and customs of their country, also referred to as native title (Kimberley Land Council 2005). Native title recognises the Traditional Owners' responsibility for country in accordance with their laws and

customs and recognises their rights to use land and its resources (Kimberley Land Council 2005; Native Title Tribunal 2006a). As shown in Figure 9, there are many native title claims in the Kimberley, most of which are still progressing through mediation or trial. Native Title Representative Bodies (NTRBs), such as the Kimberley Land Council, represent the native title interests of Indigenous Australians in a particular region. These bodies are recognised under the *Native Title Act* 1993 (Cwlth) and funded by the Federal Government. When native title is recognised, the native title holders are required by the *Native Title Act* 1993 to establish a prescribed body corporate (PBC) to manage their rights and interests (Native Title Tribunal 2006b).

The main area accessed by expedition cruise vessels, and thus the study area for this project, lies within four native title claim areas (Figure 9). According to the Kimberley Land Council (2005), it is likely that there will be several determinations of native title in the near future.

Mining, pearling and other leases

Mining operations are currently focused on Cockatoo and Koolan Islands, as well as some inland mines. However, there has been increasing interest in recent years with intensified exploration activities also by the petroleum industry and there are many tenements in the Kimberley area which are currently not mined.

Several pearling operations maintain leases along the Kimberley coast, many of which are in areas traversed by expedition cruise vessels. Following increasing user conflict between pearling operations, interested in expansion but also concerned by potential impacts on their operations, and tourism operations, a memorandum of understanding was drawn up between the industries as discussed further in later sections.

Fly-in and drive-in tourism operations are concentrated to a few accessible locations such as the Mitchell Plateau and Talbot Bay. There are also several fishing camps, resort style establishments and squatter residences along the coast (cf. Chapter 4).

Chapter 4

KIMBERLEY REGION INDUSTRY DESCRIPTION

Regional Economy

Since the arrival of European settlers, the Kimberley region's economy was based on pastoral activities, pearling and gold mining. Today, the region has a diverse regional economy with activities such as mining, crude oil production, pearling, fishing, agriculture and pastoral production, tourism and retail (Kimberley Development Commission 2005a, b). Currently the largest economic sector is the mineral and petroleum industry which includes the exploration and production of diamonds, iron ore, nickel and crude oil (cf. Table 3). The second strongest sector is retail, followed by tourism, the building and construction industry, pearling, pastoral and agricultural production and fishing (Table 3).

Table 3: Economic activities of the Kimberley Region

Economic activity	Estimated value in 2004–2005 (million $)
Mineral and Petroleum Industry (total value), includes production of Diamonds (467.5), Iron ore (39.7) and Crude oil (14.7)	660.6
Retail	330.2
Tourism (total expenditure at destination) [(1)], includes domestic expenditure (195.5) and international expenditure (31.7)	227.3
Building/Construction Industry	123.0
Pearling	91.5
Pastoral production (cattle)	60–70
Irrigated agricultural production	53.6
Fishing and Aquaculture (total value excluding pearling) includes Finfish (8.8) and Prawns (4.4)	13.5

Source: (Kimberley Development Commission 2005b, 2006; Tourism WA 2006b)

[(1)] Values are estimates by research Tourism Research Australia which may be associated with confidence intervals of between 30% to 50%.

Irrigated agricultural production, largely based around the Ord River irrigation scheme near Kununurra in the North East of the region, has experienced considerable growth in recent years, though is heavily subsidised through government funding of the scheme. The region's pastoral activities based on cattle production contribute almost 10% of the State total (Kimberley Development Commission 2005b). Even today, however, most coastal areas are too rugged for successful pastoral activities and as a result they are concentrated along the major inland rivers (O'Connor 1999). Tourism is currently the third largest sector and is increasing in significance within the region, being regarded as one of the fastest growing industries with the key tourist product based on the experience of the remoteness and pristine nature and landscapes (Department for Planning & Infrastructure 2006; Holmes 2004; Kimberley Development Commission 2005a, b). In 2004–2005, the estimated tourism expenditure at destination for the Kimberley Region was larger than the combined estimated production value of pearling, pastoral production and fishing (Table 3).

Tourism

A range of tourism activities has developed throughout the Kimberley, including ecotourism, ground tour and fly-drive operations, four-wheel drive (4WD) opportunities, luxury coastal cruising, beachside resorts and Indigenous cultural tours (Holmes 2004). In 2004–2005 the Kimberley region attracted an estimated 285,800 overnight visitors, 86% of whom were domestic visitors (Tourism WA 2006b).

In contrast to the currently booming mineral and petroleum industry which often has considerable infrastructure needs and results in physical changes to the landscape, tourism is seen as a non-extractive economic opportunity for the region. Despite the growth of tourism, however, there is little coordinated management of the increasing numbers of tourists visiting the region, resulting in unregulated tourism

pressures, particularly on the coastal areas (Kimberley Development Commission 2005a). A recent Department for Planning and Infrastructure discussion paper concluded that there is a 'need for greater coordination of decision making to deal with the cumulative impacts on the environment, culture, communities and infrastructure' (Department for Planning & Infrastructure 2006 p. 40). These sentiments were echoed during the Kimberley Marine Tourism workshop organised by the Tourism Council of Western Australia in Broome on 22 March 2006 as a forum between government agencies and tourism operators.

Recognising the growth of tourism to the region's economy, the Kimberley Development Commission in conjunction with the regional tourism marketing body Australia's North West has undertaken the Kimberley Sustainable Tourism Project with the goal of providing the basis for planning for the next decade. The project focuses on marketing the region and appears to concentrate on terrestrial tourism, rather than coastal tourism (Kimberley Development Commission 2005a). There is still a need to plan and manage tourism activities.

Eight specific projects include:
- Understanding and Researching the Market for Sustainable Outcomes
- Marketing and Branding for Sustainable Development
- Management Standards and Sustainable Tourism
- Connecting Kimberley Tourism and the World
- Developing Indigenous Tourism and Industry Participation
- Sustainable Tourism Futures and the Environment
- Developing Events Market Capacity and Coordinating Regional Events
- Developing and Sustaining Air Services

(Kimberley Development Commission 2005a p. 32)

A draft Kimberley Natural Resource Management Plan (2004) also recognises the growth of tourism to the region and states that maintaining and appropriately managing the attraction of the wilderness experience will be a crucial challenge facing the regions natural resources (Holmes 2004). The Management Plan notes that the coastal seascape is of high value and provides the main drawcard for coastal tours, such as live-aboard charters. The plan cites a number of pressures surrounding coastal tourism which include:
- lack of planning protection, e.g. marine parks or fish and fish habitat protection areas
- high usage of certain areas, e.g. Broome coast
- increasing pressures on the remote Kimberley coast
- construction of unauthorised structures overlooking the coast
- loss of cultural knowledge of coastal Aboriginal people, especially in remote areas of the Kimberley and
- lack of active management.

(Holmes 2004)

While access to Aboriginal lands requires an ALT permit, to date there is no tourism management structure or regulation of land or ocean based tour operations (with the exception of the Prince Regent Nature Reserve and Mitchell Falls National Park managed by the Department of Environment and Conservation) other than the requirement to have a vessel licensed by the Department for Planning and Infrastructure (DPI) to deliver tours (Department for Planning & Infrastructure 2006). Licensing of operators by DPI revolves around aspects of safety and vehicle maintenance, rather than particular environmental or socio-cultural impacts that may be associated with tours (cf. Chapter 5). The main reason the Kimberley coast has not yet received the interest and pressure from tourism and recreational activities, as for example the Queensland coast and the Great Barrier Reef area, has been due to its remoteness. The lack of coastal access routes and the absence of supply infrastructure (including refuelling points) has so far limited the far north coast to tourist vessels with sufficient fuel supply to cover the distance between Broome and Wyndham and sufficient speed to make the trip duration viable, to fly-in fly-out operations and to private sailing vessels which have no time pressures. Nevertheless, two areas have become key tourist attractions along the Kimberley coast: the Mitchell Plateau, accessible by road and air, and the Horizontal Waterfalls in Talbot Bay, accessible by seaplane. Both locations offer established tour operations and scenic tours. There are also some coastal camps along the coastline on Cape Leveque and near the Mitchell Plateau, offering different levels of resort style or bush camp accommodation (Table 4).

Table 4: Coastal camps along the Kimberley coast

Name	Location	Est.	Season	Guests	Access by	Native Title Area	Activities advertised	Status*
Freshwater Cove	South of Kuri Bay	1995	Apr - Oct	6	Seaplane / Helicopter	Dambimangari	Fishing, whale watching, bush walks, natural & scenic attractions	Agreement with Dambimangari
Honeymoon Bay	Napier Broome Bay					Balanggarra	Self catered fishing; fishing charters	Indigenous owners
Kimberley Coastal Camp	Admiralty Gulf	1994	Mar - Oct	10	Helicopter	Uunguu	Fishing, walking	Lease; but no agreement with Uunguu
Kooljaman at Cape Leveque	Cape Leveque	1986	Jan - Dec	262	Air/4WD	Bardi Jawi	Boating excursions, fishing, scenic flights, whale watching	Indigenous owners
Lombadina	Cape Leveque	1991	Jan - Dec	30	Air/4WD	Bardi Jawi	Tours, fishing, charters	Indigenous owners
McGowan Island	Napier Broome Bay					Balanggarra	Self catered fishing; fishing guides	Indigenous owners
One Tree Beach	Admiralty Gulf	1991	Apr - Oct	6	Seaplane / Helicopter	Uunguu	Fishing	No lease; no agreement
The Bush Camp Faraway Bay	Faraway Bay	1996	Mar - Oct	12	Air	Balanggarra	Cruises, wildlife, walking	Lease; but no agreement with Balanggarra

* Source: Kimberley Land Council, 2007

These coastal camps generally offer fishing based activities, but also include some day cruises and walks in their advertised activities. At least one operator does not have a lease nor an agreement with the Traditional Owners of the area (Table 4). There are also a number of outstations and two caravan parks on the Dampier Peninsula, the southern part of the Kimberley coast.

Aboriginal Interests and Tourism

The demographic characteristics of the Kimberley make the region unique to Western Australia, with 46% of the population being Aboriginal in contrast to the 2.6% of Aboriginal population for all of Western Australia (Australian Bureau of Statistics 2006b; Sutherland & Pritchard 2001). The Kimberley Aboriginal population has grown over recent years and indications are that Aboriginal people tend to be long-term residents of the area. On the other hand local non-Aboriginal people tend to be transitional in nature, residing in the region for contract work and business commitments (Kimberley Development Commission 2005a; Sutherland & Pritchard 2001). Although there is socio-economic diversity within the Aboriginal communities across the Kimberley, poverty, poor health, incomplete education and low participation in the labour market is evident amongst many Aboriginal people (Kimberley Development Commission 2005a).

Indigenous tourism

One of the key projects discussed in the Kimberley Development Commissions Annual Report 2004–2005 is that of Indigenous tourism. The commission has held strategic planning workshops promoting the development of Indigenous tourism and industry participation. Tourism is viewed as a potential opportunity for Aboriginal people to generate positive economic and social outcomes (Kimberley Land Council 1998, 2004b; Sutherland & Pritchard 2001). The region has an active Aboriginal tourism industry and the Kimberley offers unique opportunities to experience Aboriginal culture and landscapes (Jacquier 1999; Tourism WA 2006c). Aboriginal tourism products include cultural tours and safaris, art galleries, markets, accommodation and camping places (Jacquier 1999; Tourism WA 2006c). However, as the Dampier Peninsula Tourism Study Public Report cautions, it should not be assumed that all Aboriginal communities are united on their views about tourism or willing to participate in tourism activities (Jacquier 1999).

One of the management challenges will be to maintain Aboriginal culture and heritage, to protect sensitive sites and respect the spiritual connection of the Traditional Owners to country, a key concern raised by Traditional Owners during this project.

Spiritual connection

An area of possible conflict regarding tourism activities and indigenous custodianship lies in the Ngauwudu or Mitchell Plateau region. The area is a popular tourist attraction where visitors view spectacular scenery, rock pools and the Mitchell Falls. The area is a sacred area for the Wunambal people who view tourist pressures as being acute (Wunambal Gaambera Aboriginal Corporation

2001a). The Traditional Owners have expressed concern at the uncontrolled access to the sacred sites in this area, which they believe could result in serious accidents, illness or death to custodians of the area or to visitors as a result of disturbances (Wunambal Gaambera Aboriginal Corporation 2001a). There is a lack of understanding by non-Aboriginal people of the deep spiritual connection to country held by Aboriginal people through their Dreaming stories and of the Aboriginal Laws that control all aspects of that connection (Horstman & Wightman 2001b). According to Aboriginal Law, belonging to a particular 'country' means having personal responsibility to look after that country, which includes both the physical and spiritual aspects (Horstman & Wightman 2001b). The uncontrolled access by visitors has resulted in disturbances to art, ceremonial and burial sites with evidence of removal of skeletons that were placed at burial sites (Horstman & Wightman 2001b). The significance of disturbing these sacred sites may not be readily understood by visitors or some tour operators.

The Ngauwudu Management Plan was developed in an attempt to address the growth in visitor numbers to the area and to address the lack of tourist understanding of the areas' significance. The plan clearly states that visitors are welcome to visit 'country', however they must do so, without breaking Aboriginal Law and by showing respect for 'country' (Wunambal Gaambera Aboriginal Corporation 2001a).

Aboriginal rock art sites are of particular interest to tourism operators. In reviewing the literature and websites, the majority of charter boat operators specifically mention visiting and viewing Aboriginal rock art as part of the itinerary with many operators using the artwork as part of their marketing strategy (cf. following section). These rock art sites have particular significance to the Aboriginal people. Two of the most often cited art types are the Wandjina art and the Gwion Gwion art (also named Bradshaw figures after Joseph Bradshaw, the first European person to describe them in 1891) (Figure 6). Wandjina figures are large figures found inland, on the coast and on some islands such as Bigge Island (Blundell & Woolagoodja 2005). Wandjinas are supernatural beings who have been around since the beginning of time (the Dreaming) and continue to play an active role in Aboriginal people's lives today. The Wandjina are specific to the people of a particular region and are regarded as some of the most important manifestations of the life-force known as Wungurr (Blundell & Woolagoodja 2005). The land and sea are viewed as spiritual grounds and many places of significance are accessed by visitors who are unaware of that significance. For example, Doubtful Bay and Langgi Beach are areas where the Wandjinas transformed themselves into the boulders following a battle with the sea (Watchman 1997). Conflicts may occur between the local Aboriginal community, operators and visitors due to the lack of understanding of the significance of these sites. The Gwion Gwion paintings are also popular tourist attractions. These paintings of human-like figures are found throughout the Kimberley and are of significance to the local Aboriginal communities (Wilson 2006a), though there has been some controversy regarding claims by Walsh (2000) regarding their origin.

Intellectual property

A scoping study conducted by Meister (2004) raised a number of issues associated with tourism development in the Kimberley region, including the need for involvement of Aboriginal elders to oversee and make recommendations on impacts of cultural tourism activities and the issue of intellectual property. Within tourism, knowledge is largely viewed as a commodity. Current technology, allows digital photographs of cultural items to be taken and then sent via email and similarly, Global Positioning Systems (GPS) allows the position of certain cultural sites to be sent anywhere around the world (Meister 2004). Such practices, although seemingly innocent, can offend and lead to the desecration of important sites, if consent of Aboriginal people is not given (Meister 2004). Tourists often believe it is their right to record their observations and as such may violate local customs (Meister 2004). Greater understanding through education is required by both tourist operators and visitors to avoid possible conflicts with the Aboriginal community in the various locations across the Kimberley.

Consultation

Aboriginal communities are sometimes portrayed as impeding development such as tourism development (Crawford 2001). According to Crawford (2001), such opposition is usually a result of a lack of consultation or the unwillingness to accommodate their views, such as the need for protection of sacred sites or the application of unrealistic timeframes, thus not leaving adequate time for a proper consultation process. Non-Aboriginal people generally perceive Aboriginal people as one homogenous group. This is not the case. There are numerous different language groups across the Kimberley and each group has their own responsibilities to 'country' (Crawford 2001). The study area for this project, for example, involved the native title groups of Mayala, Dambimangari, Uunggu and Balanggarra which were approached via the Kimberley Land Council and the Saltwater Country Steering

Committee, made up of members of the four native title groups. For tourism development to be culturally and socially sustainable, it is vital that proper and appropriate consultation with the relevant Aboriginal communities takes place (cf. Chapter 1).

Coastal Tourism

The natural beauty preserved by the remoteness and inaccessibility of the region combine to make the Kimberley coastline a unique place. Promoted as Australia's 'last frontier' where visitors can get a 'unique wilderness experience', the Kimberley region has been heavily marketed in recent years and has been promoted in the travel media through free-to-air television programs such as Getaway and The Great Outdoors as well as regular articles in travel magazines and through a series of tourism awards won by Kimberley based tourism operators. Apart from some resort or fishing style coastal camps and fly-in-fly-out operations such as at the Mitchell Plateau and in Talbot Bay, most tourism activities accessing the Kimberley coast are from sea based vessels. One of the fastest growing aspects of tourism in the Kimberley region is the expedition cruising industry reviewed in this report which offers adventure and luxury cruises along the coast between Broome and Wyndham, accessing on-shore sites along the way.

Expedition Cruise Tourism

The first commercial cruise along the Kimberley coast was lead by Peter Sartori aboard the vessel *Piscean* in 1980 with six to eight passengers who were mostly fishermen. In 1983, Kevin Coate took 20 passengers on a 14-day trip to the Prince Regent River and Hunter River aboard the *Barbara Anne* from Jurien Bay, Western Australia (Coate 2006). In the mid 1980s, other vessels began operating out of Broome, taking fishing and scenic adventure trips along the Kimberley coast. Vessels included the *Wave Spirit*, *Jodi Anne*, *That's Life*, *DMcD* and *NorthStar* (later replaced by *True North*) (Coate 2006). In 1987, the vessel *Kimberley Explorer* (formerly *Motive Explorer* used for viewing the America's cup races in Fremantle) generated interest in the cruise ship industry in the Kimberley, as did the death of the model Ginger Meadows, who was attacked by a crocodile at Kings Cascades (Coate 2006). In the last five to ten years, the expedition cruise industry along the Kimberley coast has grown rapidly with about 30 operators offering a range of trips along the coast in 2006 (cf. following sections).

Expedition cruise ship tourism along the Kimberley coast has seen increasing growth over recent seasons with a two-thirds increase in passenger capacity in 2005, which has implications for management (Department for Planning & Infrastructure 2006). The number of people who visit the coast and marine areas is unknown, yet the cruise boat industry is growing, with more money being channelled into new infrastructure, such as ports and jetty facilities (Cook 2004). The cruise expeditions travel to the islands, inlets and bays and also visit the gorges and river systems of the Kimberley region via tenders. In order to retain market share of the Kimberley tourist industry one tourism company committed itself to spend $13 million on a new larger luxury vessel to replace its smaller luxury version (Cook 2004). The owner of the company believed that people wanted to 'be in the middle of nowhere and be looked after' (Cook 2004). An analysis of brochures and internet sites appears to concur with this viewpoint (cf. section on Marketing and product).

The increased number of tour charter operators is said to impact on other stakeholders, including commercial stakeholders, such as prawn trawlers and the pearling industry, and on Aboriginal people (Department for Planning & Infrastructure 2006). One strategy to address conflicts was the signing of a Memorandum of Understanding (MOU) between members of the Kimberley Charter Boat Association and the Pearl Producers Association. The risk to tourism of increased numbers of tourist vessels along the coast is the loss of the sense of remoteness and wilderness that is a major product for the charter boat operators (Department for Planning & Infrastructure 2006).

Apart from the direct impact of tourism activities on other stakeholders, there are also concerns about boat activity impacts on the fragile environment and the culturally sensitive areas of the coast. This includes damage to reef environments from the reef walks which are undertaken by some operations when the tides are low. Historical and Aboriginal sites of significance are increasingly being visited by boat operators and these are potentially threatened by the lack of management and inappropriate visitation (Department for Planning & Infrastructure 2006). In order to ensure a sustainable industry, appropriate mechanisms will need to be in place to minimise impacts and maximise the benefits (Horstman & Wightman 2001b).

Expedition Cruise Operations: An Inventory

The following sections provide an overview of the expedition cruise operations along the Kimberley coast in 2006, including the type of vessels and operations, the tourism product marketed and the key sites accessed. A parallel project commissioned by Tourism Western Australia (TWA) further explores the target market examining demographics, key attractions and visitor experience. The focus of this inventory is on vessels which offer multi-day tours with focus on activities that include cultural and natural attractions. Thus this inventory does not include day excursions or fishing charters which also operate out of Broome, Derby and Wyndham.

Size and type of vessels

In 2006, a total of 30 vessels by 28 companies operated multi-day tours along the Kimberley Coast between Broome and Wyndham. Vessels ranged in type and size from fishing vessels (nine vessels of 12 to 23 metres in length) and sailing vessels (seven vessels of 12 to 55 metres in length) to motor cruise vessels (14 vessels of 20 to 103 metres in length). The fishing vessels offered lower cost tours targeting the fishing and adventure market and often required 'swags on deck' or beach camping for overnight accommodation. The sailing vessels offered relaxed explorer tours with frequent on-shore excursions and often highlighting culinary and service aspects, targeting the mid to high end of the tourism market. The exception to this was a hands-on sail training vessel which primarily attracts sailing enthusiasts at comparatively low cost. The majority of operations, nevertheless, were the luxury motor cruise vessels, most of which are purpose built to operate along the Kimberley coast to offer luxurious cruises with frequent tender and on-shore excursions, targeting the high-end tourism market.

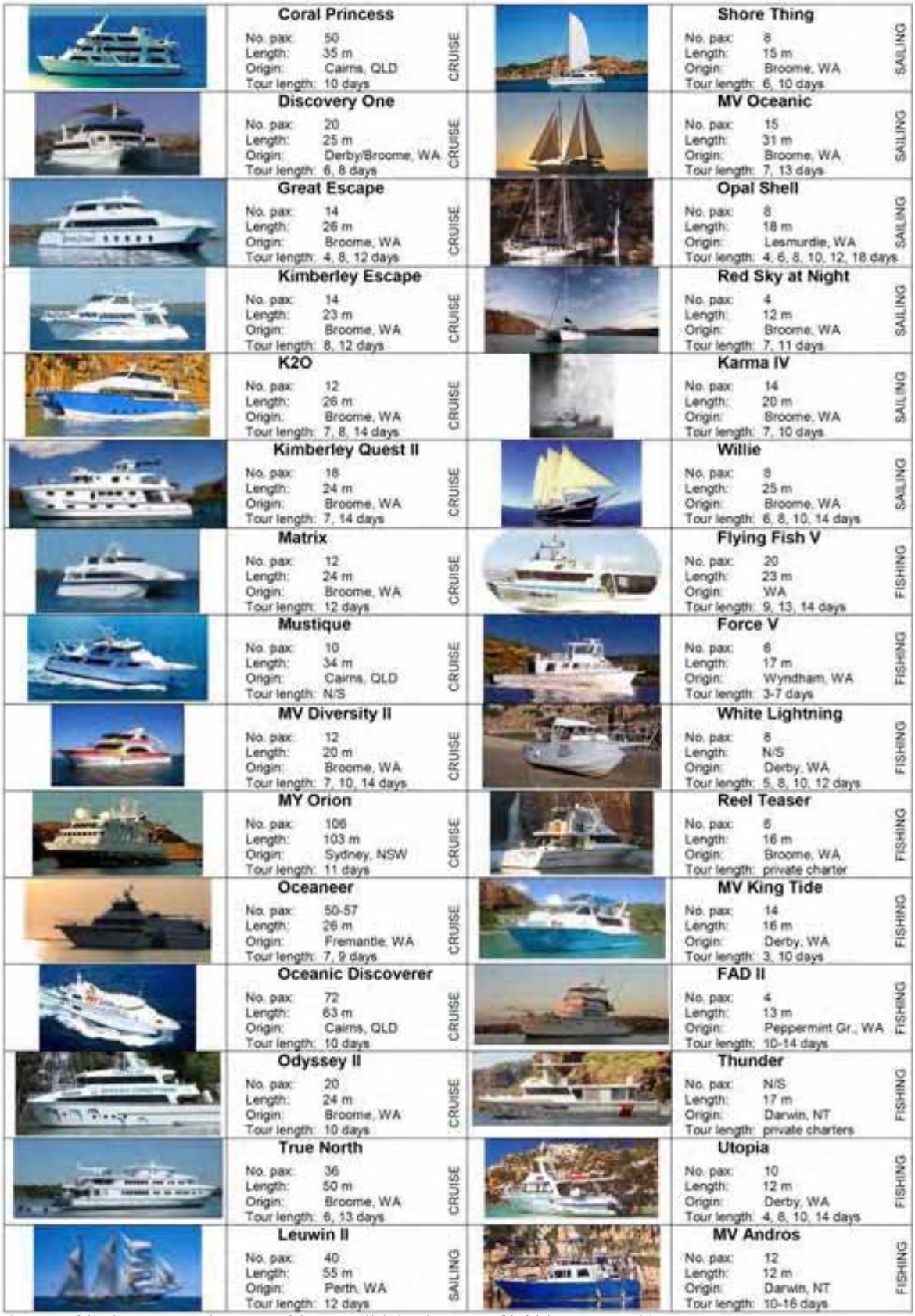
The number of passengers range from a maximum capacity of four up to 106. Fishing vessels have smaller passenger capacities, ranging from four to 20. Sailing vessels have a wider range of four to 40 passengers. The luxury cruise vessels, with the largest market share, have the largest capacities, ranging from ten to 106 passengers, with 50% of the vessels having a capacity of 20 passengers or higher (Figure 10).

Sixteen of the 30 vessels identified the number of crew aboard (four fishing vessels, eight cruise vessels, and four sailing vessels). Sailing vessels had the highest ratio of crew to passengers, with crew sizes ranging from two to 13. This represents an average ratio of two to three passengers per crew member. Fishing vessels had a range of two to three crew members for vessels with crew numbers identified, representing a range of three to seven passengers per crew member. Finally, cruise vessels had crew sizes from four to 68 for the largest vessel, a ratio of two to four passengers per crew member.

The length of tours offered by the operators ranged from three to 18 days (Figure 10). Sailing vessels offered tours ranging from four to 18 days in length. The most common length of sailing tour was six or seven days. Fishing tours range from three to 16 days. Ten days is the most common tour length offered, with some operators offering tours of an unfixed or variable duration, either as private charter, or with duration ranging from three to seven days, up to ten to 16 days. Cruises range from four to 14 days in length, with tours of fixed duration. Seven, eight and ten day tours were the most common. Cruises with longer tour duration were more frequently offered, with the average length being ten days.

All vessels operate at least one tender vessel which is used for river-based excursions or for accessing on-shore sites. Tender vessels range in type from dinghies (many of them purpose-built), zodiacs or inflatable rescue boats (IRBs) carrying up to eight passengers, to purpose-built excursion vessels carrying more than 20 passengers (Figure 12).

Two of the luxury cruise vessel operators market helicopter tours as part of their itinerary. The *True North*, operated by North Star Cruises claims to have the only full time helicopter on board for its passengers. The *Kimberley Quest II*, operated by Pearl Sea Coastal Cruises also markets helicopter activities and an onboard helipad. The *Great Escape*, launched in 2006, also has a helipad. A number of operators link with helicopter operators based on the Mitchell Plateau and use beaches as landing facilities rather than the vessel, to provide their clients with the opportunity of helicopter flights. Helicopter transfers are also frequently used for clients either commencing or terminating their expedition cruise journey at Mitchell Plateau and thus requiring connection to regional airports. The cost of these transfers is often included as part of the tour cost.



Source: www.fishingchartersnt.com; www.buccaneerseasafaris. com; www.kimberleycruises.com; www.flyingfishcharters.com.au; P. Scherrer; www.broome.stays.com.au; www.kimberleycharters.com.au; www.kimberleycruise.com.au; www.lookseatours.com.au; www.westernaustralia.com; www.northstarcruises.com.au; www.mustique.com.au; www.oceaneer.com.au; www.onetide.com; J. Schmiechen; www.kimberleyquest.com.au; www.reelteasercharters.com; www.unreeladventures.com; A. Smith; www.leeuwin.com; www.oceaniccruises.com.au; www.opalshell.com.au; www.williecruises.com.au; www.fadcharters.com.au; www.diversitycharters.com.au; www.charteroz.com; www.territorycharters.com.au.

Figure 10: Overview of the 30 vessels offering expedition cruise trips along the Kimberley coast in 2006

Information was sourced from brochures, web pages and personal communication with operators.

Figure 11: **Examples of types vessels operating along the Kimberley coast:** (a) the fishing vessel *Utopia*; (b) the sailing vessel *Shore Thing*; (c) the purpose-built luxury cruise vessel *Great Escape* (launched in 2006); (d) the sail training vessel *Leeuwin II*; and (e) the luxury cruise vessel *MY Orion*.

Figure 12: Types of tender vessels used by expedition cruise vessels along the Kimberley coast: (a) dinghy, (b) dory, (c) IRB, (d) purpose built excursion vessel. Note: Vessel identifiers have been removed on images.

Origin of operations

Out of the 30 vessels, 24 are based in Western Australia (20 Kimberley Region, 4 Perth/Fremantle) while six are based interstate (3 QLD, 2 NT, 1 NSW). Some of the larger luxury based vessels are operated and controlled by non-Kimberley based organisations which has both economic and management implications for the region (Department for Planning & Infrastructure 2006).

Licensing and accreditation

In December 2006, 18 of the 30 vessels were licensed by the Department of Environment and Conservation (DEC) to operate in Prince Regent and the Mitchell Regions. Two vessels hold tourism certification with Ecotourism Australia (EA), and 16 with the Tourism Council of Western Australia (TCWA). Nine of the 30 operating vessels were also members of the Kimberley Marine Tourism Association (KMTA).

Marketing and product

The marketing of expedition cruises in the Kimberley revolved around the theme of exclusivity, relating to both the natural environment and the on-board facilities and services. Operators used terminology such as 'last frontier', 'untouched', 'wilderness', 'pristine', 'isolation', 'wild and remote' in relation to the environment, while at the same time using expressions such as 'five-star luxury', 'finest dining', 'special indulgence' and 'unparalleled comfort and luxury' relating to their facilities and service, in the marketing of their product. The marketing of exclusivity was enforced by terminology such as 'adventure of a lifetime', 'once in a lifetime journey' and 'world's last great wilderness'. The fishing vessels predominately focused on themes such as 'untamed wilderness', 'secret fishing spots' and 'best game fishing in the world', while the luxury cruise vessels also highlighted facilities such as 'giant plasma screen', 'internet facilities', 'spa', 'air-conditioning' and 'finest dining in the world' while at the same time promoting the wilderness experience. Visitor book entries from two vessels primarily addressed 'the wonderful experience', with mention to the crew, scenery, fishing, camaraderie and fun. The activities promoted on the itineraries of the operators include walking/exploring, swimming, fishing, mud crabbing, oystering, visiting historical sites, viewing Aboriginal artwork, taking helicopter rides, climbing/abseiling, beach camping and examining flora and fauna (including bird watching).

With 30 operators in the region, many are using unique selling points to distinguish their product from the competition. These include the use (and ownership) of helicopters and/or having a helipad on the vessel, possession of state of the art technology on board (including internet, plasma TVs, DVD players), high levels of service and fine dining experiences, spa facilities, air conditioning and cuisine featuring local produce and seafood. Other less tangible points included fun, relaxation, indulgence, exclusivity, comfort, intimacy, privacy and luxury. Exclusivity and access to unique locations not known or accessed by other operators is a further selling point, as demonstrated by a recent article in *The Weekend Australian Magazine*. Some operators focused on longevity of their operation and experience as key selling points (as operators and as guides), as well as using symbolic quality descriptors, such as 'floating resort' and 'five-star'.

Fishing tours actively promote the quality of fishing and the facilities available to support the activity, as well as emphasising the natural beauty of the landscape (pristine wilderness) and the remoteness of the destination. Some operators promote secret fishing spots and good catches. Sailing vessels place strong emphasis on hands-on adventure and eco tours. Cruise vessels focused on a range of images including indulgence and relaxation, as well as cultural and natural heritage, and the unexplored wilderness of the landscape.

The target market for smaller sailing vessels is the over 30s and baby boomers. Fishing tours are marketed in a more gender specific manner. Four of the nine fishing vessels target males with a keen interest in fishing. Two operators target keen anglers in general, and the remaining three operators target age groups over 20 years, including baby boomers and retirees.

Cruise vessels have a wider target market, attracting passengers from 20 years and include baby boomers and seniors. One vessel targeted a market between 20 and 40 years of age, with the remainder targeting passengers over 30 years of age, with one operator targeting the seniors market. Two operators deliberately target couples, and one operator targets older families (families of baby boomers). Only one operator targets a non age related group, identifying adventure tourists as its target market.

As a marketing strategy, pricing is related to the level of services and amenities on board the vessels, and also linked with the age of the target market. Fishing vessels, with similar amenities and target markets, vary little in pricing. Sailing vessels' prices range according to the passenger capacity of the vessel, and the target age group. Vessels attracting younger passengers have lower prices in comparison to sailing vessels attracting passengers over 30 years and baby boomers.

Pricing for tours operating in the region range from $238 per person per day on a sailing vessel, up to $1832 pp/day on a large luxury cruise vessel (three operators with prices unspecified). Sailing vessels had the widest range of prices, $238 to $1193 pp/day. The lowest prices per person per day were available on the largest sailing vessels, while the highest prices per person per day were for the

smallest vessel. One operator identifies a daily rate for the boat at $1250 per day with a passenger capacity of 15 (approx. $83 per person). Fishing charters have the lowest average price range of $508 to $600 pp/day. The operators charging a daily rate for the use of the vessel range in price from $2600 to $4500 with a passenger capacity of six. Luxury cruise vessels have the highest prices ranging from $415 to $1832 per person per day. The larger luxury cruise vessels attract the higher daily rates, often identifying a price range based on the range of accommodations provided.

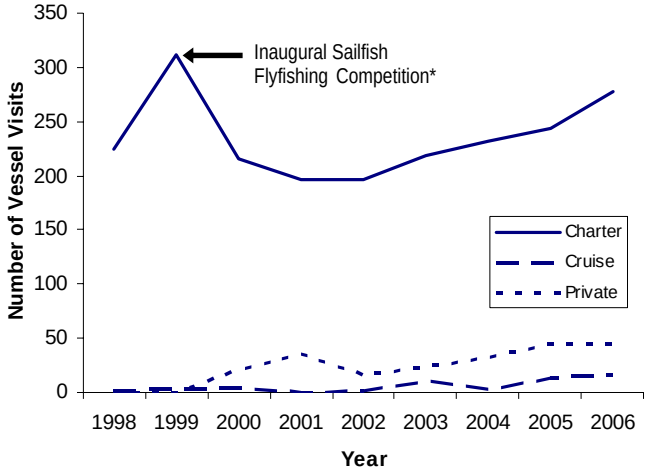
Cruise vessels have a larger amount of price variation, and the higher prices compared to fishing and sailing vessels in the region. The variance in the level of services and amenities in this sector is high, causing such large price differences. Vessels targeting the young and seniors age groups have the lower prices, whereas vessels targeting over 30s and baby boomers are more likely to use optimum prices. However, there is a mid range of prices for the over 30s market. Also, many of the larger cruise vessels offer a range of prices dependent on the range of accommodation available. Premium pricing is attributed with the vessels using marketing images such as luxury, exclusivity, fine dining, service, comfort, and indulgence.

Industry development

Operators and other stakeholders repeatedly raised the issue of the growth in the number of operators and the size of vessels. Another factor is the potential growth in the number of trips offered by operators in a season. The review of vessels currently operating, nevertheless, also showed that a number of vessels that previously offered expedition cruise trips were no longer offering trips in the area in 2006. Some vessels have been sold, one of which is now operating off the Queensland coast, while several other vessels have either ceased operations fully, have moved elsewhere or are contracting to other industries. To provide an overview of industry growth over time, records from the ports in Broome and Wyndham, from operator logbook data collected by the Department of Fisheries, and aerial surveillance data from customs were requested. The following sections review the data released.

Vessel visits to Broome Port

Broome Port keeps records of the number of vessels visiting the port. These records are categorised by vessel type/use and include the categories charter, cruise and private. In the context of this report, the category 'charter vessels' encompasses all but the largest of the expedition cruise vessels discussed. The largest vessel would be in the 'cruise vessel' category. The number of charter vessel visits to Broome Port over the last five years have increased from 197 in 2001 to 278 in 2006 (Figure 13). The current level is still lower, nevertheless, than the number of berthings in 1999, when charter vessel visits peaked at 312. This peak coincides with the 'Inaugural Sailfish Flyfishing Competition' which attracted a large number of fishing charter vessels but is not likely to have affected the number of expedition cruises (R. MacCulloch, pers. comm. 2007).



Yearly Vessel Visits to Broome Port 1998-2006			
	Charter	Cruise	Private
1998	225	1	0
1999	312	3	0
2000	215	5	20
2001	197	0	35
2002	197	2	16
2003	218	10	23
2004	232	3	33
2005	244	13	44
2006	278	16	44

Figure 13: Yearly number of vessel visits to Broome Port from 1998 to 2006

(Source: Broome Port Authority). *Please note that the strong peak coincides with the Inaugural Sailfish Flyfishing Competition, which attracted a large number of charter vessels to Broome in 1999 which were unrelated to expedition cruise activities.

Many of the smaller vessels rarely dock at Broome Port but conduct fly-in fly-out operations to transfer their clients. Thus Figure 13 mainly represents port visits by the larger vessels and may not be fully representative of the overall growth in the number of expedition cruise vessels. There has also been a steady increase in vessel visits by cruise liners, with an all-time high of 16 visits in 2006. Apart from the *MY Orion*, which runs expedition cruises along the Kimberley coast, these figures include visits by larger cruise vessels such as the *Royal Viking Sun*, *Nieuw Amsterdam*, *Norwegian Star*, *Crystal Symphony*, *Delphin*, *MS Volendam*, *Superstar Virgo*, *Pacific Princess*, *Silver Cloud* and the *Europa* (Broome Port Authority 2004, 2007). There has also been a gradual increase of private vessels berthing at Broome Port. The monthly pattern of vessel visits to Broome Port highlights the seasonality of the operations, with a strong lull during the wet and cyclone season (Figure 14).

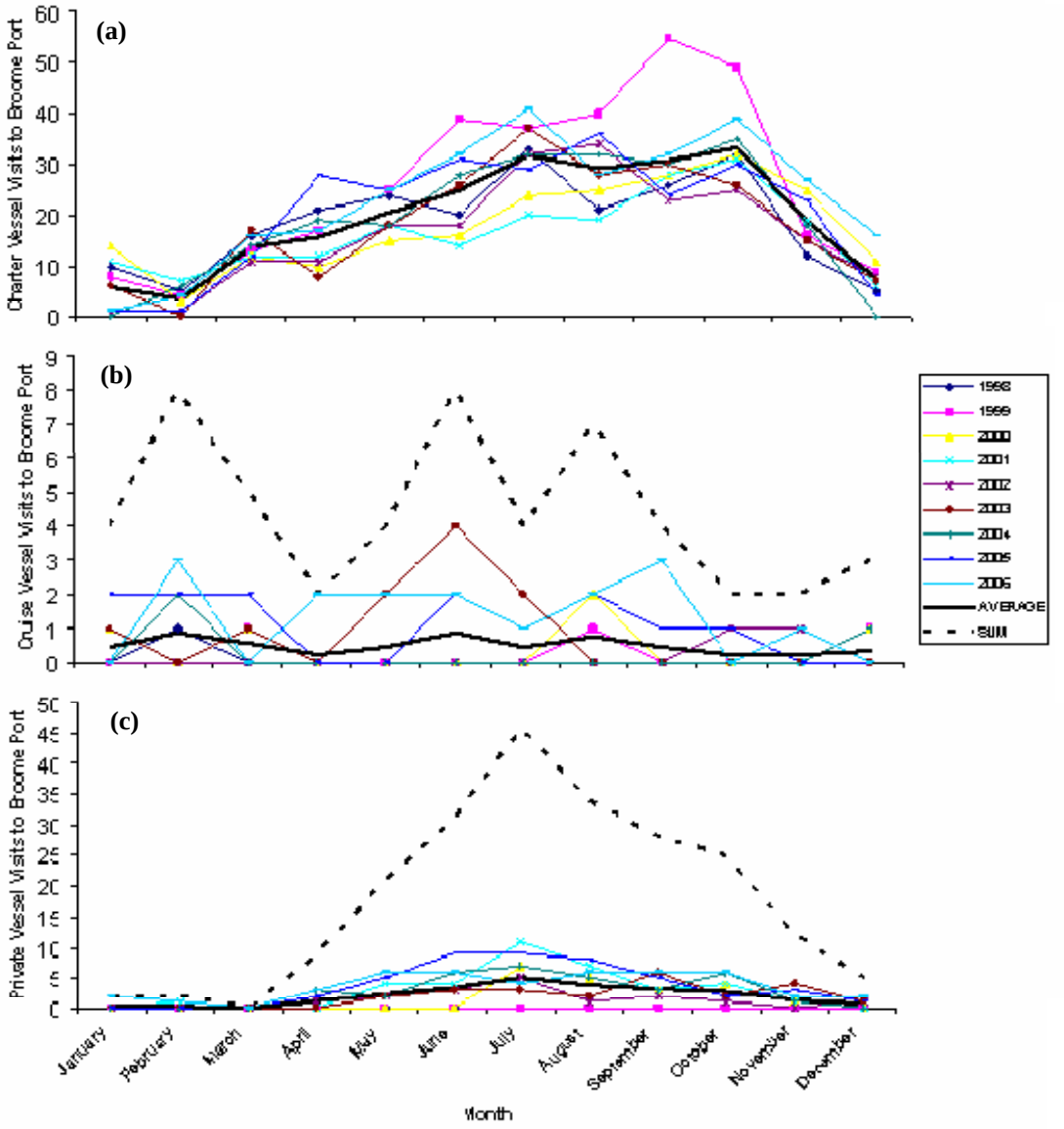


Figure 14: Monthly number of (a) charter, (b) cruise and (c) private vessel visits to Broome Port from 1998 to 2006
(Source: Broome Port Authority).

Both charter and private vessel visits to Broome port were highest around July, the peak of the tourist season for the area. In addition to visits mid year, cruise liners also visited the port in February (Figure 14).

Charter operator logbook data

There are three licences administered by the Department of Fisheries (DoF) relevant to commercial tour operators along the Kimberley coast: the Restricted Fishing Tour Operator's Licence, the Fishing Tour Operator's Licence and the Aquatic Eco-tour Operator's License (cf. Chapter 6). In 2006, 20 out

of the 30 operating expedition cruise vessels held a Fishing Tour Operator's Licence. An additional three vessels held a Restricted Fishing Tour Operator's Licence, while six vessels could not be linked to a licence. The DoF requires licensed tour (charter) operators to submit a daily activities logbook every month, which records the number of passengers aboard the vessel, key activities (categorised as fishing, diving, snorkelling, wildlife observation and sightseeing), the amount of time spent on each activity and the location of the activities. The data is entered into a database that is maintained by the DoF. This data could provide an overview of activity 'hotspots' and tourism activities and could be used to address current concerns by stakeholders, government agencies and Traditional Owners about the spatial patterns of expedition cruise operations. Nevertheless, the Fisheries Resources Management Act 1994 (WA) prevents the Department from releasing most of this data to other government agencies or the public.

The following section reports on data extracts provided by the DoF on the total number of tours (for all activity types, which includes fishing, diving, snorkelling, wildlife observation and sightseeing) reported by tour operators between Broome and the Northern Territory border (excluding inland data). The number of tours experienced a gradual increase between 2002 and 2005 (Figure 15) and has strong seasonal variability, with only very few tours (mainly fishing charter trips) conducted during the cyclone and wet season (Figure 16). The main activity reported from the logbooks is fishing, followed by sightseeing and wildlife observation (Figure 17).

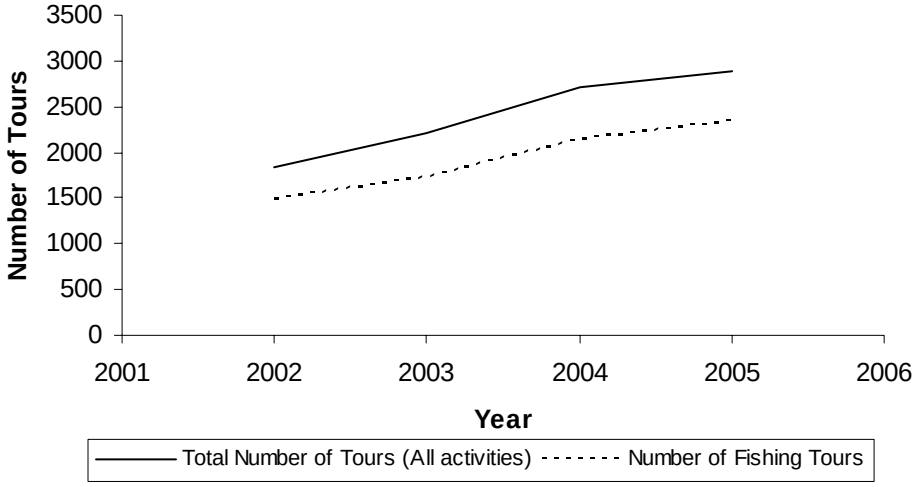


Figure 15: Yearly number of tours reported by tour operators between Broome and the Northern Territory border to the Department of Fisheries

(Source: Department of Fisheries)

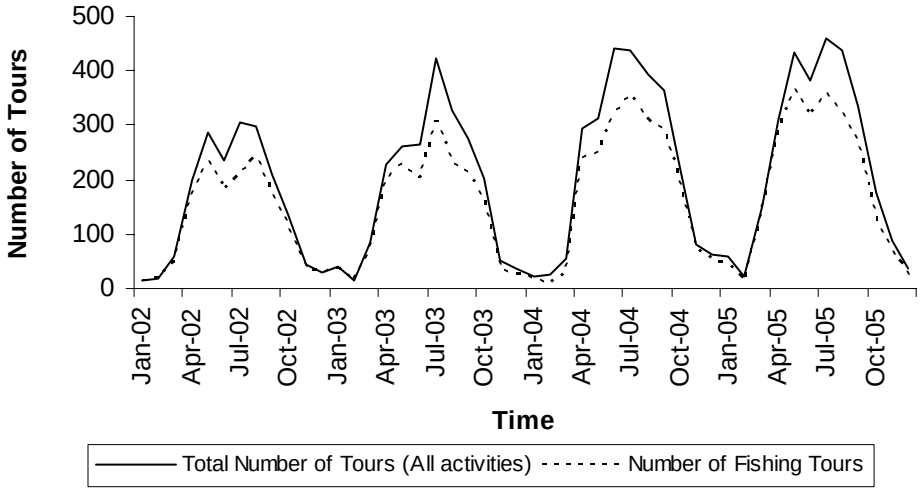


Figure 16: Monthly number of tours reported by tour operators between Broome and the Northern Territory border to the Department of Fisheries

(Source: Department of Fisheries)

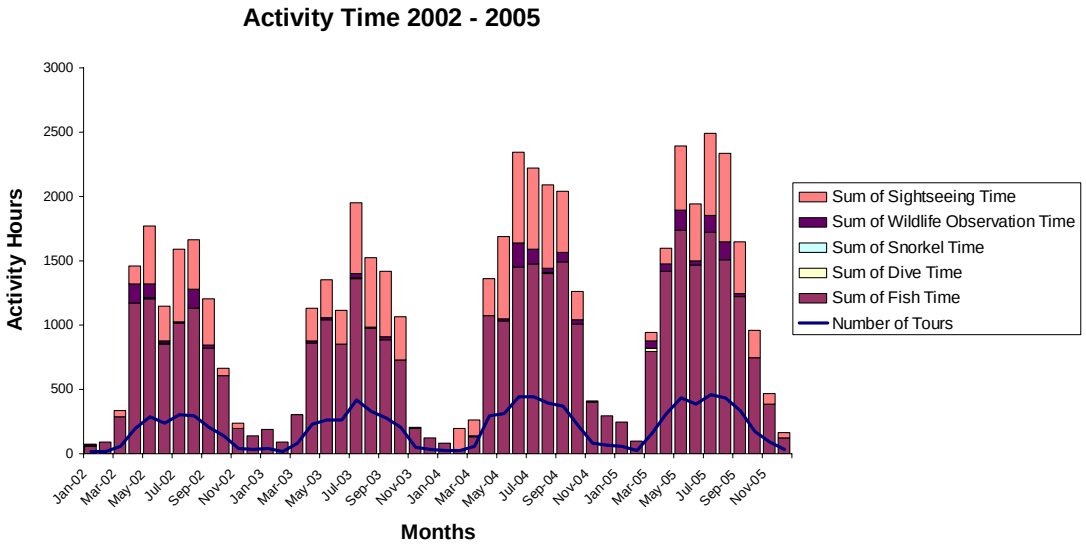


Figure 17: Monthly number of hours spent on different activities on tours between Broome and the Northern Territory border as reported by tour operators to the Department of Fisheries

(Source: Department of Fisheries)

Customs data

The Border Control Unit, a section of the Federal Department of Customs, conducts frequent aerial surveys of the Kimberley coast for the main purpose of locating and identifying illegal activities in Australian waters. Surveys identify vessels by type and include the categories charter vessels and yachts. To maintain confidentiality of the number, time and frequency of surveillance flights, data was normalised providing the final measure of monthly vessel sightings / flight hour (Figure 18).

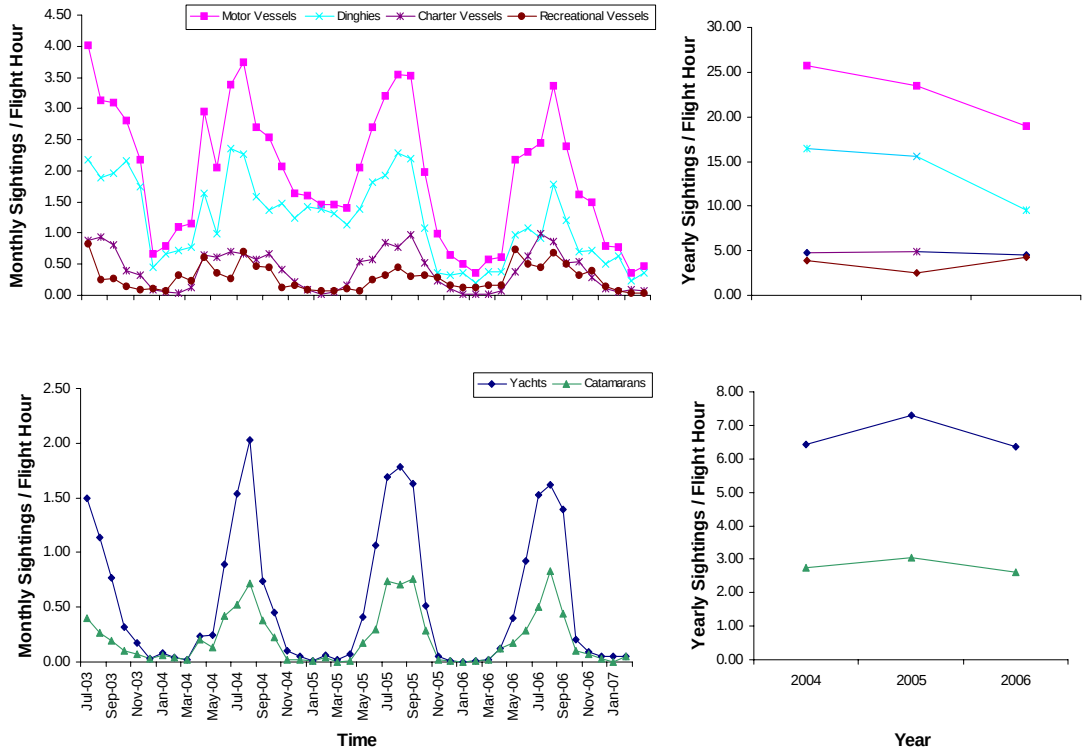


Figure 18: Vessel sightings along the Kimberley coast between Broome and the Northern Territory Border: (a) monthly data, and (b) yearly data

(Source: Department of Customs)

Data from the last three years was provided and while monthly data showed a seasonal pattern similar to the data provided by the DoF, the overall trend in the number of motor vessels and dinghies decreased with time which is in contradiction to data from operator logbooks, Broome Port and anecdotally on the number of operators and tours conducted. Thus, the identification and categorisation of vessels sighted, as currently occurring, may not be a reliable indicator on longer term trends in private or charter vessels or the frequency of survey flights may be insufficient to provide a reliable estimate of actual vessel numbers. Without access to the full definitions used for categorisation and/or the raw data, other avenues may need to be pursued to obtain reliable data on vessel traffic and long-term trends in the number of vessels along the Kimberley coast.

Tourism hotspots

The majority of expedition cruise vessels explore the area north of Cape Leveque to the Mitchell Plateau, with fewer vessels frequenting the area between the Mitchell Plateau and Wyndham (Figures 19–22, Table 5). The airstrip at the Mitchell Plateau and the stationed light aircraft and helicopters provide connectivity to the major centres at Broome and Kununurra. A number of key sites are visited regularly by most expedition cruise vessels, while a few sites are less frequented and may only be visited by one or a few operators (Table 5, Figure 19).

Sixteen of the 30 identified operators provided detailed itineraries including the dates and locations of sites visited. The following section provides an analysis of these itineraries, with respect to sites, to highlight potential visitation overlaps and identify sites with high visitation rates. There are a number of limitations to be considered when reviewing the following analysis. Some itineraries are more specific than others in terms of area thus limiting comparison. For example, many itineraries include a visit to Talbot Bay, while fewer specify Horizontal Waterfalls which is in Talbot Bay and the main attraction to the area. Itineraries are flexible to account for tidal variations, weather conditions and/or passenger interest and some operators communicate with other vessels in the vicinity to limit overlap at sites. Further, 14 out of the 30 operators did not have a detailed itinerary and thus the below values are likely to be an underestimate.

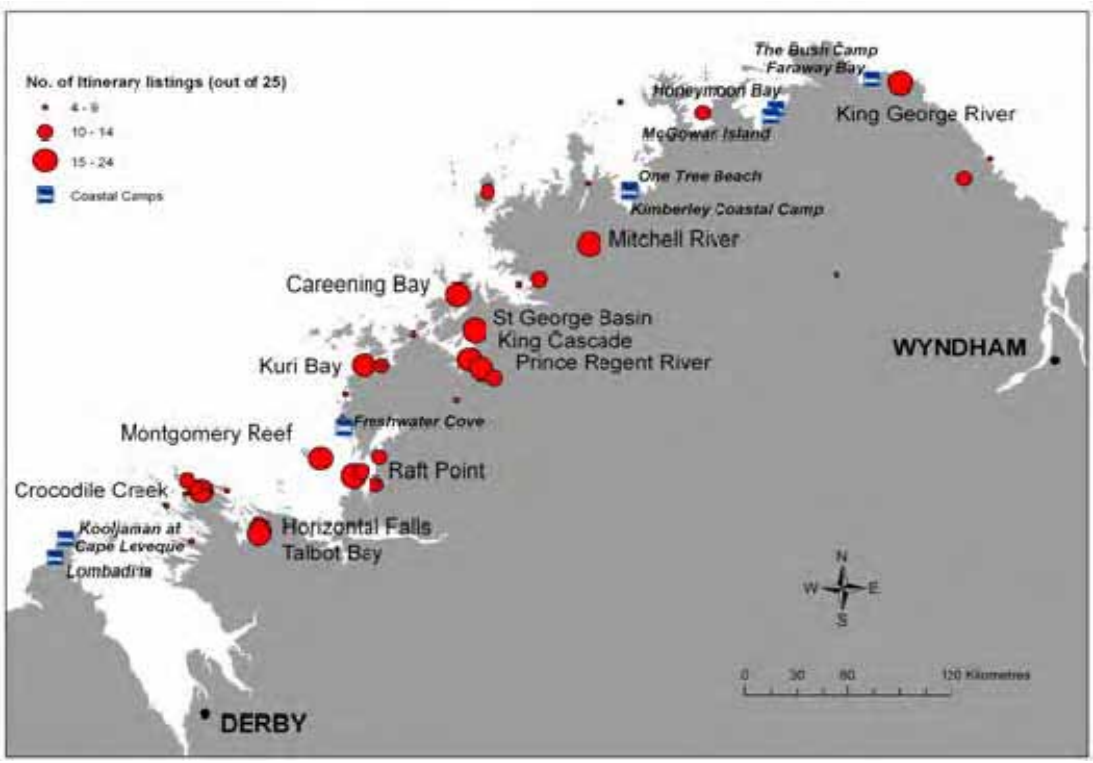


Figure 19: Location of coastal camps and overview of the most often visited sites visited by expedition cruise tours mapped by frequency of listings in 25 vessel itineraries operating along the Kimberley coast during 2006

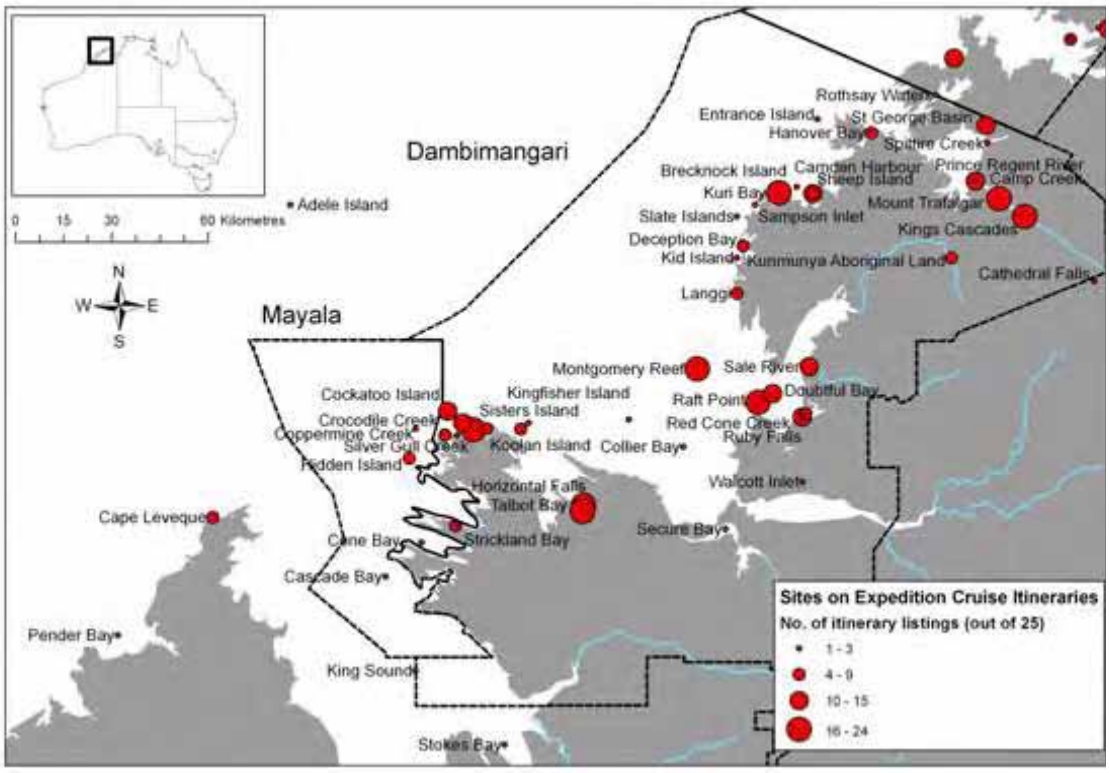


Figure 20: Map of tourist sites accessed by expedition cruise vessels in Mayala and Dambimangari country

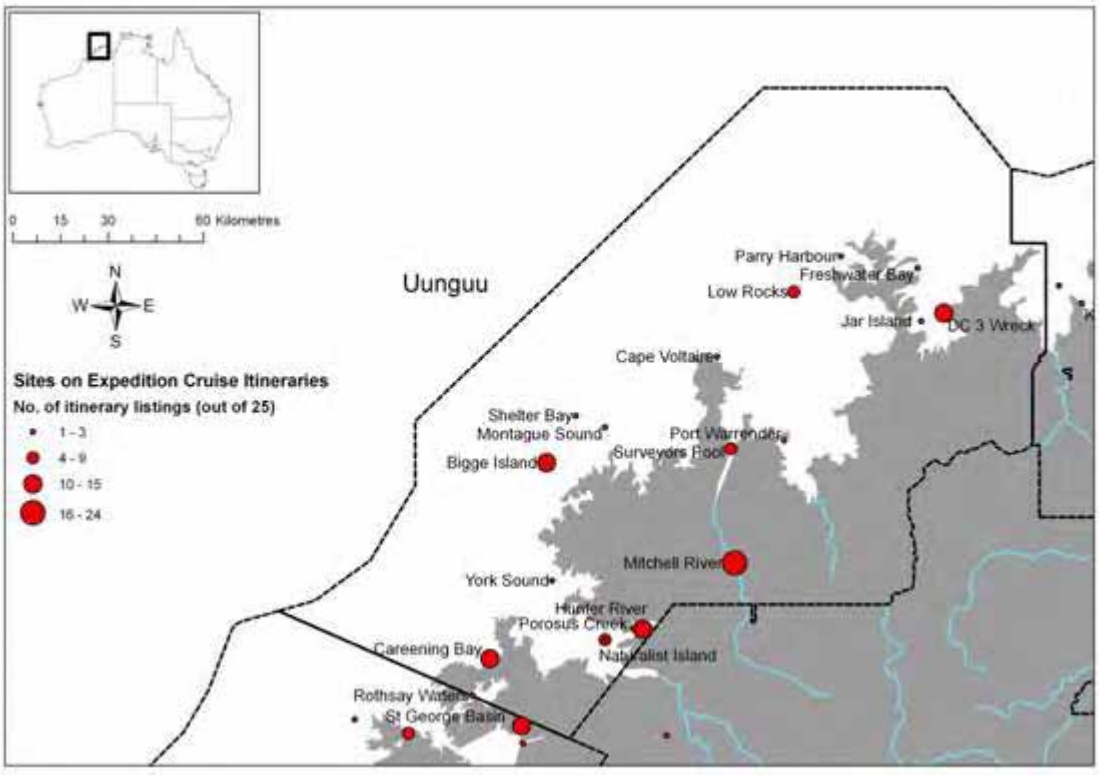


Figure 21: Map of tourist sites accessed by expedition cruise vessels in Uunguu country

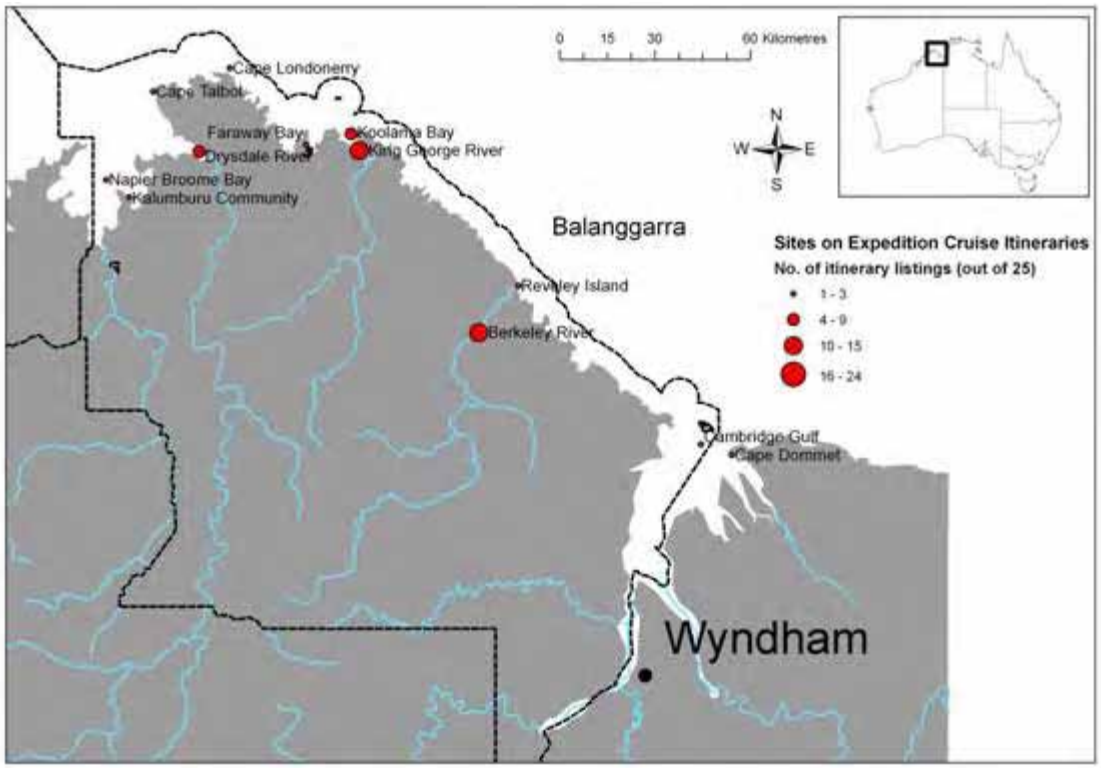


Figure 22: Map of tourist sites accessed by expedition cruise vessels in Balanggarra country

During the peak season of operations, it was common for more than one vessel to be scheduled to visit the same site on the same day. Peak visitation occurred during July to September, where the incidence of multiple vessels at sites was most likely to occur.

The most crowded site was Montgomery Reef, with five vessels scheduled to visit this site on the 9th of August. Other sites with four scheduled vessel visits within one day included Talbot Bay (3rd, 13th, 16th July, 7th August) and specifically Horizontal Waterfalls (3rd July), Sale River (4th July), Prince Regent River (23rd August) and specifically Camp Creek (22nd September) and King Cascades (22nd September).

Horizontal Waterfalls, Montgomery Reef, Mitchell River and Falls, King George River and Falls, Broome, Ruby Falls, Collier Bay, Silvergull Creek, Careening Bay, Bigge Island, Prince Regent River, Raft Point, Vansittart Bay, St George Basin, King George River and Falls, Camp Creek, King Cascades, Derby, Crocodile Creek, Yampi Sound, and Sale River are all sites that had at least one day during the period March to November 2006 where three vessels were scheduled to visit.

The most scheduled site was Talbot Bay with 178 scheduled visits between March and November. This included nine days where three or more vessels were scheduled to be at the site. Specifically, the most frequently visited site was Horizontal Waterfalls, with visits of one or more vessels scheduled for 126 days of the March to November period (52%).

An analysis of advertised itineraries highlighted the strong shore based component of expedition cruises.

Figure 23 lists the key activities made available during expedition cruise excursions (see also Table 5). Activities revolved around the natural and cultural resources and qualities of the region and access to sites mostly involved a component of walking or tender travel. Swimming in freshwater pools, fishing and visitation of Aboriginal Art and historical sites formed a key part of the vast majority of expedition cruise itineraries (Figure 22 and Table 5).

Market trends

Currently the main market is well-off retirees. Anecdotal evidence points to expected growth at both ends of the market with: (1) an upcoming influx of smaller boats less focused on luxury experiences from southern markets for the March to October period; and (2) a strong interest of larger cruise vessels and plans for vessels entering the top luxury market.

Table 5: Sites ranked by the number of listings by different vessels on their itineraries. Out of the 30 vessels identified, only 25 provided an itinerary (thus the maximum number of listings is 25).

Number of itineraries site is listed as destination (out of 25)	Site	Values / Attractions / Activities: Reef	Rock art	Burial site	Ceremonial areas	Historic	Walking	Picnic	Climbing	Swim at waterhole	Scenic	Waterfalls	Caves	Rainforest	Camping	Wildlife spotting	Mudcrabbing	Oystering	Fishing	Scuba diving	Helicopter	Tender	Memorabilia	Freshwater	Anchorage	Fuel depot	Airstrip	Pearl Lease	Resort	Lighthouse	Mining	Squatters camp
24	Montgomery Reef	y			y														y		y	y			y							
21	King Cascade					y		y	y	y									y		y				y							
20	Crocodile Creek						y			y													y	y		y							
20	Horizontal Falls, Talbot Bay									y	y											y			y							
20	Raft Point		y				y								y							y			y							
18	Prince Regent River										y								y						y							
18	Talbot Bay																		y						y							
17	Kuri Bay																	y	y													
17	Mitchell River									y	y					y			y		y	y			y							
15	Careening Bay	y															y		y						y							
15	King George River					y	y																	y	y							
15	St George Basin						y		y	y	y	y						y	y						y							
14	Doubtful Bay						y			y					y				y			y										
13	Bigge Island														y			y														
13	Camp Creek						y	y		y	y														y							
13	Yampi Sound		y	y																					y							
12	Camden Harbour																								y	y	y			y		
12	Cockatoo Island									y												y										
12	Ruby Falls					y			y						y																	
11	Berkeley River		y							y	y								y			y			y							
11	Hunter River						y						y				y		y						y							
11	Sale River									y		y				y			y						y							
10	Vansittart Bay					y																										
9	Koolan Island																		y						y					y		
8	Cape Leveque															y																
8	Lacepede Islands						y			y																						
8	Surveyors Pool, Mitchell River							y		y											y											
7	Kunmunya Aboriginal Land																															
7	Whirlpool Passage						y			y												y										
6	Koolama Bay										y													y	y							y
6	Silver Gull Creek					y													y						y							
5	Drysdale River														y			y	y						y							
5	Hidden Island						y			y					y										y							
5	Low Rocks						y			y						y									y							
5	Silica Beach, Hidden Island						y				y	y							y			y			y							
5	Strickland Bay						y			y	y														y							
4	Coppermine Creek					y					y							y	y			y			y							
4	Deception Bay									y									y													
4	Hanover Bay										y								y						y							
4	Langgi															y						y			y							
4	Naturalist Island, Hunter River					y																			y							
4	Red Cone Hill						y				y							y	y						y							
4	Sheep Island																															
4	Brecknock Island																															
3	Cambridge Gulf																															
3	Cape Voltaire					y	y																		y							
3	Collier Bay																															
3	Cone Bay		y															y	y						y			y				
3	Freshwater Bay					y	y																									
3	Hells Gate																															
3	Jackson Falls						y			y																						
3	King Sound																		y													
3	Mount Trafalgar					y													y						y							
3	Prince Frederick Harbour														y				y					y	y							
3	Sampson Inlet						y																									
3	Tranquil Bay																y		y													
3	Cape Londonerry														y																	
2	Edeline Islands					y																										
2	Faraway Bay																								y							
2	Leadline Creek																		y													
2	Montague Sound																															
2	Myridi Bay																		y													
2	Napier Broome Bay																															
2	No Name Creek						y												y													
2	Roe River														y																	
2	Rothsay Waters											y													y		y					
2	Adele Island																		y													
1	Bower Bird Beach																															
1	Cape Dommet															y			y						y							
1	Cape Talbot																															
1	Cascade Bay																															
1	Cathedral Falls														y										y							
1	Eagle Falls														y																	
1	Entrance Island										y														y							
1	Gibbings Island																		y													
1	Jar Island										y					y			y													
1	Kalumburu Community										y						y								y							
1	Kid Island																	y	y						y							
1	Kingfisher Island																															
1	Kruigin River Waterfalls																															
1	Munster Water																															
1	Parry Harbour		y																													
1	Pender Bay																								y							
1	Porosus Creek																								y							
1	Port Warrender																		y													
1	Red Cone Creek																															
1	Reveley Island		y												y										y							
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1	Shelter Bay		y																						y							
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1	Slate Islands																								y							
1	Spitfire Creek																															
1	Stokes Bay										y																					

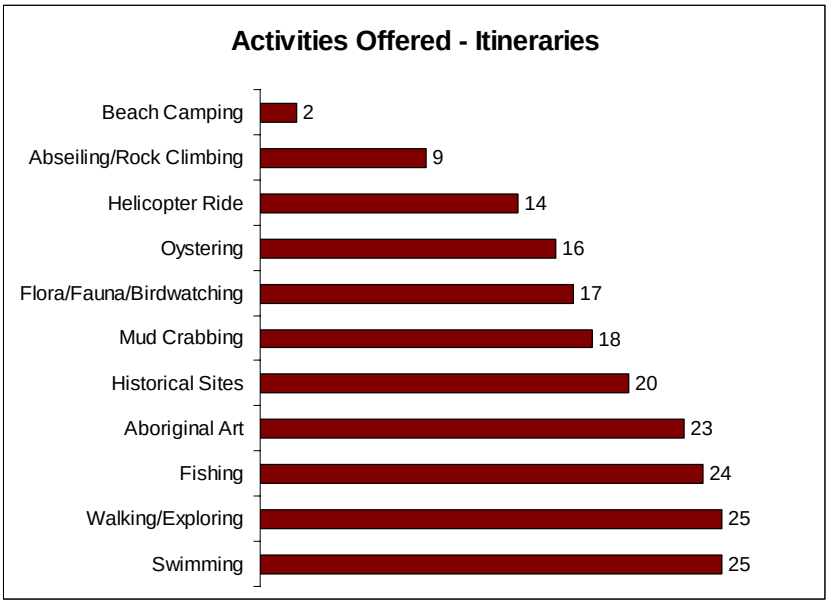


Figure 23: Itinerary activities advertised by expedition cruise operators for tours between Broome and Wyndham

Expedition Cruise Tourism and Other Coastal Activities

Interest in the Kimberley region has grown dramatically in the last couple of years, and tensions are increasing between the different interest groups as shown by the commencement of an advertising campaign to protect the Kimberley coast by environmental and tour operator groups against oil and gas exploration activities (Australian Broadcasting Corporation 2006). While Traditional Owners have lodged native title claims over much of the area, the DEC is considering the development of a representative marine reserve system for Western Australia, which would likely include sites along the Kimberley coast. The cruise charter industry is growing, as is interest from recreational boating and fishing groups, and there has been an increase in activities by the minerals and oil industries. The recent push towards further exploration and development of extractive industries for resources with plans for three gas processing plants has resulted in growing fears by the marine tourism industry that such developments could harm marine tourism (Australian Broadcasting Corporation 2006)(ABC TV News, 14 December 2006, Broome Protest). Such development is also attracting increasing attention by other industries such as pearling, conservationists, government and Traditional Owners due to concerns about the potential effects of such development on the area and other existing industries. Today, the route of most Kimberley expedition cruises takes them past several pearling leases such as Kuri Bay and past the mining operations on Cockatoo and Koolan islands (Figure 25)

The pearling industry is well established in the Kimberley. It started in the late 19th century when the shells of wild oysters, *Pinctada maxima*, were collected for their mother of pearl. In the 1950s, the cultured pearl industry started and has grown into a multimillion dollar industry, with pearl farm leases spread out along the Kimberley coast utilising the safe natural harbours and unpolluted waters. The industry is regulated by the WA Department of Fisheries which is responsible for issuing pearl farm leases, hatchery licences and pearling licences, and overseas the activities of pearling companies.

Commercial mining in the Kimberley began in the 1900s with the opening of an iron ore mine at Cockatoo Island (16° 05' S, 123° 37' E) in the Buccaneer Archipelago to explore one of the highest grade iron ore bodies in the world. The mining company BHP (now BHP Billiton) built a complete township accommodating 850 people and operated the mine until the early 1980s when the ore body had been mined to sea level (Trott 1984). During the 1980s, the old mining village was transformed into a high class tourist resort, but was closed in 1990. In 1993, Portman Mining re-commenced mining operations at Cockatoo Island.

In 1965, BHP expanded its iron ore mining operations to the neighbouring Koolan Island. Mining operations ceased at Koolan Island in 1993 and subsequently the wharf and all buildings were removed in 1994. In 2000, Aztec Resources secured the exploration lease at Koolan Island and has recently commenced operations in an agreement with the Traditional Owners of the area.

Expansion of these industries could considerably affect the cruise industry through their impacts on

the visual amenity of the area. Past tensions between tour operators and the pearling industry have lead to a memorandum of understanding between the industries. Anecdotal evidence of past and current activities suggest that the expansion of mining and pearling activities could also result in improved access to areas and increased services, potentially leading to an increase in recreational vessel traffic and visitation to on-shore sites (Figure 24). For example, one site at Crocodile Creek has been significantly modified by miners visiting for recreation with site hardening and the building of a shelter (Figure 24). Another attraction visited by some operators is a squatters residence at Silvergull Creek, which utilises a former water lease by a mining company and is now permanently inhabited by two people (Figure 24). There are further squatters camps at Coppermine Creek, Dog Leg Creek, Cone Bay, Seaplane Bay/ Atlantis Bay, Alligator Camp and One Tree Beach (Figure 25). There is potential for the introduction and spread of weeds and feral animals from mine sites and squatters camps to previously isolated island environments as a result of recreational activities.

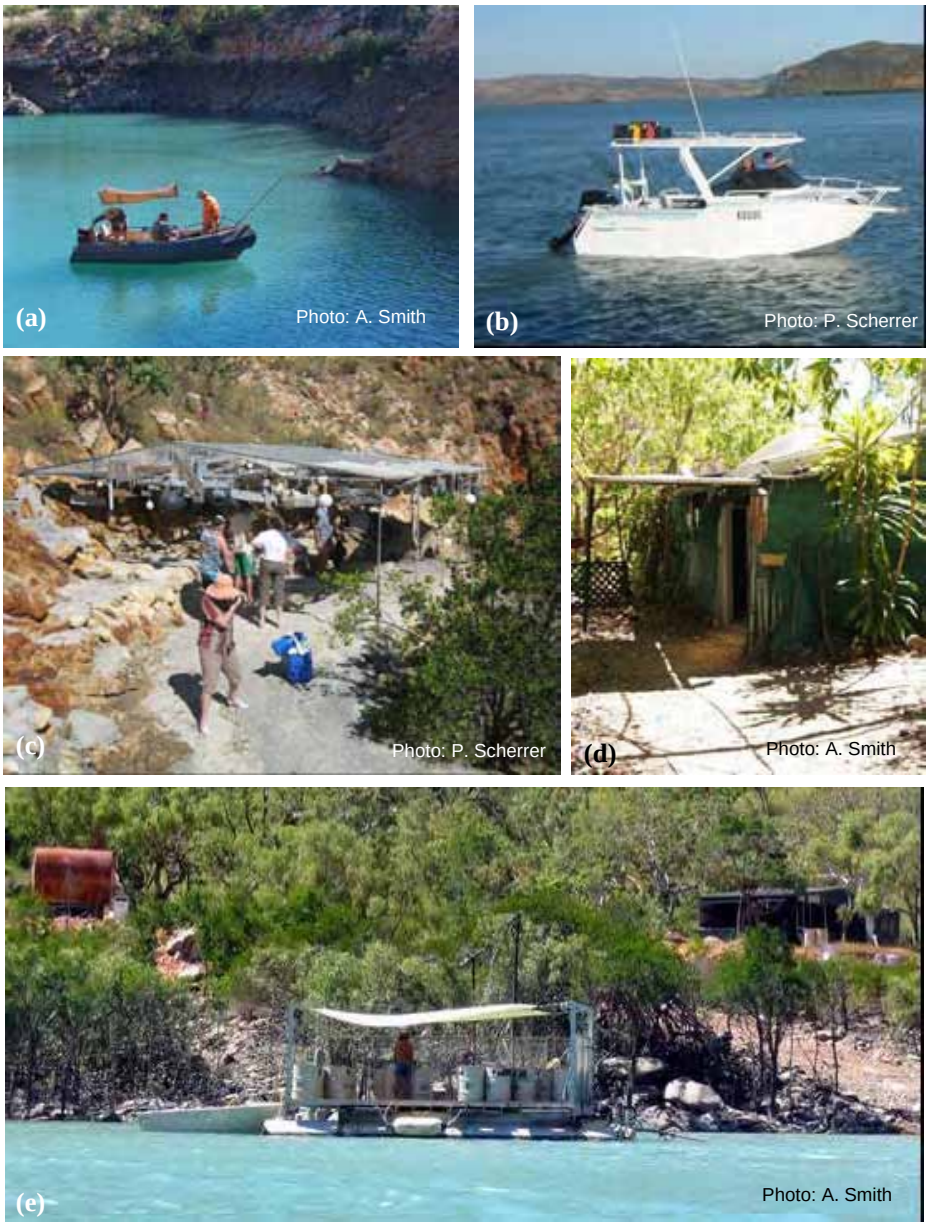


Figure 24: Other activities: (a) and (b) private recreational vessels, (c) shelter at Crocodile Creek, (d) squatters residence at Silvergull Creek, and (e) fuel supply barge at Dogleg Creek.

Improved services (such as access to provisions and fuel) could lead to small vessels being able to travel further and for longer than previously, as they could stock up on supplies along the way. Similarly, the provisioning of squatters camps could become easier. The establishment of a fuel barge at Dogleg Creek near Koolan and Cockatoo Islands (Figure 24 and Figure 25) has provided a refuelling opportunity to smaller vessels with limited fuel storage capacity and according to several operators has considerably extended the activity range and number of smaller vessels northwards.

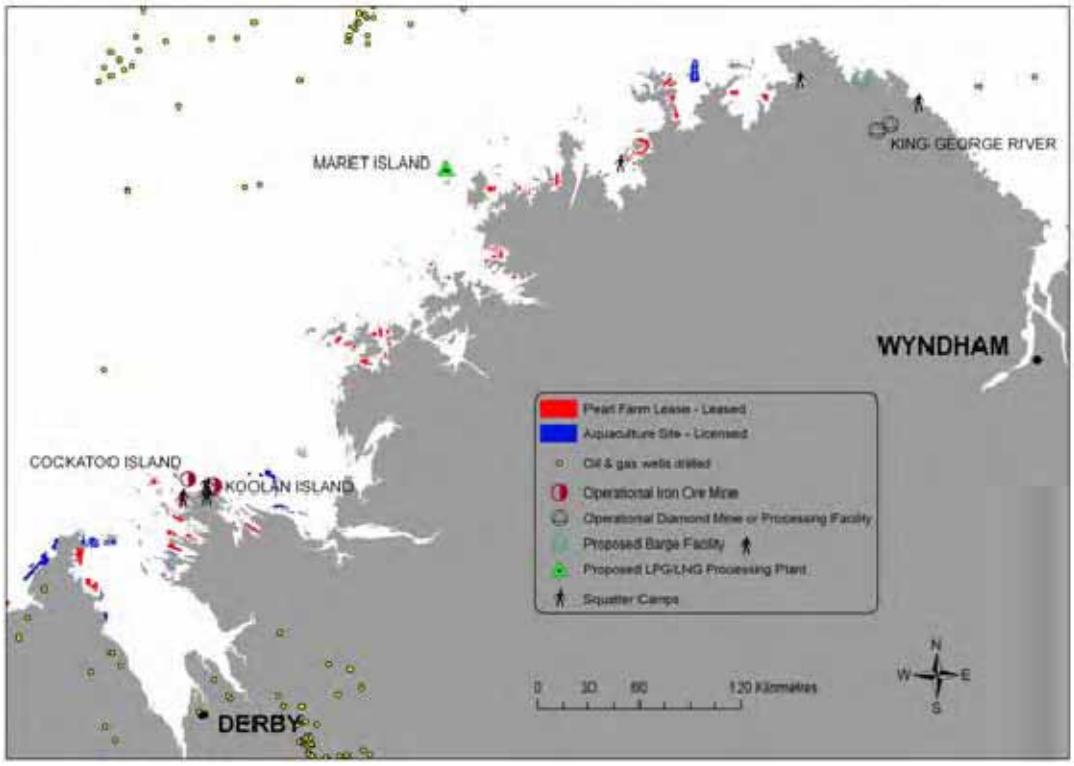


Figure 25: Location map of pearling and aquaculture leases, mines; gas and petroleum wells and squatters camps

The following chapter provides a review of current and potential environmental and cultural impacts of expedition cruising. Following a literature review summarising the main issues, Chapter 5 presents the findings from biophysical monitoring of selected sites, site visits with Traditional Owners and observations of visitor behaviour and management during river, sea and shore based excursions from the main vessel.

Chapter 5

CURRENT AND POTENTIAL ENVIRONMENTAL AND CULTURAL IMPACTS OF EXPEDITION CRUISING

Cruising, recreational boating activities and charter operations are on the rise in many coastal areas around the world, particularly in Australia (Dowling 2006; Warnken & Leon 2006). Cruising and boating activities can have ecological, social, cultural and economic impacts on an area. As the industry continues to grow, the density of operations increases and activities intensify, impacts which may have been barely noticeable at first can become serious concerns for the sustainability of the activities (Warnken & Leon 2006).

The first part of this chapter provides an overview of some of the key impacts of cruising, boating and associated activities as identified in the current literature. It also reflects some of the attitudes towards regulation as seen by the scale of breaches, and the difficulties of enforcement and measurement of impacts given the mobile and often remote nature of activities. Although some of the literature reviewed focuses on cruise vessels much larger than currently operating along the Kimberley coast, many issues similarly apply to smaller vessels and can only gain in relevance for the Kimberley with the current trend of increasing vessel size and vessel numbers (c.f. Chapter 4). This trend towards more and larger vessels visiting the Kimberley coast is likely to continue, as the cruise industry continues to diversify such as through the development of the boutique cruise market (Dowling 2006) and as interest by cruise liner companies in the Kimberley area appears to be on the increase (R. Quartermain, pers. comm. 2006).

The second part of this chapter reports on the results of this study from visitor observation trips, consultation with Traditional Owners and rapid assessment of biophysical factors at selected on-shore sites along the Kimberley coast.

Cruise Ship and Boating Impacts – A Worldwide Perspective

Marine pollution, waste disposal and general degradation from tourism activities are key challenges for the cruise ship industry (Lester & Weeden 2004). The industry is guided by several international conventions, the most important of which is the International Convention for the Prevention of Pollution from Ships (MARPOL) which came into full force in 1983 (Dobson & Gill 2006). Several Annexes have been added and ratified since that time to address issues related to the growth of shipping. Annex IV which is entitled 'Regulations for the prevention of Pollution by Sewage from Ships' is of particular importance to minimising ecological impacts dealing with wastewater discharges (Klein 2003c). Despite the conventions, cruise lines have paid more than $60 million in fines over recent years for illegal dumping of waste and concealing information and more than $90 million over the last decade (Klein 2003c). In 1998 Holland America was fined $2 million for dumping oily bilge water in Alaska and the Royal Caribbean was find $18 million for 21 felony counts of violating US pollution laws, dumping oil and hazardous chemicals (Sweeting & Wayne 2006).

Much of the growth in cruise ship tourism has been in biodiversity hotspot locations (Sweeting & Wayne 2006). While cruise ship destinations around the world are attempting to manage increased ecological impacts from cruise ships, there appears to be a lack of data on specific impacts of cruise ships in sensitive environments (Sweeting & Wayne 2006).

Key destinations with extensive cruise ship and tour boat industries which may inform the management of environmental and social aspects of the Kimberley cruise industry include the Antarctic, the Galapagos, the Great Barrier Reef Marine Park, Alaska, the Mediterranean and the Caribbean. The natural environment is the main attraction of the Caribbean, but has been negatively affected by cruise activity related environmental impacts such as the destruction of coral reefs because of waste disposal discharged at sea (Lester & Weeden 2004). Small cruise ship tourism has been viewed as a more sustainable option for some Caribbean islands (Klein 2003a; Lester & Weeden 2004); however, there is no evidence that supports this assertion. The Mediterranean also experiences major ecological impacts due to illegal dumping of waste from cruise ships. As Klein (2003a p. 5) states, 'the cruise industry does not dispute estimates of the volume of waste produced; only how, when and where the waste is disposed of and whether the waste has any deleterious effects'.

Current expedition cruise vessels operating along the Kimberley coast are much smaller than even the smallest cruise liners of many international cruise companies (cf. Chapter 4) and they are not the sole user group of the area. Nevertheless, while the vessel dimensions are smaller, the key issues of biological, physical and social impacts (Table 6) remain the same and lessons from mature destinations may assist in reducing or altogether avoiding some of the negative impacts experienced at more mature destinations.

Table 6: Potential impacts from the use of coastal areas by the expedition cruise ship industry

BIOLOGICAL AND PHYSICAL IMPACTS	SOCIAL IMPACTS
Marine Pollution and Degradation	Impact to Indigenous culture/spirituality
Waste water discharge	Engagement with Indigenous communities
Bilge water and fuel spillage	Littering
Solid waste disposal	Vandalism and souveniring
Organic waste disposal	Crowding
Anchoring	Visitor conflict
Air emissions	Noise pollution
Introduction and transfer of pest species	Loss of aesthetic appeal
Marine Wildlife Impacts	Human waste
Vessel interference with wildlife	Visitor safety
Wildlife feeding	Site development
Wildlife disturbance	
Intertidal reef trampling	
Soil Impacts	
Trail development	
Soil compaction, infiltration rate and soil erosion	
Vegetation Impacts	
Loss of ground cover and vegetation damage	
Change in species composition	
Introduction of exotic species	
Altered fire regimes	

Furthermore, there appears to be an increase in larger vessels over recent years. According to industry and government sources, larger cruise companies appear increasingly interested in the Kimberley market, thus making this information particularly relevant. The following review of literature on boating and cruise ship impacts summarises the biological, physical and social impacts (Table 6) and provides international examples.

Biological and Physical Impacts

Any human activity in a pristine natural environment is likely to affect it in some way. The scale of such impacts depends on the intensity, extent and frequency of activities as well as the type, resistance and resilience of the environment in which they occur. The following sections provide a brief summary of the general literature on biological and physical impacts which are relevant to expedition cruise tourism along the Kimberley coast, including marine pollution and degradation, marine wildlife impacts, impacts on soil and vegetation and effects of altered fire regimes.

Marine pollution and degradation

Waste water discharge

Black water (waste water from toilets and infirmaries), grey water (wastewater from sinks, showers, galleys and cleaning activities) and bilge water (waste water from the ship's hull and engine room; cf. Section on Bilge Water below) are the three main types of waste water discharges from marine vessels. Grey water can be legally discharged into the ocean without treatment even though it may contain detergents, oil, grease and food waste (Sweeting & Wayne 2006). Excessive nutrients from wastewater discharges can lead to eutrophication (excessive algae and plant growth) which can smother corals and

important seagrass habitats and lead to the death of marine life (Schulkin 2002). Bacteria can be found in both grey and black water leading to the potential for serious human health issues (Department for Planning & Infrastructure 2003, p. 82). Furthermore, hazardous waste such as silver, copper, lead and mercury can often be found in grey water of ships and may be discharged into the ocean legally, potentially resulting in major damage to marine life (Sweeting & Wayne 2006). Hazardous chemicals can accumulate in tissues of marine mammals and other marine species causing death or reproductive failure (Sweeting & Wayne 2006).

Cruise ships are guided by Annex IV of the MARPOL convention which stipulates that marine sanitation devices (MSDs) must be installed on all ocean vessels. MSDs use chemical or biological processes to ensure that wastewater discharges meet specified discharge standards. However, not all countries are signatories to the convention and therefore not all large cruise-ships are required to install these devices. Variations to Annex IV occur for different vessel sizes in various countries. In Western Australia, there are no specific requirements for MSDs to be installed on smaller vessels and guidelines simply state that grey water 'should not be discharged in anchorages or in enclosed waters (Department for Planning & Infrastructure 2003 p. 82)'. It should be noted that the presence of MSDs does not necessarily mean that sewage has been treated adequately (Gorecki & Wallace 2003). In a study of 22 ships with these devices on board who were cruising Alaska, 75% exceeded the US coliform standard (Sweeting & Wayne 2006).

Specific cruise lines, such as those who are members of ICCL have policies which state that grey water can be discharged when a ship is 12 nautical miles from land (Sweeting & Wayne 2006). Some sensitive areas such as Glacier Bay National Park in the US (Alaska) have zero discharges (Dobson & Gill 2006). In Australia, which is a signatory to Annex IV, areas such as Sydney Harbour also have zero discharges (Dobson & Gill 2006).

The 'Strategy for Management of Sewage Discharge from Vessels into the Marine Environment' specifies a zoning system for waste water discharge from recreational and commercial vessels in Western Australian State waters (Department for Planning & Infrastructure 2005b). According to the strategy, discharge of waste water is not permitted in most inland waters, near designated areas of high environmental values (including marine nature reserves and sanctuary zones within marine parks) or within 500 metres of any aquaculture operation (Zone1) (Department for Planning & Infrastructure 2005b). Sewage treated by approved treatment systems may be released in parts of estuaries, marine parks and fish habitat protection areas, where the dilution factor is deemed to be satisfactory (Zone 2); and untreated sewage may be released in waters more than 500 metres off land where the areas are outside of Zones 1 or 2 (Department for Planning & Infrastructure 2005b). However, the DEC, under provisions of the Environmental Protection Act, also has some responsibilities regarding the management of pollution and environmental harm offences. This includes fines for discharges in some areas from commercial tour boats of materials such as detergent, food waste, laundry waste, organic solvent and sewage.

Bilge water and fuel spillage

Discharge of oil into the ocean through bilge water discharges which vessels accumulate in the hull of the ship is another impact to the marine environment (Benis 2000). Seawater is pumped into the ship to cool down the engines and as it circulates, it picks up oil and waste from the machinery which can produce hazardous oil vapours if allowed to remain untreated in the hull. Bilge water needs to be periodically removed or flushed from the hull and international environmental regulations (e.g. International Environmental Organisation (IMO) standards; ISO140001) require vessels to filter out the oil from the water and store the oil until the ship reaches shore. The clean water is able to be discharged at sea (Benis 2000). Vessels are required to keep a logbook, specifically related to bilge water separation and the water discharges which record the oil levels. However, there have been numerous incidents where cruise ship logbooks have not been filled in accurately in order to conceal discharges to avoid fines (Schulkin 2002). Cruise ships such as the Royal Caribbean admitted during a 1999 plea agreement with the US Department of Justice that it repeatedly discharged oil in Alaska's Inside Passage (Benis 2000).

The extent of damage caused by oil discharges or petroleum spills depends on the type of oil (crude or refined), quantity, distance of release from shore, time of year, weather conditions, water temperatures, and currents (American Boating Association 2006). When a fuel spill occurs, toxic hydrocarbons, such as toluene and benzene, can cause immediate deaths of wildlife such as non-migratory fish and shellfish, particularly in the larval stage (American Boating Association 2006). Some of the chemicals resulting from spills, such as benzene, are also highly toxic to humans (American Boating Association 2006). Fuel spills increase carbon levels which stimulate the growth of

bacteria and phytoplankton (Nayar, Goh & Chou 2005). Polycyclic aromatic hydrocarbons, which are absorbed into marine particles, can cause behavioural changes, physiological changes, effects on reproduction, deformity, changes to growth and feeding patterns, mutations, cancer, and widespread ecological change (Johnson 1998). Fuel spills can also be damaging to larger wildlife as other chemical components of fuels form sticky, tar-like globs on the surface that adhere to marine wildlife. This can affect birds, otters, and seals by enhancing their vulnerability to hypothermia, illness and predation (American Boating Association 2006; von Wedel 1999). However, the heavy components of oil that sink to the bottom of bodies of water may have the biggest impacts on ecosystems, as they can kill or damage important marine habitat such as corals and seagrasses and can kill benthic organisms and adversely affect food webs (American Boating Association 2006; Johnson 2002).

Recommendations for fuel spill management include education programs, reporting systems, encouraging boat safety and maintenance procedures, engine and vessel redesign, establishment of oil recycling centres and programs, and access to bilge pumping facilities (Based on US data, specific for San Diego) (Johnson 1998).

In Western Australia, it is illegal for vessels to discharge oil into oceans and any accidental discharges are required to be reported. However, there is no requirement for vessels to fit special oil bypass filters (Department for Planning & Infrastructure 2003).

Solid waste disposal

Solid waste management is a key issue for the cruise industry (Schulkin 2002; Sweeting & Wayne 2006). Solid waste on board cruise ships includes items such as glass, plastics, cardboard, aluminium and kitchen grease (Sweeting & Wayne 2006). Although international laws prohibit dumping of garbage at sea, garbage does make its way into the ocean, some of which can be dangerous to marine animals such as sea turtles, fish and seabirds (Schulkin 2002). Passengers can flush items down toilets and ships have been cited as throwing garbage overboard (Sweeting & Wayne 2006). Plastics and other non-biodegradable products can snare or be swallowed by animals causing death. Although there has been an agreement to IMO regulations prohibiting dumping of plastics by many of the shipping countries, it is legal to dump items such as glass, paper products, crockery, lining and packaging material 40 kilometres from shore (Schulkin 2002; Sweeting & Wayne 2006).

In the Kimberley this situation was not monitored directly. However, the observed cruise vessels stored their solid waste on-board. The solid waste was then disposed of upon reaching a port (Broome or Wyndham). One vessel was observed to use paper and cardboard waste to light a fire on the beach for passengers to enjoy a bonfire on-shore. The operators ensured no waste was left behind and the fire was extinguished upon leaving.

Organic waste disposal

Organic waste reduces oxygen levels in the water due to the concentration of compounds eliminating dissolved oxygen (American Boating Association 2006). Food waste can also increase nutrient content (Osmond, Line, Gale, Gannon, Knott, Bartenhagen, Turner, Coffey, Spooner, Wells, Walker, Hargrove, Foster, Robillard & Lehning 1995), favouring algal growth. The organisms which can be harboured in organic waste can cause disease in humans through direct contact (typhoid, hepatitis, gastroenteritis) or through the consumption of contaminated organisms like shellfish (American Boating Association 2006). Depending on the location and situation, the disposal of organic waste such as food scraps or fish carcasses may also be viewed as wildlife feeding and can attract wildlife towards a vessel, as observed on Kimberley field trips where gummy sharks (*Mustelus antarcticus*) were sometimes observed at the rear of the stationary vessel, feeding on the remains of the boat's catch of the day.

Recommendations for organic waste disposal include the use of marine sanitation devices (Osmond et al. 1995) although many waste disposal systems do not treat organic waste effectively enough to remove the risk of environmental damage (Marine Conservation Research Institute 2005). In the US, more stringent standards for the manufacture of these systems to improve performance, and voluntary standards have been implemented for larger vessels to further reduce the levels of untreated waste being dumped (Marine Conservation Research Institute 2005). Accurate records of cruise vessels need to be taken to identify at risk areas where there is a concentration of traffic and the increased vulnerability to cumulative problems (Marine Conservation Research Institute 2005). The licensing and recording of boat traffic and mooring areas should be used along with the implementation of no discharge zones to protect areas experiencing a volume of traffic to prevent build up of pollutants (Virginia Marine Resources Commission 1988).

Anchoring

The impacts of boat anchoring on coral reefs are poorly documented although direct evidence appears to suggest that significant damage does occur (Davenport & Davenport 2006). Anchoring in the Caribbean and Mediterranean from cruise ships has resulted in long-term damage to coral reefs and dredging channels for the larger vessels leads to turbidity problems which damage both corals and seagrass beds (Davenport & Davenport 2006). Anchoring by smaller vessels can also damage seagrass habitat by creating 'halos' when chains drag across the seabed and the boat position shifts due to tide, current and wind (Milazzo, Chemello, Badalamenti, Camarda & Riggio 2002a). The number of boats, their size and type of anchor used, weather conditions and season and the type of substrate and species will all affect the degree of anchor damage (Backhurst & Cole 2000; Milazzo et al. 2002a). Studies in New Zealand, the United States (Florida), the Mediterranean and Australia (Queensland and Western Australia) reported on impacts caused by anchoring, such as disturbance to benthic and macrofaunal organisms and seagrass communities (Backhurst & Cole 2000; Davenport & Davenport 2006; Harriott 2002; Preen 2001).

Anchor damage in the Great Barrier Reef Marine Park (GBRMP) in Queensland, Australia, is an issue of great significance, causing damage to fringing reefs and corals as a result of the anchors dropping on corals and the movement of the chain across the substrate (GBRMPA 2003). In 2002 the Great Barrier Reef Marine Park Authority (GBRMPA) led an investigation of possible new anchorage sites in the remote areas of the reef to cater for the increase in cruise ships visiting the area. The process required significant investigation and assessment of each of the sites which involved benthic, hydrographic and biological surveys of proposed sites. As a result, an additional eleven cruise ship anchorage areas were designated in the Far North section of the Marine Park (GBRMPA 2003). In the Kimberley, it was observed that anchoring occurred largely in sandy substrate in deep water.

Introduction and transfer of pest species

The introduction of invasive marine species into new areas is considered one of the key threats to marine environments (Goggin 2004). In Australia, more than 250 exotic marine species have been reported, many of which have been introduced unintentionally through shipping activities and aquaculture (Goggin 2004). Most contamination occurring at problematic levels occurs in ports and urban coastal regions (Department of Environment and Conservation 2006). Marine pests can be transferred as fouling organisms that attach to the ship hull, grills, grates, pipes, rudders and other surfaces or through water intake such as to cool the engines (bilge water) or for ballast (Department of Sustainability and Environment 2006). The transfer of micro organisms is particularly dangerous when becoming concentrated in shellfish living in the area (Goggin 2004).

Pests can displace native organisms through competition and causing environmental changes, such as observed with the introduction of the black striped mussels (*Mytilopsis* sp.) in Darwin and with crown-of-thorn starfish (*Acanthaster planci*) on the Great Barrier Reef (Department of Fisheries Western Australia 2005; Environment Waikato 2006). Marine pests can also have an adverse effect on the aquaculture and fishing industries and can affect human health with micro organisms contaminating shellfish (Environment Waikato 2006).

To reduce the risk of pest transfer, boat surfaces should be cleaned regularly with all material and water being disposed of appropriately (Department of Sustainability and Environment 2004). In-water hull scrubbing has been prohibited in Australia since 1997 to prevent the spread of pests. The use of anti fouling paints is not legislated as yet (Goggin 2004). In New Zealand, controls for ballast water discharge and hull fouling were implemented in 1998 and 2002 respectively to reduce the transfer of pests.

In Western Australia, there is currently no accurate record for environmental degradation of marine environments by human activity as there is no central reporting agency (Department of Environment and Conservation 2006). As in areas elsewhere, the disposal of waste presents the risk of introducing pathogens, toxic compounds of excessive nutrients into the water. While the risk of contamination in the Kimberley by recreational vessels is at current considered limited, the environment is considered highly vulnerable (Department of Environment and Conservation 2006).

Marine wildlife impacts

Impacts of human–wildlife interactions are context-dependent in terms of species type, the type of interaction as well as the place and time in which they occur. The increase in popularity of wildlife viewing has led to concerns of the impacts of wildlife interactions on wildlife behaviour (Newsome et al. 2002). According to Davenport and Davenport (2006), activities such as whale, dolphin, or bird watching can, if policed properly, be inoffensive and may in fact have beneficial effects, including

community support for the preservation of habitats. Wildlife interactions are difficult to police in remote locations but could be regulated through license conditions and other means.

The expedition cruise ships in the Kimberley offer a range of activities, and wildlife viewing is one of the major itinerary items marketed by operators (cf. Chapter 4). Wildlife viewing activities cited by operators include: dolphin and whale-watching; visits to bird and turtle breeding sites; crocodile viewing; collecting oysters; and recreational activities such as fishing and crabbing. One operator's brochures included photos of tourists feeding fish, whilst another showed feeding a crocodile which was jumping out of the water (Figure 26).

Figure 26: Wildlife interactions during Kimberley expedition cruises

The following sections summarise some of the key wildlife related impacts relevant to tourism activities along the Kimberley coast as addressed in the literature.

Vessel interference with wildlife

Boat activity in coastal regions, either travelling between locations or engaging in specific marine wildlife watching activities, can interfere with and directly impact on marine wildlife such as whales, dugongs, manatees, dolphins, manta rays and turtles (Newsome, Dowling & Moore 2005; Preen 2001). Marine wildlife watching usually takes advantage of the seasonal use of habitat which use the areas as breeding and feeding grounds (Higham & Lusseau 2004). Research on marine wildlife–vessel interaction, particularly whale watching, documents resultant behaviour changes by marine mammals. Effects include changes in swimming speed; changes in the course of travel and direction relative to the source of disturbance; variations in surfacing, dive and ventilation patterns; disruption of natural foraging, resting and socialising behaviour; adjustment of habitat use such as displacement from preferred areas; dispersion or cohesion of cetacean groups; changes in ranging patterns; variations in vocal behaviour; and sensitisation to vessels (Bannister, Kemper & Warneke 1996; Higham & Lusseau 2004; Preen 2001; Smith, Newsome, Lee & Stoeckl 2006; GBRMPA 2000; Lien 2000; Corkeron 1995; McCauley 1996). While studies from the GBRMP suggest that impacts on whales of interactions may not be significant (Orams 2000), or may not be of biological significance for the mammals due to their short term nature (Bejder & Samuels 2003), evidence exists that boat noise and intensive whale and dolphin watching activities can disturb marine mammal behaviour and acoustic activity (Davenport & Davenport 2006; Marsh, Penrose, Eros & Hughes 2002; Sousa-Lima, Morete, Fortes, Freitas & Engel 2002). Thus, concerns remain about the potentially adverse effect of tourist activity on whales (Smith et al. 2006). Other obvious impacts to larger marine mammals from vessels include entanglement in fishing nets while on migration and injuries or mortality from collisions (Newsome et al. 2005). There are numerous examples of boat strikes in Australia (GBRMPA 2000). In the US where there are no guidelines or regulations regarding whale watching, boat strikes are the major cause of death and injury to whales (Davenport & Davenport 2006).

Australia has implemented important guidelines surrounding tour operations interacting with whales in order to minimise the impacts of dolphin and whale watching. Some whale watching destinations have taken further measures to ensure long-term sustainability, such as in Hervey Bay, Queensland, where commercial whale watching activities are managed by a code of ethics and provisions of the Hervey Bay Marine Park Zoning Plan. The regulations encompass specified whale watch areas, approach conditions and regulated educational and interpretive programs (Government 1994). In all Australian waters, including state and territory waters, the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) regulates actions that will have, or are likely to have, a significant impact on all listed threatened and migratory species. Whale watching in state waters

(between the shore and three nautical miles [5.5 kilometres] out to sea) will require a permit from State government (Department of Environment & Water Resources 2007).

Positive social, political and economic benefits exist from whale and dolphin watching. The social effects for humans include potential for environmental education, positive psychological effects and the positive perception of whales as intelligent creatures with sophisticated communication systems (Higham & Lusseau 2004). In a recent study in Queensland, Australia, Orams (2000) challenges the assumption that boats actually need to get close to whales to ensure high tourist satisfaction levels with findings that there was no significant difference between satisfaction levels of customers who had viewed whales and those who had not viewed them on whale viewing tours. The study suggests that the experience, the crew's attitude and their interaction with passengers and the number of passengers on board influence satisfaction levels. Perceptions by tour operators that visitors wish to get close to whales can be countered (Orams 2000, 2002).

Dugong populations are found along the Kimberley coast, although little data exists as to estimates of actual numbers (Marsh et al. 2002). Dugongs are extremely sensitive to the availability of seagrass food sources and any disturbances to seagrasses from boat activities, such as anchoring may impact a dugong's fecundity (Marsh et al. 2002). The important whale calving area of the Kimberley and the presence of the endangered Irrawady dolphins (*Orcaella brevirostris*) mean that monitoring of the increased boating activities should occur to determine possible impacts.

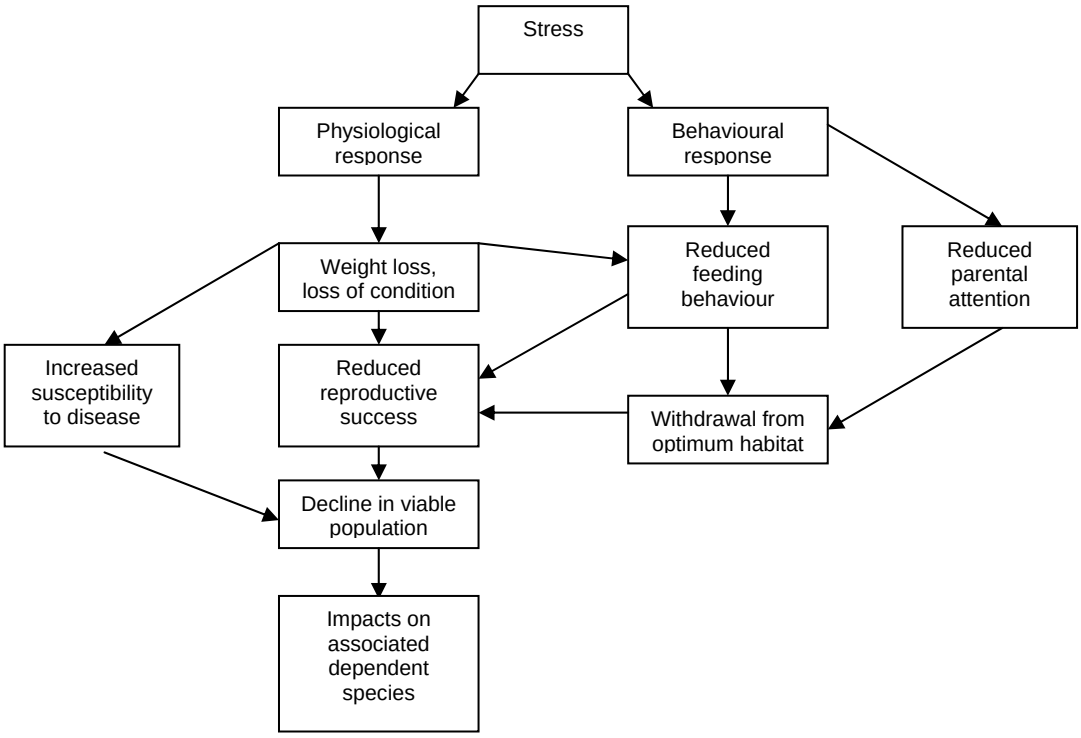
Wildlife feeding

To date minimal research has been conducted on the impacts of feeding of marine fish. On the Great Barrier Reef in Queensland, Australia, concerns were raised about the impacts of fish feeding from pontoons and whether predator aggregation would occur and result in a decline of local fish population (Harriott 2002). A study by Harriott (2002) found that there were no impacts on the prey or competitor species but that fish were attracted to human signals at the designated fish feeding times on the pontoons. The main management issue was to ensure that limited food was fed to the fish and the appropriate feed was given. The study did find that there was a potential for increased fish aggression as a result of continued patterns of feeding. In the Mediterranean, studies conducted in Marine Protected Areas (MPAs) revealed that tourist feeding of fish influenced fish assemblages on a spatial and temporal scale from hundreds of metres and over months (Milazzo, Badalamenti & Vega Fernandez 2005). The study indicated that ecological consequences could arise from non-natural aggregation of predator species which could interfere with local populations of predator and prey fish species (Milazzo et al. 2005). Wildlife feeding is viewed as a controversial issue and with the increased growth of wildlife tourism and increasing concern over the impacts it is becoming an important management issue (Pinn & Rodgers 2005).

Wildlife disturbance

As indicated in the earlier section on vessel interference with wildlife, tourism activities can affect and influence natural patterns of marine wildlife behaviour. Similarly, on-shore excursion by visitors can affect land-based wildlife behaviour as shown by studies in Antarctica and the Galapagos Islands (Newsome et al. 2002). For example, the presence of tourists at seabird breeding sites may determine breeding success and survival of offspring (Newsome et al. 2002; Pfieffer & Peter 2004). Studies conducted in Antarctica, where tourism activities coincide with the most sensitive period for Antarctic wildlife, demonstrated that the presence of tourists had physiological effects on breeding Giant Petrels (*Macronectes giganteus*) and penguins and altered behaviours of Skuas (*Catharacta*) (Ingham & Summer 2002; Pfieffer & Peter 2004). Further observed effects were increasing vulnerability to predation, evidence of habituation and decrease in numbers at sites with human interactions (Ingham & Summer 2002; Pfieffer & Peter 2004).

Visiting bird and turtle breeding sites on islands off the Kimberley has been highlighted on several of the Kimberley cruise ship itineraries. To ensure the longer term sustainability, such activities may require monitoring for possible impacts. The possible ecological implications from tourist-wildlife interactions are summarised by Newsome *et al*. (2002) as shown in Figure 26.



(Source: Newsome et al. 2002 p. 74).

Figure 27: Potential ecological implications of stress caused by disturbances to wild animals.

One of the main factors of wildlife interaction is stress to the animals. Stress can result in a behavioural and/or physiological response, which, particularly when repeated and longer-term, may result in reduced physical condition of the animal and negatively changed behaviour that ultimately affects the viability of a population and thus can impact on dependent associated species .

Intertidal and reef trampling

Intertidal walking is an activity undertaken by many tourists visiting coastal destinations and is offered as an activity by some Kimberley operators as part of the tour experience. However disturbances from tourism related activities can severely impact on these coastal zones, damaging important rocky shore habitats (Davenport & Davenport 2006). Tropical rocky shores where coral flats occur are even more vulnerable to trampling due to the occurrence of polyps in the outer layer of the coral structure, which do not cope with breakages (Davenport & Davenport 2006; Milazzo, Chemello, Badalamenti & Riggio 2002b; Newsome et al. 2002). Disturbances, including rock turning and collecting in these areas, degrades habitat stability and reduces biodiversity (Murray, Denis, Kido & Smith 1999; Newsome et al. 2002). Foot traffic can damage intertidal species such as fleshy seaweeds, coralline algae, fragile tube-forming polychaetes, bivalves such as mussels, acorn barnacles, limpets, and species of crabs that seek refuge under loose rocks and seaweeds at low tides (Milazzo et al. 2002b). A study examining damage caused by walking on an exposed reef at Heron Island, Australia, found that even relatively low use levels caused considerable damage to living coral was broken off (Woodland & Hooper 1976). Studies of canopy forming macroalgae showed that they may be strongly damaged by human trampling with erect macroalgae particularly susceptible to disturbances (Milazzo et al. 2002b; Pinn & Rodgers 2005). Studies have also revealed that algal turfs are more resilient to disturbance showing increased coverage suggesting that impacts may depend on the nature and morphology of algal plants (Murray et al. 1999).

Collecting from the intertidal zones is another activity which results in impacts. The most direct effect is the decreased abundance of exploited species, such as the slow-moving and sessile intertidal invertebrates, and altered population size structures (Pinn & Rodgers 2005). Pinn and Rodgers (2005) point out that although intertidal trampling affects these zones, environmental factors are more important in determining species distribution.

One of the sites along the Kimberley coast most visited by expedition cruise vessels is the Montgomery Reef. This unique algal reef structure is regularly exposed at low tides and some operators have included reef walks as one of their tour activities. During observation trips it was observed that

some operators were not offering reef walks, providing information to their passengers about the potentially damaging nature of reef walking activities and the need to protect these systems, while, sometimes at the same time, passengers from other vessels were participating in reef walks in large groups.

Soil impacts

Recreation and tourism activities such as camping and sightseeing in natural areas can cause both direct and indirect impacts. Direct impacts to the soil include trampling of vegetation which reduces plant cover, often resulting in exposure of bare soil and indirect impacts such as soil compaction, reduction in macro and total porosity, reduction in organic matter, soil erosion and water infiltration problems often reducing plant growth as water infiltration reduces (Cole & Landres 1995; Liddle 1997; Newsome et al. 2002).

Trail development

One of the main impacts of tourism and recreational activities in natural areas is trail development, which is the cause of the majority of environmental change because vegetation is removed/trampled and the soil is compacted (Cole 1990b). After development, the trails are impacted upon by user type, user behaviour and user intensity which impact on soils and vegetation in different ways (DeLuca, Patterson, Freimund & Cole 1998; Leung & Marion 1996; Randall 2004; Sutherland, Bussen, Plondke, Evans & Ziegler 2001). If effective management strategies are put in place during the development stage, the trail could be resistant to degradation which leads to considerable saving when it comes to trail maintenance (Coleman 1981). Issues of trail siting and development are further discussed in a following section reporting on the biophysical monitoring conducted.

Soil compaction, infiltration rate and soil erosion

Recreation activities have a direct impact on the level of soil compaction, which results in a decreased ability to support vegetation due to the reduction in soil macro pores (Growcock 2005). This directly affects air and water movement through the soil, leading to restriction of root growth and therefore carbohydrate reserves (Alessa & Earnhart 1999; Bogucki, Malanchuk & Schenck 1975; Hammitt & Cole 1998; Price 1985). As the soil continues to compact, the threat of erosion becomes imminent and surface water movement changes (Growcock 2005). Studies have found that the soils most receptive to compaction are those with a range of particle sizes, low organic content and those that are wet when trampled (Smith 2003).

The rate of infiltration is largely affected by the structure of the soil (Geeves, Craze & Hamilton 2000). As water level increases it will eventually surpass the rate of absorption. As a result the water accumulates over the soil which is also known as runoff (Growcock 2005). The reduction of the water infiltration rate has been seen as a significant ecological consequence of compaction due to its effect on vegetation growth, surface runoff and soil erosion (Hammitt & Cole 1998; Hart 1982; Leung & Marion 2000).

Erosion on walking trails is mostly controlled by natural variables such as distribution of rainfall, vegetation communities, geological controls and frequency of use (Growcock 2005; Leung & Marion 1996; Smith 2003). This occurs because the chemical and physical properties of the soil change which causes a difference in soil moisture, infiltration rates and the destruction of organic matter (Growcock 2005). These changes impact on the amount of vegetation growth which increases the risk of soil erosion (Zabinski & Gannon 1997).

Vegetation impacts

Impacts on vegetation are influenced by distribution of visitor activity, density and fragility of vegetation and amount and type of use (Liddle 1997). Vegetation that is resistant to recreational impacts are often low growth species, for example, grass due to an increased level of toughness and flexibility (Cole 1992; Liddle 1997; Yorks, West, Mueller & Warren 1997).

Loss of ground cover and vegetation damage

Loss of ground cover is primarily caused by trampling which can result in bruising and/or death of plants (Scherrer & Growcock 2006). Small ground covers such as mosses, which protect the soil surface, are particularly receptive to damage by trampling (Liddle 1997). However, vegetation damage at campsites is quite common, particularly on trees. Examples of damage include felled trees, axe and saw marks, embedded nails, rope tied around trees, root exposure and soil erosion (Smith 2003). Damage in wider vicinity of campsites includes reduced numbers of tree seedlings at perimeter and

visitor created social trails (Smith 2003). Human damage to trees tends to be more extensive at informal campsites than at designated campsites, the most amount of damage is caused by axe marks (Smith 2003). This type of damage does not necessarily affect the long term health of the mature trees but severe chopping can kill young trees (Brown, Kalisz & Wright 1977). Damage to trees can also affect on the visitors experience and site quality (Leung & Marion 1999).

Another common result of recreational activities and trail formation is root exposure. When roots are exposed it is an indicator of soil erosion, soil exposure and trampling (Leung & Marion 1999). Severe soil erosion around the root of a tree can cause irreversible, sometimes fatal damage to trees (Smith 2003).

Change in species composition

Trampling can degrade natural plant communities by changing the species composition. Sensitive, native and endemic species are substituted by species that are more tolerant of trampling. These often include species such as grasses and other low growing native colonisers (Burden & Randerson 1972; Huxtable 1987; Liddle 1997; Marion & Cole 1996; Scherrer & Growcock 2006; Sun & Liddle 1993).

Nutrients from human waste can also have an impact on species composition due to competitive displacement. This can promote continuous change, which benefits weed species leading to changes in vegetation communities (Bowman & Steltzer 1998; Bridle, Kirkpatrick & von Platen 2006).

Introduction of exotic species

The effects of recreational activities, for example, damage to soil can directly favour weed species (Mallen 1986; Marion & Cole 1996; Scherrer & Growcock 2006; Scherrer & Pickering 2006). An increase in weed numbers and variety can have further effects on the environment, including weeds out competing native species for resources (Scherrer 2004). This effect can directly impact upon edaphic processes, changing hydrological cycles and fire regimes (Scherrer 2004; Usher 1988). Island environments such as those along the Kimberley coast are particularly vulnerable to the introduction of exotic species and have often been protected by their geographic isolation and remoteness. Increased visitation to the Kimberley islands, such as through organised tourism activities or by recreating workers from nearby industry activities such as pearl farms or mines, have the potential to facilitate the dispersal of weeds through seeds transported in clothing, footwear or camping materials. Further, a range of introduced plants have been observed at some of the squatter camps. Thus movement from and to these camps may further facilitate the spread of introduced species.

Social Impacts

To date there appears to be relatively little published socio-cultural research relating to cruise ship tourism, particularly in regard to indigenous communities. Impacts identified in the literature included congestion created by an influx of tourists into small communities; displacement of locals by infrastructure needs; conflict between users' recreational experiences and tourist experiences, including displacement of traditional recreational activities; and amenity declines (Gorecki & Wallace 2003; Jaakson 2004; Lester & Weeden 2004).

In Alaska, where cruise ship tourism has increased dramatically over the last decade, it appears there may be limits to the ability of Alaskans to tolerate the changes to their communities and their environment (Mazza & Kruger 2005). Tourists are drawn to Alaska to experience the cultural and ecological resources, which consist of undeveloped landscapes and unique wildlife (Klein 2006a). The increase in both small and large cruise ship vessels and the environmental and social impacts, such as congestion, has resulted in community anger and distrust of the industry. One community went as far as delivering leaflets to tourists from small cruise ships indicating that they were not welcome as part of a cruise ship tour but would be welcome if they returned on their own (Schroeder et al. 2005). Conflicts occur between residents when differing values exist. Some community residents appear to be more sensitive to changes in the natural and social environment, whereas other members will tolerate changes when they receive positive economic benefits (Schroeder et al. 2005). Of concern is the fact that cruise ship tourism escapes the same scrutiny that exists for other industries. It is often not subject to the local, state or federal regulations and permits guiding other industries and it also falls outside of the planning schemes (Stewart, Draper & Johnson 2005). For example, cruise line companies do not need to consult with local communities or conduct impact assessments if they decide to increase or decrease the number of passengers who disembark at destinations (Stewart et al. 2005).

In the Arctic region where cruise ship tourism is increasing, research on the socio-cultural impacts revealed that stress from tourism activities is evident within aboriginal communities (Stewart et al.

2005). For instance, conflict has arisen amongst Inuit communities as to the benefits or otherwise of tourism. In one community a study indicated indigenous support for tourism as long as the development was gradual and the community had control of the industry (Klein 2003c). Nature based tourism was viewed by some of the Inuit elders as a means to develop economic opportunities and therefore was supported (Klein 2003c).

Ethical and community responsibility of the international cruise industry and economic benefits of cruise tourism are subject to considerable debate, with claims of poor working conditions and little economic flow on effect to local communities (Klein 2003c). While current expedition cruise businesses operate on a much smaller scale and are predominately based locally (cf. Chapter 4), concerns have been raised regarding the economic benefits to the local region from operations based elsewhere. A project commissioned by TWA is currently evaluating these aspects and is expected to be released mid 2007.

Impact on Indigenous culture/spirituality

A range of general social impacts associated with all forms of tourism, perhaps relevant to the Kimberley, include inauthentic cultural displays, assimilation of Western attitudes about money; decreased respect for traditional leaders; and economic exploitation (Snow 1998). Snow (1998) identified these as major issues when conducting a study of indigenous Indian communities in Panama, South America. However, Snow (1998) concluded that with careful planning to ensure that the benefits are maximised and costs are reduced, tourism provides opportunities for communities who are in need of economic self-determination.

In Australia, it is often cited that domestic and international visitors are interested in an experience and interaction with Aboriginal people, with authenticity being an important aspect of that experience (Schmiechen 2006; Tourism Australia 2005a). The degree of interest that is often cited, however, is not reflected in actual uptake of visitation to established Indigenous businesses and greater scrutiny of figures is required (Ryan & Huyton 2000).

A study in the Northern Territory was conducted by Ryan and Huyton (2000) to determine visitor attitudes towards tourism products based on Aboriginal culture. The study found that while approximately one-third of visitors to the Territory had an interest in Aboriginal cultural products, they were not viewed as a major attraction. Visitors interested in cultural products were also interested in nature and adventure tourism and the Aboriginal cultural products were viewed as an added value to the visit to the Territory (Ryan & Huyton 2000).

An issue associated with the development of Aboriginal cultural products is the risk of commodification of 'Aborginality' (Ryan & Huyton 2000). Ryan and Huyton (2000) question the extent authentic knowledge of the Aboriginal cultural products is required, if the main tourism product attracting visitors is nature or adventure tourism. They argue that commodifying sacred Aboriginal knowledge risks simplification of culture and leads to no 'real' understanding of the complexity of Aboriginal culture by tourists. Instead it is suggested that structured commodification of culture in the form of artificial constructs, such as the Maori villages developed in New Zealand, would negate any direct intrusion upon lives of Aboriginal Australians. Supporting arguments can be found in studies conducted by Moscardo and Pearce (1999), who believe that authenticity is a judgement value placed on the setting by an observer and tourists in fact recognise inauthentic experiences but find them to be enjoyable. Findings of research conducted in Cairns in Northern Queensland highlighted the point that tourists differ in their types of experiences they seek and they may actually feel uncomfortable with direct contact with ethnic groups (Moscardo & Pearce 1999). Nevertheless, in the context of expedition cruising along the Kimberley coast, there is currently little Indigenous involvement in the tourism experience apart from the visits to Indigenous rock art and burial sites by operators. Unlike in other tourist destinations, apart from one vessel which had an Aboriginal person from Broome on board as a guide, the indigenous experience is purely based on the visitor experience of rock art sites and the interpretation offered by operators, without any contact with the Traditional Owners of the areas visited.

Another issue concerning marketing and development of Indigenous products is that stereotypes of a particular image are often portrayed, which impedes the development of more diverse products (Fitzpatrick 2000). Cultural products are often marketed as reflecting past cultural experiences rather than marketing Indigenous culture as being a living and current contemporary culture. Marketing of Aboriginal products in the Kimberley, with its population mix comprising 46% of Aboriginal people, needs to reflect a contemporary image in marketing of these products (Kimberley Development Commission 2005a).

On the positive side, opportunities for Aboriginal involvement in tourism can bring about beneficial social outcomes for communities. Positive outcomes include: revitalisation of skills; fostering

creativity; an opportunity for communities to present themselves in a positive manner; the generation of indigenous employment and protection of cultural heritage; increased self-sufficiency through income from tourism related activities and cultural revitalisation (Moscardo & Pearce 1999; Zeppel 2002). According to Kingsbury (2005), arguments surrounding the socio-cultural impacts of tourism are based on assumptions that locals are unable to adapt, resist changes or pursue their own interests. It should not be assumed that cultures are static, defenceless or in need of protection (Altman & Finlayson 1993; Ryan & Huyton 2000). Despite this argument it is important to note that Australia has experienced a mixed history of success or otherwise of Aboriginal tourism products (Ryan & Huyton 2000). Careful market research is required before undertaking any business based on a particular cultural product (Stewart et al. 2005). There is also a danger that the economic benefits for Indigenous communities are over-emphasised (Lester & Weeden 2004).

Engagement with Indigenous communities

Other social and cultural issues related to activities on Indigenous lands relate to the ability of Indigenous communities to negotiate agreements with companies and to be involved in social impact assessments (SIAs). In the past, Indigenous communities have been alienated from SIAs due to specific problems with the process. Firstly, SIAs are usually conducted over short time frames, whereas indigenous communities often require longer time-frames as part of their decision making process (O'Faircheallaigh 1999). Secondly, financial resources are often inadequate, which limits access to technical information and expertise. The use of culturally alien processes, such as legalistic public hearings, also creates problems (O'Faircheallaigh 1999). An important issue raised by O'Faircheallaigh (1999), of significance to the Kimberley Indigenous community, is that of acceptance and understanding of indigenous values. Projects may ignore or fail to acknowledge the values or perspectives of Indigenous groups and fail to incorporate a big view of the cumulative impacts that may occur as a result of these projects. Furthermore, a recent report reviewing agreements between mining companies and Indigenous communities in Australia seriously questions the benefits to the Traditional Owners, raising issues including inadequacy and non-adherence of the agreements, largely attributed to the Goliath versus David relationship between sophisticated billion dollar organisations negotiating with comparatively inexperienced Aboriginal communities (Australian Broadcasting Corporation 2007).

Littering

The presence of litter in the natural environment affects both the environment and wildlife. Litter can impact the environment through visual pollution as well as physical pollution such as through the release of exotic chemicals into soil and water by the introduction of foreign objects. Wildlife can be seriously affected by litter in the natural environment, by both altering their habitats and modifying their feeding patterns. Wildlife can become entangled in the litter when attempting to consume it and can result in serious injury or death (Ellis & Lish 1999; Mathieson & Wall 1982).

Litter was identified as a significant problem by 17% of United States National Parks Managers, a study in 1995 reported. For protected area managers litter continues to be a major cause of problems (Wang & Miko 1997). Particularly within natural areas, visitors perceive that litter is a problem and adversely affect the visitor experience. Strong reactions are common from visitors as they consider litter to be highly inappropriate and in some cases to be a deliberate depreciative act (Hendee, Stankey & Lucas 1990; Roggenbuck 1992).

There are two main issues related to littering, including how to prevent visitors throwing litter on the ground and how to encourage visitors to pick up litter already on the ground (La Hart & Bailey 1975). Addressing these two issues can be facilitated through behavioural change techniques by environmental interpretation, role modelling and verbal appeals. On a guided walk, factors influence the amount of littering including the presence of a guide, often perceived as an authoritarian figure. Or depending when the guided walk was taken, for example after lunch, could mean visitors are unlikely to take snack foods which could become potential litter (Littlefair 2003). In a study of integrated campsite impacts at Warren National Park, Western Australia (Smith & Newsome 2002), the relatively low levels of litter were attributed to the presence of bins. More specifically, with the provision of bins at individual campsites, visitors are encouraged to dispose of even small pieces of litter. Although, the amount of litter is dependent on several factors including the time of year and peak periods, amount of use and the management efforts in cleaning up (Smith 2003). At present in the Kimberley, this issue does not appear to be of major concern as litter levels were low (cf. Table 9).

Vandalism and souveniring

In more remote destinations such as Antarctica, concerns were raised about the impact of tourism on cultural heritage sites such as the historic huts and other sites which reflect past human endeavour (Stewart et al. 2005). 'Souveniring' by tourists is an issue, although due to the remoteness of these locations there are difficulties in ensuring that important sites are conserved for future generations. In the Kimberley, similar concerns may exist if visitors 'souvenir' rocks or Aboriginal artefacts from sacred areas. Heritage and cultural sites of significance in the Kimberley visited by tourists will require careful management to ensure that they are not damaged. Education and interpretation may be one strategy that can assist in careful management and will be discussed in Chapter 6.

Noise pollution

Excessive or alien noises in natural areas can adversely affect both other visitors and wildlife (Littlefair 2003). Studies on disturbance of wildlife species by human noise can affect different species with varies responses, such as wildlife leading to panic, exertion, disruption of essential function (breeding, feeding or nesting), displacement to other locations or in the worst cases, death (Buckley 2001; Burger & Gochfield 1998; Cole 1990b). Noise pollution in the Kimberley comes mostly from helicopters used in the region to transport tourists to sites. While only three expedition cruise vessels have helipads, there are sites such as Mitchell River, where tourists can be picked up from Naturalist Island and taken for a helicopter ride over Mitchell Falls. It was observed that a larger vessel offering passengers this experience had the helicopter running trips for half a day. A smaller vessel who was not partaking in helicopter tours was anchored in the same vicinity and while out touring the river in tenders had helicopters flying overhead. At present, this issue is isolated and not of major concern, but with the potential incursion of larger vessels with helipads on-board, this issue could become a more prevalent issue in the future.

Site development

Protection of heritage and archaeological sites from tourism development has also been highlighted in the literature. In Barbados, where cruise ship development is viewed as a viable option for gaining foreign revenue, destruction of important archaeological sites to make way for a marina and waterfront development has occurred (Fitzpatrick 2000). Economic pay-offs from the development and a lack of understanding of the historical indigenous connection to the site by politicians and the present population led to the decision for the development (Fitzpatrick 2000). Fitzpatrick (2000) believes that economic growth is valued over the preservation of important historical sites reflecting the need for an awareness of a shared history identity to be developed in Barbados. He argues that instead of destroying these important archaeological sites, cultural resources could be utilised as an attraction for tourists and that education has an important role to play in the preservation of such important sites in any community (Fitzpatrick 2000). In Western Australia, development and expansion of petroleum and mining interests on the Burrup Peninsula, south of the Kimberley coast, presents a similar and very current example of pressure from economic development on unique and world-class cultural and archaeological heritage. Only after sustained public pressure, some of the area was designated as a 'national heritage site' in July 2007, contributing to the preservation of some of Australia's outstanding cultural heritage in the area.

Kimberley Coastal Attractions and Expedition Cruising – Environmental, Cultural and Visitor Management Issues

Environmental impact of tourism on the Kimberley Coast

The following sections discuss the findings of field studies conducted during this project including the rapid biophysical assessments at selected on-shore sites, observations of visitor behaviour and visitor management at sites, and impacts to Indigenous culture and spirituality by tourism use of sites.

Walk trails on-shore biophysical impacts

A total of 20 trails were monitored over the course of this project. Ten of the trails had a distinguishable trail tread which could be described in empirical terms while the remaining ten occurred on a tidal beach environment, or over hard or rocky substrates that could not be described as having any vulnerability to measurable erosion resulting from human impact. Of the ten trails that showed a distinguishable tread, four were assessed in relation to average width and slope. These four

trails (King George River; Raft Point; Careening Bay and Sale River) are representative of trails in the study area that show signs of high visitation, have steeply sloped sections or exhibit a variety of environments along the trail length, attributes that make walking trails in other parts of the world vulnerable to degradation.

It is important to note that the majority of walking trail data and research comes from mountainous areas of the US and Europe (e.g. Bratton, Hickler & Graves 1977; Cole 1983; Leung & Marion 1999). The common contributing factors of trail degradation that have been explored and proven in this literature include in order of importance: slope; soil type; vegetation; climate and use factors (i.e. level and type of use). Other biophysical impacts that can lead to visitor dissatisfaction include litter and badly eroded or dangerous trail conditions (Leung & Marion 1996, 2000). Maintenance features along a trails length such as hardened surfaces and steps/stairs can counteract and mitigate this type of degradation. However, in the case of the study area, land which is important to Traditional Owners and attractive to visitors alike because of its pristine and untouched nature, maintenance features, like litter, are unacceptable to Traditional Owners and detract from the wilderness experience sought by visitors.

Carefully planned walk trails that are conceived and instigated by land managers should always follow the natural contours of the land and avoid steep slopes or wet areas such as swamps making use of resilient soil and vegetation types to mitigate degradation. The trails in the study area have arisen through long or short term historical use and are therefore not aligned or located in the best possible location from a planning perspective, to mitigate potential erosion. Trail proliferation or double tracking is also a problem in high visitation areas and results in further 'lead off trails', as walkers finding it difficult to follow the original trail maintain and enlarge the network of informal trails.

Lush wet season growth of grasses and woody plants in the Kimberley region can confer erosion resistance to trails as a mulch layer is incorporated into upper soil horizon. This dynamic can however be altered by the introduction of introduced grasses and by altered fire regimes, a common problem associated with increased visitation and careless behaviour associated with recreational fire use. Island habitats such as Bigge Island have a fragile ecological nature primarily because often endemic or endangered marsupials can be found inhabiting island environments that have been isolated and protected from cats and foxes while they are absent on adjacent mainland areas. Slow re-colonisation rates are also common for animals and plants as the very isolation that protects them acts against any accelerated recovery from mainland populations that may potentially still exist.

Walk trail conditions

Three walk trails, King George River, Raft Point and Careening Bay were assessed to show average conditions relating to width and slope, the fourth trail Sale River was only assessed for width because of its overall lack of slope Table 7.

Table 7: Average trail conditions of four assessed trails in the study area

	Total Trail Length (m)	Av. Trail Width (cm)	Av. Slope°	Av. Slope (≤ 6° - m)	Av. slope (> 6° - m)
King George River	594	57.1	17.2	2.1° - 174m	32.9° - 420m
Raft Point	422	79.1	21.4	3° - 10m	22.2° - 412m
Careening Bay	182	45	4.5	1.4° - 142m	13° - 40m
Sale River	206	57.2	N/A	N/A	N/A

In total, none of the above trails showed any trail depth below what is to be considered a level indicating degraded conditions of deeper than five centimetres (Mende & Newsome 2006). Compaction from walkers can remove vegetation during initial trail use and over time form a depression which makes a trail easily distinguishable. Any increase in depth can lead to problems associated with the channelling and concentration of surface water leading to enhanced erosion of the trail and subsequently lead to trail widening as walkers trample trail margins in an attempt to avoid dangerous or difficult trail conditions. The reason for this is most likely due to the presence of boulders, rocks and course aggregate both above ground and combined with the clay soils which make up the vast majority of walk trail sites in the study area.

The Careening Bay trail (182 metres) had a minimum and maximum trail width of 30 centimetres and 160 centimetres respectively. Average trail width was the lowest for any assessed trail in the study area at 45 centimetres. This site had a low average slope (4.5º) well below what is considered an erosion risk (≥ 6 º). This trail also followed a dry, seasonal water course for the vast majority of its length which makes this an easily followed trail which is durable to human impact because of its constant reshaping of sandy sections during wet season rains and hard rocky substrate in parts (Figure 28).

Other sections of trail occurring at Careening Bay showed a narrow and typical width (<60 centimetres) not subject to erosion and occurred in a typical Kimberley grassland environment (Figure 28). Resilient grasses such as spear grass (*Heteropogon contortus*) grow rapidly during the wet season forming a dense underground network of roots. Thick above ground growth and sharp irritating seeds that lodge in clothing can discourage walkers from leaving the established trail.

Similarly the Sale River trail (206 metres) had a minimum and maximum width of 45 and 70cm respectively and commenced on a rocky beach then followed a creek line and its margins. The sections of trail not occurring on exposed rock were largely on flat ground and had an average trail width of 57.2 centimetres. Dense underground networks of tree roots (*Ficus* sp. and *Melaleuca* sp.) occurring in association with the freshwater creek and waterhole that makes this a popular spot to visit, confer a resistance to water erosion during floods or trail degradation caused by walkers, by binding trail soil together in sections where soil was present as part of the trail tread (Figure 29).

Both King George River and Raft Point were very steep trails for the majority of their length. King George River (594 metres) had a minimum and maximum trail width of 30 centimetres and 120 centimetres respectively, an average width of 57.1 centimetres and an average slope of 17.2º, with 70% of its entire length exhibiting an average slope of 33º. Raft Point (422 metres) had a minimum and maximum trail width of 40 centimetres and 180 centimetres respectively, an average trail width of 79.1 centimetres and an average slope of 21.4 º. Despite both trails having a slope gradient that would in all probability ensure trail degradation in many sandy or loosely consolidated soils in any high rainfall environment, these two trails showed few signs of trail wear due to the high proportion of rubble and course aggregate present in the soil. The rubble was located above and combined in the soil profile and consolidated by the fine clay soil which held the mass of rock together.

The initially steep King George River trail levelled out on the top of the plateau which was host to the freshwater rock pools that fed the waterfall, the central focus of this popular destination. Here in open and distinctly rockless patches bordered by typical Kimberley grasses, the trail reverted (in sections) to what one would expect from a walking trail with a width of less than 60 centimetres and a compressed trail tread of less than five centimetres, showing no signs of degradation (Figure 30).

Figure 28: Walking trail at Careening Bay showing a durable trail tread occurring on a seasonal water course of both (a) sandy and (b) rubble substrate, and (c) through dry spear grass.

Figure 29: Sale River trail (a) beach landing and (b) trail through durable rocky soil bound together by tree roots.

Figure 30: Wide but distinct rocky paths ascending steeply sloped section of King George River Falls (a & b) and section of the trail between rocky outcrops showing an easily defined trail tread.

Average trail width for the Raft Point trail was wider than an acceptable 60 centimetres or less usually seen on single file walking trails in a variety of environments and this is probably due to there being no real trail tread in this steep and rocky location. It was observed that walkers climbed or hopped from foothold to foothold, being presented with a variety of options of where to put their feet, in doing so, any vegetation growing between rocks in shallow sources of soil are trampled and lost causing trail widening. Fig trees (*Ficus* sp.) were the dominant vegetation on sloped sections. This vegetation loss should not be seen as a significant threat to trail degradation in this instance because of the limited effect vegetation cover has on protecting such a rocky soil from rain drop splash erosion (Figure 31).

The Raft Point trail was similar to King George River in that steeply sloped sections were resistant to degradation due to the high proportion of rubble and aggregate combined in the clay soil. Trail width was the widest for any assessed trail in the study area and probably due to the popularity of this location and the ease of travel over the rocky substrate as visitors are able to walk side by side on this trail (Figure 31) because of the open nature of the surrounding trailside vegetation which comprised short tussocky grasses (*Spinifex* sp.) scattered woodlands of boab *Adansonia gibbosa* (*gregorii*) and white gums (*Eucalyptus* sp.).

Figure 31: Raft Point trail, the widest assessed trail in the study area showing relative ease of travel as two walkers ascend side by side.

Figure 32: The popular Mermaid Tree in Careening Bay, a healthy boab inscribed with the details of the Mermaid, a passing ship that beached (careened) for repairs and to take on water supplies in 1820.

On both the King George River and Raft Point trail, trail proliferation in the form of parallel trails and lead off trails was common, King George River had five parallel trails and only two lead off trails. Raft point had a total of ten lead off trails that radiated from only one main trail with no parallel trails present. Lead off trails generally form through exploratory behaviour such as the search for a shortcut and are maintained by subsequent users, parallel trails are formed in areas of indistinct trail and this can be the case in the study area at the beginning of the high visitation period as vegetation growth rapidly covers the trail during high rainfall and humidity periods during the wet season somewhat obscuring the previous years trail tread. Visitation during the wet season is low to non existent as this is the cyclone risk period and features very high temperatures, high humidity and large numbers of insects such as sand flies and mosquitoes which make any outdoor experience unpleasant. Careening Bay had three parallel trails and three lead off trails in a relatively small area as the trail circled the Mermaid Tree and signage erected by the Department of Environment and Conservation to commemorate the careening (beaching for repairs) of the Mermaid in 1820. Although there was a number of lead off trails and parallel trails at Careening Bay, the presence of fast growing wet season grasses meant that any newly trampled trails still had the protection of a mulch layer and under trail network of fibrous grass roots which was still evident in May during field observations and offered excellent erosion protection (see Figure 28).

The remainder of the assessed trails which had a definable trail tread (six in total) were assessed for degradation indicators such as parallel and lead off trails; root exposure; litter; toilet paper and visual evidence of erosion from both water and wind. The dominant trail habitat was recorded and any maintenance features were also recorded. Maintenance features such as hardened surfaces, steps, climbing aids and signs/markers are usually erected in high use areas to mitigate or control the effects of climate or use factors on the trail tread. In the case of the study area maintenance features are seen as detracting from both the wilderness experience of visitors to the area and more importantly to the sense of country and spirituality of the Traditional Owners.

Of the 20 assessed trails 15 had rocky shore habitats ideal for boat landings and access from a trail degradation standpoint as hard rock surfaces do not show measurable erosion due to human impact at any rate that that is relevant to this study. Litter and toilet paper was of very low levels with 18 of the assessed trails exhibiting no toilet paper present at all and 14 of the assessed trails showing no litter at all. However, it was noted on all of the shore visits to all locations that tour operators and some visitors alike had a tendency to collect rubbish, taking it back to the boat for proper disposal. Visual evidence of erosion was also very low with 18 of the assessed trails showing no signs of erosion (Table 8).

Table 8: Summary table of trail descriptions and results

		Site																			
		Raft Point	Careening Bay	King George River	Sale River	Crocodile Creek	Vansittart Bay 1	Vansittart Bay 2	Camden Harbour	Jar Island	Langgi	Bigge Island	Hidden Island	Camp Creek	Kings Cascade	Berkley River	Red Cone Creek	Sheep Island	Rothsay Waters	Prince Regen River	Hunter River
General trail conditions	loose						•	•													
	firm		•		•				•	•		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	rocky	•		•		•					•										
Major habitat	grassland		•					•	•	•											
	woodland	•	•				•						•								
	fresh waterhole			•	•	•								•	•	•					
	rainforest				•																
	mangrove		•	•											•				•	•	•
	mudflat						•														
	beach/foredune		•		•		•	•		•	•	•	•					•			
	rocky coast	•		•		•		•	•	•	•	•		•	•	•	•		•	•	•
No. of parallel trails in Close Vicinty	0	•			•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1																				
	2																				
	3		•				•														
	4																				
	5			•																	
No. of lead off trails	0				•	•	•				•	•	•	•	•	•	•	•	•	•	•
	1							•													
	2			•					•	•											
	3		•																		
	4																				
	≥5	•																			
Root Exposure	none	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	slight																				
	moderate																				
	severe																				
Presence of human sourced litter/rubbish	none				•			•	•	•		•	•	•	•	•	•	•	•	•	•
	1-3 pieces	•	•																		
	4-6 pieces			•			•				•										
	>6 pieces					•															
Toilet paper (pieces)	none	•		•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1-2 pieces		•			•															
	3-4 pieces																				
	>4 pieces																				
Visual evidence of erosion (trail condition)	none	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	rutting																				
	stepping																				
	gullying																				
	rill																				
	sheet wash																				
	puddling				•																
	surface crusting																				
	blowout																				
	bank collapse																				
Maintenance features	none				•		•				•	•	•			•	•	•	•	•	•
	markers							•						•							
	stone cairns	•		•											•						
	steps					•															
	signs		•						•												
	hardened surface					•															
	shade bower					•															
	rope (climb/moor.)									•					•						

It is important to include those trail sites in the assessment that have cultural or historical significance and any known threatened ecological communities within the impact zone. Sites known for rock art or burial sites or those with Anglo-historical features such as colonial artefacts or graves, attract visitors for the interest value in a beautiful but often bleak and harsh landscape. These sites need to be given special consideration because the feature of interest is the very reason that travellers are attracted to the particular location.

One turtle rookery with roughly ten identified successful nests (at the time of visitation) was located on the landing beach at Bigge Island: the green turtle (*Chelonian midas*) and possibly flatback turtle (*Natator depressus*) are using this beach as an active nesting rookery and there is no indication to visitors that this is the case. On-shore observations noted that visitors can potentially trample over turtle nests that occur in the foredunes of this site which is also an important and significant rock art and burial site (Table 9).

Table 9: Important cultural, natural and historical sites that occur in the study area

	RP	CB	KGR	SR	BI	Cr. C	VB-1	VB-2	CH	JI	HI	Ca. C	KC	BR	RCC	L	SI	RW	PRR	HR
rock art/cultural site	•		•		•			•		•						•		•	•	•
Turtle rookery					•															
Historical site		•					•		•								•			

Of the 20 visited sites, nine were found to have rock art or associated with the location. At the majority of the rock art sites the paintings were located high on overhangs or situated in such a way that it would take considered intent to touch or rub against a painting. The rock art at Bigge Island, however, was located on the walls and ceiling of a low roofed cave and adjacent tunnels, often requiring a visitor to stoop whilst inside. Therefore, exposing the art to physical abrasion from backpacks hats and direct hand contact in these narrow passages and low overhead ceiling space (Figure 33).

Figure 33: Rock art site on Bigge Island, where much of the art is situated in tight tunnels making it vulnerable to direct touching and abrasion, such as from backpacks.

Walk trail maintenance features

Maintenance features such as hardened surfaces, steps, signs and shade bowers can help to maintain and mitigate degradation of walking trails in a variety of environments worldwide. These features often encourage a walker to stay on a defined trail and therefore avoid the development of trail proliferation or double tracking. Given that the durability of the soil in the study area confers erosion resistance due to the high level of rocks and boulders that comprised the soil substrate, it would be unwise to harden or install any maintenance features. The reasons for this not only stem from a lack of need but because the experience sought by the majority of visitors is a 'wilderness experience' based on remoteness (Kliskey 1988). Therefore, maintenance features detract from the perception of a pristine location that visitors have when they visit the Kimberley coast.

In this context, maintenance features on trails in the study area degrade the locations 'wilderness status' and therefore, trails that show a high level of these features can be counted as being highly degraded. Crocodile Creek was one such place, with the installation of concrete steps, steel handrails, mooring ropes, hardened surfaces, a shade bower and a concrete and steel barbeque. Situated close to a mining lease on Koolan Island, Crocodile Creek has been maintained and developed by miners as a recreational facility. Passing yachts also add to a collection of hanging memorabilia adorned on the steel shade bower that covers the barbeque and hardened concrete surface.

This site recorded the highest level of litter of any site in the study area with items such as rusted steel bed frames and broken beer bottles that had been included in the concrete footpath (during initial construction) leading to the barbeque and now eroded to expose several sharp edged hazards (Figure 34).

Figure 34: Crocodile Creek trail showing broken bottles incorporated into the hardened concrete surface leading from a set of steps with steel hand rail at water level to a shade bower and barbeque area

Other maintenance features found on several trails included stone cairns or markers that guided visitors along a trail, King George River trail having the greatest number of these. Markers such as informal flags made from discarded cloth and erected in trees near mooring points or ropes tied to trees to indicate an entry point for a trail were also observed on some trails and in a few observed cases disassembled by following tour operators that viewed them as unsuitable. Signage at the Careening Bay site has been erected as an interpretive guide to the history of the location and occurs around the Mermaid Tree.

Montgomery Reef

Montgomery Reef represented a shore visit that did not in any way have a trail associated with it, but occurred on reef flat sandwiched between several small islands. Montgomery Reef is close to Raft Point and is roughly five square kilometres in size. Visitors were put ashore during one observation trip and walked on the reef surface for the duration of the shore visit (Figure 35).

Figure 35: Shore visit to Montgomery Reef (a) showing tenders grounded on reef and (b & c) visitors spread out walking on the reef surface

During one observation trip, roughly 40 visitors were observed trampling the reef surface to move between groups discovering organisms such as snails and shellfish. There was an observable lack of coral diversity on the reef surface and what corals were growing (*Platygyra* sp. or brain coral) were more resilient to some degree from trampling impacts. This resilience is only due to the fact that these corals are the non-branching type and small (e.g. Liddle & Kay 1987; Newsome et al. 2002). Further research would have to be carried out to confirm whether the coral community on this reef platform in the impact area is low in diversity. Research on *Platygyra* sp. in the Pacific region indicates growth rates of between 5.4–9.7millimetres a year as being temperature dependant between the respective ranges of 24–29 C (Weber & White 1974). However a range of other factors affect growth rates such as water depth, water movement and ambient sediment load and natural disaster events such as cyclones, exposure at low tide events and presence of other competitive organisms such as borers (Lewis, Axelsen, Goodbody, Page & Chislett 1968; Macintyre 1972).

The early indication from observations would, however, indicate that a high recruitment rate is likely in the high visitation access point as the *Platygyra* sp. corals that were seen growing amongst large giant clams on the reef surface (which can be 80–100 years old), were on average 10–50cm^2 and therefore between 3–10 years old. This would indicate a high recruitment rate of this species due to repeated trampling impacts is likely.

Given that a number of tour boats visit Montgomery Reef for the express purpose of shore visits that focus on reef walking, the impacts of reef trampling would most likely be highest near the access points where visitors are put ashore and lowest at points further away from the shore margins towards the inner reef platform. More research would need to be conducted to confirm this.

Visitor behaviour and management

Many of the concerns leading to this study relate to visitor activities at on-shore sites or activities carried out in tender vessels. Currently, there are no management plans or operational standards for sites other than the DEC managed Prince Regent Nature Reserve and Mitchell Falls National Park, resulting in an overall lack of coordinated management at the majority of sites. The isolated nature of the sites also confounds management issues and there is no permanent management presence at any of the sites. Sites managed by DEC have some signage and infrastructure such as trail markers and rope anchor points have been added for improved safety and limiting impacts. It is important to highlight that while this project focuses on expedition cruise operations, sites are also regularly visited by private vessels and recreational users from mine sites, pearl farms, aquaculture and other industries located in the region. Given the independence of recreational users and private vessels, their activities are likely to be more difficult to control and manage than expedition cruise operations which are organised as an industry and whose longer term operations are reliant on maintaining the pristine nature of the area.

The following sections discuss the results from the visitor observation studies (cf. Chapter 2 – Methodology). The results can be broadly divided into three categories: visitor experience, safety issues and education and interpretation.

Visitor experience

Expectations

Matching individual's tourism experience with their expectations can be a difficult task, particularly in natural settings and in relation to wildlife interactions. Some passengers on one of the observed expedition cruise tips along the Kimberley coast arrived with expectations built from information sources including marketing brochures, TV programs, live-long dreams, word of mouth, or simply by their own perceived images of the area and activities. Some passengers had done considerable research about their trip and different operators, with one passenger explaining that their choice of operator was decided by them offering rooms with built-in toilet facilities. Two of the five participating operators stated that itineraries are somewhat flexible (within the limits of environmental conditions such as tides) to suit the participating group and during trips consulted with the passengers on their preferences for activities. In a cohesive group environment, this may work very well while in other situations an individual or part of the group which is more vocal may dominate the decision making process to the potential detriment of other passengers. For example, a passenger on one trip declared right from the start that their only expectation was 'to catch a barra[mundi]'. While barramundi are present in the area during the entire year, according to the operator, the trip was outside of the favourable season for barramundi catch. During the second half of the trip, all but the particular passengers with interest in fishing had landed their barramundi catch. Due to the strong voicing of their desire, increasingly, the itinerary was adjusted to include more fishing time. Quieter passengers without interest in fishing remained on the main vessel for most of the fishing time, though at times the operator offered to take a tender to watch birds and other wildlife.

External factors including seasonality, weather (including extreme events such as droughts or cyclones), ecological and biological factors (such as wildlife breeding patterns) can influence the visitor experience in a natural environment. While these factors are outside of the control of the operators, the expectations by visitors can be managed. For example, a study by Orams (2000) on the whale watching operations indicated that the education, interpretation and attitude by operators may go a long way towards a satisfactory experience, and that such an experience is not entirely dependent on actual wildlife interaction. The seasonality of some of the waterfalls is another factor potentially affecting the visitor experience, particularly as much of the marketing utilises images of waterfalls in full flow as generally only observed at the beginning of the tourist season. Experiences that do not reach expectations have the potential to negatively affect visitor satisfaction. Operators may be able to

address potential gaps between expectations and actual experiences through measures such as providing appropriate information, education and interpretation and in their activity planning. For example, by explaining the tidal situation relevant to the Horizontal Waterfalls at Talbot Bay, passengers arriving during a neap tide with little tidal variance are likely to be less disappointed, even though they might have otherwise expected much stronger tidal activity. The management of expectations is also important in relation to activities and may have implications on visitor safety. For example, when passengers were advised about the high level of difficulty of certain walks, such as to the top of King George Falls, several passengers chose not to participate in the activity.

Crew training

On the observation vessels, the friendliness and competency of the crew was another factor of importance to visitors, as indicated by passenger comments and entries in visitor books. Passengers frequently made positive comments on the efforts and personalities of crew members and often provided very positive comments in the visitor books maintained by some of the vessels.

Group dynamics and operator response

Apart from trips chartered by specific groups, most passengers meet for the first time during transfer to the vessel or when boarding. Personal space on vessels is limited, though this varies between vessel types and sizes. Thus, the group dynamics that develop over the five to 14 day duration of a trip are likely to influence the visitor experience. An even visitor profile (i.e. similar age group) may assist in fostering positive relationships and make it easier for operators to plan suitable activities. Nevertheless, personal characteristics or behaviours can have a marked effect on group dynamics. Examples from observations include the development of negative group attitudes toward an individual who repeatedly defied crew advice, vocal passengers influencing change of itinerary towards their activity of preference, or endless humorous dinner entertainment by a passenger fostering group collegiality.

Appropriateness of activity

It was observed that the combination of at times rugged terrain, changing conditions and elderly visitors, many of which are in their 70s and 80s, required planning of appropriate activities. The physical capability of individuals varied considerably on different trips. Ease of access and comfort is an important factor in activity planning and delivery, particularly given the advanced age of many visitors and the target market being retirees. To allow for less agile individuals or groups, operators were observed using strategies such as adjusting the itinerary to visit more easily accessible sites, placing crew in strategic positions or with specific people to provide assistance, or offering alternative activities. It was, however, left to the visitor's discretion whether they participated in activities. On occasion, this occurred against the advice of the guides. This resulted in the whole group being slowed down or being split up. On one occasion, a passenger needed two of the three guides to assist them along a trail, while the remainder of the group went ahead with the single remaining guide. This could potentially compromise the safety of the passengers that went ahead.

Interaction with other groups and vessels

Crowding was one of the issues repeatedly raised by some operators who expressed that the visitor experience was changing, with more and more boats visiting the same sites and visits by different vessels sometimes coinciding. The feelings expressed by a repeat visitor highlight some of the issues:

> Last year, there were five ships at some sites because of the tides. We came to have a 'wilderness' experience and ended up competing and racing against each other.

> The helicopter of [operator] was very inconsiderate. It landed right next to us and blasted us with sand and then they took over the site even though we were there first!

While there was some communication between operators to arrange their visiting schedules and minimise interaction, the outcomes were not always as expected. For example, two of the larger vessels had communicated with each other and agreed that coinciding visits at Montgomery Reef would be no problem. However, when the second vessel turned up, two additional charter vessels of similar size and some private vessels were also anchored in the small lagoon of the reef, resulting in the operator having to choose a different anchoring location along the outside of the reef. The operator was hesitant to decide whether to join the other vessels in the lagoon or go elsewhere, because the channels accessible by tender from the lagoon potentially could have provided a better experience to the visitors driving along the edge of the reef.

In another example, an operator planning to anchor overnight at King Cascades in Prince Regent River had consulted with another nearby operator who mentioned that they were planning to visit the cascades the following morning. Despite the communication, an excursion vessel from the other operator turned up after the first vessel had anchored in front of the cascades, asking them to move so that they could take photos and experience the falls. Due to the outgoing tide, there was only a short window of opportunity to still do so without the risk of getting stranded.

During the observation trips, the highest number of operators encountered at any one site was four, which was observed at Raft Point, Montgomery Reef and Talbot Bay. Nevertheless, a number of private vessels were also encountered, particularly in the Berkley and King George Rivers. Overall, there was little interaction with private vessels, though in the case of a private vessel visiting King George Falls while a tour group was walking to the top of the falls, the screaming and shouting of the yachties as they showered under the falls travelled a long way. Boat traffic in King George River was considerable for such a remote area, with about six private vessels being anchored or sailing to the falls on the day.

Some commercial vessels appear to be travelling almost in tandem, having similar departure and arrival dates and travelling in the same direction. While they appear to communicate well and stage their arrival time at sites, there is sometimes overlap, particularly with vessels travelling in the opposite direction and where the window of opportunity due to tidal conditions is small. One operator mentioned that there were considerably less vessels between Wyndham and Mitchell Falls than between Mitchell Falls and Broome, and that the latter section was becoming crowded. Factors contributing to this pattern include the comparatively rough sailing conditions in the northern section, length of trips offered (few operators offer 14 day trips covering the entire distance between Wyndham and Broome) and refuelling opportunities. Several operators have mentioned that the establishment of a fuel barge at Dogleg Creek has resulted in increased small vessel (<25 metres) traffic north of the refuelling point, allowing vessels with limited fuel capacity to travel further.

Having several operators at particular sites made apparent some inconsistencies between operations. For example, while some operators explained to their passengers that reef walking was detrimental to Montgomery Reef, groups of up to forty passengers from other vessels were walking on the reef. Similarly, a site explained by one operator to be off-bounds to visitors on Bigge Island was visited in sight of the first group by passengers from another vessel arriving shortly after. Such inconsistencies often force operators who are not doing the activities to justify their action to their passengers. Given an explanation (e.g. ecological damage to the reef; respecting the wishes of the Traditional Owners), the observed reaction by passengers was very positive, with passengers commenting on taking pride in travelling with the 'good' operator and not the 'dodgy' one.

Safety issues

The tourism industry can be very susceptible to negative publicity. The reduction and management of risk is a vital component of a sustainable tourism industry along the Kimberley coast. The remoteness combined with partly uncharted waters, large tidal differences, rugged environment and potentially dangerous wildlife add further importance to the need for strong risk management. A number of fatal incidents have occurred, namely the high profile death of Ginger Meadows, an American model, who was attacked and killed by a crocodile at King Cascades in the 1980s; and the death of a passenger who fell to their death off a cliff while on a commercial tour at Mitchell Falls in 2005; a crew member who received fatal injuries after a fall of a cliff at King Cascades in May 2007; and the drowning in June 2007 of a passenger at the Horizontal Waterfalls in Talbot Bay, after a tender vessel capsized. Even before the latest events, a series of incidents in Talbot Bay relating to boating activities at the Horizontal Waterfalls raised concerns and resulted in the formation of an inter-agency forum in early 2007 to discuss regulatory and management issues at this site. The observational studies identified three key areas of safety aspects relating to excursions from the main vessel. These were operational aspects, visitor management and activity choice.

Operational aspects

On the larger vessels, virtually all activities other than transit between key sites and whale watching rely on the use of tender vessels ranging from alloy dinghies and zodiacs to inflatable rescue boats (IRBs) and purpose-built excursion vessels (cf. Chapter 4). Even the smaller vessels all rely on tenders for on-shore excursions and most activities. Thus, boat and tender operations are probably the most important factors in terms of safety for the Kimberley cruise ship industry. The key focus and concerns for government agencies such as DPI and DOCEP also largely relate to operational aspects. Concerns include the operation of inadequately specified vessels, inadequate maintenance, overloading of tenders and engagement in high risk activities and have resulted from passenger complaints, operator reports

and reported safety incidents, most of which specifically relate to activities at the Horizontal Waterfalls in Talbot Bay. The Horizontal Waterfalls is one of the most visited sites along the Kimberley coast, with two operators who are permanently stationed in the bay conducting fly-in fly-out operations. The site is also on the itinerary of the majority of expedition cruises (cf. Chapter 4). The crossing of the Horizontal Waterfalls is deemed a particularly high risk activity and most operators are enforcing considerably stricter safety measures than at other sites. Such measures include the wearing of life-jackets, reducing the number of passengers per vessel and running vessels in tandem to be able to assist each other in the event of an accident. One operator asked their passengers not to take photographs while going through the falls due to the potential for injury, as a passenger had previously been injured doing so. The force of the Horizontal Waterfalls, and thus the risk of crossing, varies considerably with tidal activity, thus the timing of operations and on-site assessment of the situation by the individual operator is highly important. Nevertheless, operator experience and vessel capacity are also highly important aspects and can be affected by staff turnover.

Risks imposed by environmental conditions on the remote area operations along the Kimberley coast include tidal variations of up to twelve metres, potentially dangerous wildlife and seasonally changing conditions. For example, following a late afternoon on-shore excursion, one tender vessel ran aground on the return trip to the main vessel due to the rapidly outgoing tide and was stranded for a couple of hours in the dark. The second tender vessel returned to the main vessel to avoid also being stranded. While the crew from the stranded tender vessel could communicate with the main vessel by CB radio and had provisions onboard such as drinking water, insect repellent, first aid kits and on-board lights, the passengers had to sit and wait for the tide to return. Crocodiles had been sighted in the area and elderly passengers who were on-board expressed their fear. It was an anxious wait for all passengers who cheered when the tide came in and the vessel was able to return. In another situation, a tender was washed up onto rocks and nearly got stranded as passengers were trying to remove fishing line that had been wrapped around the propeller of the outboard motor. Considerable changes to rivers and estuaries occur during the wet season. To avoid running aground, one of the operators maps out some of the river entrances at the beginning of the season, measuring the depths and recording a path to navigate the main vessel through safely.

Observations revealed considerable differences in tender operations. There are inconsistencies between operators in the use of life jackets and the maximum number of people per tender vessel. In a couple of situations, up to nine people were transported in tenders that only had three life-jackets. Some operators limit the use of life-jackets to perceived high-risk operations, namely the crossing of the Horizontal Waterfalls at Talbot Bay, while other operators provide lifejackets to passengers on all tender excursions. Considerable differences also exist in the accounting for individual passengers when leaving the main vessel or leaving shore-based sites. Accounting for passengers ranges from no measures, through to an occasional headcount to a tag-on tag-off system for individuals upon leaving and returning to the main vessel. It was observed that often people would return to the main vessel in a different tender than the one they left the main vessel. For example, in the case of a shore excursion with two tenders, one tender with crew and some passengers moved on to a different location in the absence of the crew of the second tender (which had gone exploring out of sight), leaving visitors unattended on a beach and the crew without the means for accounting for the full number of passengers.

Crew communication and briefing were other important operational aspects. While some operations appear to have continuous communication via portable radios and were briefed on the expected return time and activities, other operations do not carry radios. It was observed on two occasions on one vessel, that crew on tender vessels did not have watches and did not know what time they were supposed to be back at the main vessel. Given the areas extreme tidal variations, miss-timing could make the difference between being stranded in this isolated environment for several hours or getting back to the main vessel.

Crew experience, local knowledge and training also play an important role. For example, it was observed on one occasion that a tender vessel with several crew and passengers went to visit a waterhole which none of the crew or passengers had been to before. Thus, the description of the difficulty of access by one of the crew to a concerned passenger was inaccurate, followed by an uncomfortable attempt by the passenger to access the site rather than to wait in situ. While most operators indicated that they have some induction processes for new crew, adoption of such measures across the board, addressing both the crew's on-board roles as well as roles and protocols during activities and excursions, should be standard practice and could prevent many potential operational problems. This is particularly important given the seasonal nature of the industry, with problems of high staff turnover.

Equipment such as first aid kits, Electronic Positioning Emergency Radio Beacons (EPERBs),

torches and citizens band (CB) radios are essential for operations in the Kimberley environment and should be compulsory not only on the tenders but also for on-shore excursions. On the vessels observed, tender vessels were generally equipped with CB radios which enables them to communicate between tenders and with the main vessel. Some operators carry walkie-talkies during their on-shore excursions. On on-shore and reef walks, generally one or two crew members were equipped with first aid kits, though on one occasion on an observed vessel, the crew forgot to bring the kit along. A supply of drinking water was carried by crew on trips or provided at refill stations for passengers at the start of the walk. The wearing of appropriate footwear is also an issue to be considered, particularly with view to the potential need to provide assistance to passengers in the case of an emergency and the sometimes steep and rocky terrain. Crew on one vessel were observed on occasion to go barefoot and some passengers followed this example.

Given the remoteness of the area and difficulties of hospital access if required, steps for incident prevention and response are important. Even minor incidents should be taken seriously, treated and recorded. This would not only aid in the continual review and assessment of risks and thus could lead to improvements in practice, but would further inform the risk assessment of activities and sites.

Injuries observed during the trips ranged from abrasions, grazes, cuts and bruises sustained in falls, during reef walks and while oyster collecting, to being stung by the barbs of a fish and a back injury aggravated during the crossing of the Horizontal Waterfalls. One passenger sustained a deep cut to their scalp from the barb of a lure in a cast by another passenger while fishing off a tender vessel. Another passenger who slipped and did a somersault on the descent from the top of King George Falls, which left them with severe abrasions and grazes, was treated on-site by an accompanying medical doctor. Yet another passenger complaining of severe back pain after the Horizontal Waterfall crossing was treated by the crew after consultation with the Royal Flying Doctors Service. Some of the tracks present considerable physical challenges to some passengers (particularly some of the elderly or mobility impaired passengers), while other activities such as the crossing of the Horizontal Waterfalls presents inherent dangers as already discussed.

To reduce complications in accidental ‘hookings’ of passengers during fishing, operators generally crushed the barbs on fishing hooks and lures to make removal easier. Dangerous practice, such as sideways casting over the heads of other passengers or washing hands in the water, should be immediately addressed and simple steps such as enforcing the wearing of hats and glasses during fishing could reduce the risk or severity of head and eye injuries from casting.

A thorough risk assessment and management process with implementation and enforcement at crew level is highly important for the industry to be sustainable from a risk management perspective. Proper risk assessment could potentially be encouraged by incentives such as reduced insurance premiums, making it a component of the accreditation process or through regulation.

Safety briefings are an integral part of the risk management process. This includes safety briefings about vessel operations, such as the location of life jackets and evacuation strategies and should include tender operations. While most of the studied operators gave an extensive vessel and operational safety briefing, others were more casual in their approach. For example, the location of life jackets on tender vessels by one operation was not mentioned even though they were stowed away out of sight. The provision of safety briefings about some of the natural hazards, such as the presence of crocodiles, varied from site to site and between operators, from regular reminders about the dangers and how they could be avoided, to no mention at all. One operator only mentioned the issue of crocodile safety when questioned by passengers, but people continued to wash their hands in the water when fishing on tenders, searching for shells along the waters edge with their backs to the water, and even played in the ocean, being immersed up to hip deep without any advise by the crew of the potential dangers of such actions. This operator also offered ocean swimming (this time with croc-watch by crew) at several locations. Most of the observed operators, however, had much stricter risk management processes in place for crocodile safety. Measures included the surveying of the onshore landing area from the tenders, instructions to visitors to quickly move away from the water’s edge once on shore and not to turn their backs to the water, strictly no swimming except in approved areas (i.e. freshwater pools above the high tide mark), the checking of freshwater pools by crew for crocodiles before anyone was allowed to swim and the holding of croc-watches by crew. Two of the observed operators allowed passengers to swim in the ocean at a number of locations, while one or two crew members held a watch for crocodiles. At one location (Ruby Falls, Red Cone Creek), the majority of vessels observed advised their passengers not to swim in the bottom pool because crocodiles had been sighted previously, while others let their passengers swim without even a visual check. In one instance, a large saltwater crocodile was sighted on the cascades to the waterhole on arrival, raising concerns amongst the passengers about the safety of the pool. Nevertheless, they were assured by the operator that the waterhole would be crocodile-free because of low temperature, lack of food source and that other

groups would have swum in the pool earlier that day. The operator later mentioned in casual conversation that most other groups generally go up to the higher pool for a swim. Further safety issues and examples related to group management are discussed in the following section on visitor management.

Vessel security at present does not seem to be an issue given the current number of vessels and the remoteness of the area. According to one of the operators, any incident of theft or vessel intrusion would quickly be communicated between the operators. Thus, the likelihood of a vessel in the area at the time of such an incident going undetected is relatively small. Nevertheless, with the growth of vessel traffic along the Kimberley coast and with anecdotal reports of vessel boardings and theft from cruise vessels by suspected private boats and illegal fishing boats, security measures such as the locking of the vessel when on excursions or the constant presence of a crew member on board the main vessel may need to be considered. It should also be a safety precaution to have a crew member on board the main vessel in case of an accident on the excursions. The main vessel can communicate with outside help, while the tender vessels are not necessarily equipped to do so.

Visitor management

Key visitor management issues identified during observations included group size, mobility/age, group control and appropriateness of activities, some of which were discussed in earlier sections. The management and control by operators of individuals and groups observed during observation trips varied dramatically. The three emerging areas to be considered were the pre-activity briefings, visitor guidance, control and assistance during on-shore excursions and group management.

Some operators had clear structures and protocols in place which began with pre-activity briefings that discussed the type of activity, potential hazards and gave advice about what to wear, where to assemble, backed up by appropriate instructions and assistance by crew. Such information could have helped to alleviate anxiousness expressed by passengers on one trip who were concerned about not knowing what would be appropriate footwear for particular sites.

In the observed operations with clear structures and protocols, passengers were kept together once on shore and crew were strategically placed with a crew member in the lead and at the end of the group, with assistance being provided at difficult passages. Other operators took a much more relaxed approach, resulting in situations where passengers were going on ahead of crew, or slower passengers were being left to their own devices and having to wait at difficult passages until crew which had tied up the tenders finally caught up with them to assist them. Such situations render the potential for passengers to wander off the path, to be lost, injured or to wander into culturally sensitive areas. It may also cause stress on the individual and affect their perception of their overall experience.

Visitor management observed at specific sites was also highly varied. For example, at Raft Point, most operators ensured that visitors remained together as a group and some advised visitors not to access the caves, particularly the lower cave, in respect of the wishes Traditional Owners. One operator, however, encouraged visitors to explore the area and provided considerable time, advising passengers to stay in groups for safety reasons. One vessel allowed passengers to explore freely and directed them to the top of the plateau at Raft Point. Self exploration has similar issues as mentioned above in the discussion regarding passengers requiring assistance, but particularly in regards to potential for injury and entering culturally sensitive areas.

Examples of visitor management situations with potential risk to individuals or the group included observations of individuals leaving the group to explore the area without advising anyone, on other occasions passengers were going well ahead of the lead crew who were assisting slower passengers, and in one instance were already jumping off cliffs several metres high into a large rock pool by the time the crew arrived. In other situations, operators had taken obvious precautions to minimise high risks, such as the crossing of a slippery creek where the crew used a mat placed in the creek and formed a human chain to assist the passengers in the crossing.

Activity choice

Activities need to be appropriate to the capability of the participants, the location, the environment and the timing. Access to many sites in the Kimberley is restricted by tidal activity to a small window of opportunity. Some activities may not be appropriate because of environmental or cultural parameters, such as swimming in the ocean due to saltwater crocodiles, or swimming in still freshwater pools, due to spiritual significance of such pools (cf. following section on cultural impacts). Other activities such as cliff jumping into freshwater pools may be deemed high risk. Some activities may simply be too difficult for some people to access or too rough for some people to handle due to the limited mobility of some aged passengers. For example, as already mentioned, during one of the trips an elderly passenger insisted on participating in the crossing of the Horizontal Waterfalls despite back problems.

After the crossing, the person was in severe pain for several days. Effective group management is not only important from a safety perspective, but also in terms of ecological and environmental impacts as discussed in previous sections.

Education and interpretation

Education and interpretation can not only enhance the tourism experience, but has the potential to leave a lasting impression, to create attitude change and to break down cultural stereotypes and environmental misconceptions (Ham & Weiler 2006). It can also assist in generating a better understanding of cultural and environmental issues and as such may foster more appropriate visitor behaviour and benefit group management. Education and interpretation is a key component of marketing by many operators, with statements such as 'on-board biologist' and 'twenty years' experience' potentially alluding to their cruise experience encompassing an education and interpretation component. Observed passengers displayed interest in information about the ecology, environment, history and culture relating to the area or specific sites. It is likely, however, that there are considerable differences between the weighting of education and interpretation between vessel/operation types.

In the context of expedition cruises, education and interpretation was observed to occur on board the vessel through background briefings, topical presentations or printed information provided to passengers, or at specific sites such as through interpretive talks by guides. Information was activity or site specific, such as the story relating to a particular rock art site, or of more general nature, such as the potential impacts of littering on native wildlife. The five areas emerging from the visitor observations and discussed in the following sections are: staff knowledge and demonstration, group size, relevance and timing of information, reinforcement / learning and information resources.

Staff knowledge and demonstration

As reported from observations on safety information, there were similarly vast differences observed between individual crew members as well as between operators on environmental, cultural and historical knowledge. While some crew had a wealth of knowledge about the areas visited, others knew near to nothing and were unable to respond even on a basic level to passengers seeking some background information. For example, a passenger on the plateau above King George Falls asked a crew member in charge of the group: 'So now are you going to tell us about the history, geology, flora and fauna of the area?' The crew member responded by laughing and just kept on walking without providing any further information. Similarly, during a tender ride along the edge of Montgomery Reef, the crew member in charge of the tender vessel was prompted by a passenger to provide some information about the reef. The crew member's entire response was: 'It [the reef] looks like it's dead, but it's not'. Apart from pointing out some turtles, this was the only information given on the reef and was considered to be quite funny by the crew, who shortly after suggested to the passengers to go fishing instead of continuing the reef tour as the other two tender vessels did for another 45 minutes. Thus the individual experience of visitors and their access to information and interpretation can be highly dependent on which crew member is in charge of their tender vessel or is participating in the on-shore excursion. Where strong differences existed, it was observed that some passengers became very selective about which tender vessel they chose to board, often insisting that they would be with a specified crew member.

Staff retention is an important factor in the provision of the quality and breadth of information by crew. It was mentioned that high staff turnover meant that there was little capacity for knowledge development and the time needed and cost of training to the operator is lost when a staff member leaves the position. The seasonal nature of the operations is also likely to contribute to staff turnover, as crew members seek work elsewhere during the off-season and may not return. Crew are required for a range of skills and qualifications, this includes legal requirements in terms of vessel operations. Thus at times, operators commented that they employ crew with extensive boating experience and qualifications, such as crew from crayfishing vessels during their off-season, but with little personal interest or site specific knowledge relevant to the tourism experience.

There is also considerable variability in the *accuracy of information* provided to visitors, particularly with regards to cultural and ecological sites. It was observed that some crew members frequently offered what appeared to be their personal interpretation of matters which, in some examples, was considerably different from documented information. As discussed in the following sections, this is a matter of particular importance to the Traditional Owners.

Group size

The ratio of guides (as opposed to general crew) to passengers can affect the quality of the interpretation experience. For example interpretation of rock art paintings provided by a guide from one of the observation vessels inside the Bigge Island caverns could not be heard or seen by the entire group and resulted in people trying to get closer to the guide, inadvertently touching or brushing up against the cavern walls. It may also be more difficult to control and observe activities by individuals, the higher the guide to visitor ratio. As discussed previously in the section on visitor safety, group size and guide to passenger ratio may also influence the ability of crew in managing visitor safety and impacts on culturally sensitive sites.

Relevance and timing

Some of the Kimberley expedition cruises cover a lot of area in a relatively short time frame, visiting many different sites along the way. For passengers new to this area and to boat travel, there is a wealth of new information to process, including general information about the region's history, culture and ecology as well as leave-no-trace principles and safety instructions; and site specific information such as relating to Aboriginal rock art, site impacts and specific activities. The timing and relevance of such information is important to avoid information overload or boredom with detail. On observation vessels, much of the general information was provided repeatedly over the duration of the trip and in different forms, such as through passenger briefings at the beginning of the trip and reinforcement before on-shore excursions. Some operators provided site specific information in print to passengers the day before going to sites, providing the guides at the sites with the opportunity to expand on specific details and to give examples. Most vessels also provide on-board resources such as DVD's and books relevant to the area (see below). Some larger vessels offer nightly presentations on various topics relating to the area. Most of the observed operators provided an informal briefing reviewing the day's travel and the following day's activities,

Information resources

Some of the observed operators have compiled and developed materials about the region's history, culture and natural features to encourage passengers to develop a better understanding and appreciation of sites visited and thus enhancing the tourism experience. Printed information ranged from daily information leaflets about upcoming sites to guide books and maps handed out at the beginning of the trip to enable self-paced study and tracking of the trip route. Most of the observation vessels also had an on-board library with books and DVDs on the Kimberley region.

Cultural Impact of Tourism on the Kimberley Coast

The main concerns raised by the Traditional Owners in regards to tourism activities along the Kimberley coast relates to the disturbance of sites of Aboriginal importance. These sites often are still an active part of their culture and spiritual connection to country. European culture appears to have a very different relationship with their historic sites with attitudes being that of curiosity and exploration and less that of respect and spiritual connection.

Impact of expedition cruising on Traditional Owners

As highlighted in the methods section (Chapter 2) consultation and engagement with relevant custodians (Saltwater Country people) of the Kimberley area was an essential component of this research. The Saltwater Steering Committee has permission from their communities and body corporate to undertake preliminary planning regarding coastal and marine matters within their country. The four native title groups represented are: Mayala, Dambimangari, Uunguu and Balanggarra. These claimant areas are where most of the tourism activity along the Kimberley coast is currently occurring. Traditional Owners are more than community stakeholders; they have distinct, inherent rights and obligations to country. The concept of country does not allow for a separation of people, land and waters. In an Indigenous vision of country, economy, spirituality, knowledge and kin are all related and interconnected (Kinnane 2002). Country is not seen as being 'owned' as in the Western tradition; rather, it is held in a reflexive, obligatory way. Traditional Owners are bound to country and have special rights to country and these rights come with special responsibilities. These relational understandings of country are maintained through systems of skin, language, land use and spirituality (Kinnane 2002).

Concern over the rapidly growing tourism industry in the north Kimberley is not new. Wunambal people at Ngauwudu (Mitchell Plateau) have expressed concern and fear of the potentially dangerous consequences of uncontrolled access to sacred sites, which could result in accident, illness and even

death for custodians or visitors (Horstman & Wightman 2001a; Wunambal Gaambera Aboriginal Corporation 2001b). In this area, it has been reported that visitors frequently visit, disturb and camp on art, ceremonial and burial sites with no appreciation of their importance and have been held responsible for the movement and removal of parts of skeletons placed in burial sites (Horstman & Wightman 2001a; Wunambal Gaambera Aboriginal Corporation 2001b).

Further concerns about tourism in the northwest Kimberley were raised in various workshops examining looking after and health of country (Dehoog 2000; Kimberley Land Council 2004c, a). Some of the main concerns highlighted in these workshops included the amount of visitors; lack of consultation with Traditional Owners; Traditional Owners not being asked permission for access; Traditional Owners not being advised of where visitors are going and what they are doing; tourism activities causing damage to country; visitors going to places they shouldn't be; and visitors not following cultural protocols (Kimberley Land Council 2004c, a). Louis Karadada, an Uunguu claimant, highlighted some of these issues: 'too much people and tourists coming around, messing around with things'; 'never ask us what they can do'; 'they never tell us what they want to do'; 'pouring like water; white tourists everywhere on our country' (Kimberley Land Council 2004c) p12.

In relation to the expedition cruise ship industry, art, ceremonial and burial sites are the focus of some on-shore visits in the north Kimberley with some sites being frequently visited by numerous tour operators and private visitors. There are also sites visited that are not obviously connected with Aboriginal interpretation or where there is a physical presence. These sites include areas considered by tourism as being of high scenic value or where, for example, freshwater pools and falls are found such as Mitchell Falls on the Mitchell Plateau and King Cascade in the Prince Regent River. For Traditional Owners, areas such as Punamii-unpuu (Mitchell Falls and surrounding area) have great cultural and spiritual significance. Punamii-unpuu is a large 'sacred site', an entire area, including all of the creeks, rivers, waterfalls and surrounding outcrops and woodland (Wunambal Gaambera Aboriginal Corporation 2001b). Punamii-unpuu is a creation place, where the spirits of children live along with other living things not yet born, while spirits of people who have passed away wait in the water to live another life sometime in the future. It is an area of great spiritual power and the Traditional Owners have a strong responsibility in their Law to protect it (Wunambal Gaambera Aboriginal Corporation 2001b). In order to protect this site under Western law, Punamii-unpuu has been registered as a site of significance under the Aboriginal Heritage Act 1972 (WA) which makes it an offence for anyone to excavate, destroy, damage, conceal, alter, or deal in any way with an Aboriginal site or object, and to take possession of and/or deal with any object under or on an Aboriginal site. Traditional Owners also feel a responsibility for non-Aboriginal things that occur on country. For example, Uunguu people stated that they feel a sense of responsibility for historical items such as the DC3 plane wreck at Vansitaart Bay from the 1940s (Figure 8) because it is on their country and is also part of their history.

In this study, the issues discussed above were again raised in the initial meetings with the Saltwater Steering Committee meeting held in Derby on 2nd May 2006 where the project team sought permission to proceed with the research. At this meeting, it was expressed that the largest stress felt by the Traditional Owners was that they did not know what is happening on country. Steering Committee members stated that the greatest impact from tourism is the lack of respect and that approval is not sought to access country. They feel that tourism needs to ask 'Can I?' Additionally, Traditional Owners want to be involved in the planning and decision making process for the lands and also see themselves as information providers. It was explained that when non-Indigenous persons visit Aboriginal country without permission it causes stress on individuals. Equilibrium must be maintained between visitors and Traditional Owners visiting country. Visitors throw the equilibrium out of balance and this must be rectified by Traditional Owners returning to country. Kinnane (2002) stated that access to country is essential to allow for the teaching of knowledge and disciplines that are required to raise children, share culture, ensure the future management of a resource and to fulfil religious and social obligations.

The impact from tourism can be broadly divided into two categories as listed below:

- access, health and care of country —e.g. (management and spirituality); visiting country
- physical and environmental damage/change—e.g. rubbish, signs, trail markers, burial sites, rock art, vandalism, fire, trails, turtle rookeries and weeds.

Access, health and care of country

As highlighted above access is an important issue of concern for Traditional Owners. Traditional Owners expressed concern over visitors accessing areas in terms of potential injury or getting lost.

> Accidents come back to Aboriginal people. (Uunguu Traditional Owner)

> …it is Aboriginal people from that country who get punished [if someone gets hurt]. (Uunguu Traditional Owner)
> If anyone gets killed, who you going to blame. (Balanggarra Traditional Owner)

Concerns about accidents or injury on country come from the sense of responsibility that Traditional Owners feel for country. Custodians experience spiritual and physical consequences for damage to country and injury/death of visitors to their country. All regions of country are regarded as needing human obligatory ownership to be maintained through spiritual and cultural practices (Kinnane 2002). When someone is injured or when damage is caused to country from an outsider it is considered that country has not been cared for properly and as a result it is believed that the spirits will punish Traditional Owners for not taking proper care of their country.

A further issue of concern for Traditional Owners is not knowing where visitors are going and what they are doing on country. This again is reflected in the need to care for country. The strong desire by Traditional Owners for visitors to obtain permits is so that there is a better understanding of where people are going on country.

> Tourists need to have permission to access Aboriginal land. (Dambimangari Traditional Owner)
> They need permits to come up here. (Balanggarra Traditional Owner)
> Not to go in gallery [Raft Point] without consent. There needs to be a permit system in place. (Dambimangari Traditional Owner)
> The tourist industry currently has free access to country. This is a totally skewed view of the importance and value of Aboriginal country and ownership. If BHP or the Defence Department owned the land, nobody would go there without permission. (DIA representative)

In order to better care for country Traditional Owners stated that it was desirable that a 'user fee' be charged to help with getting people back to country in order to properly care for country.

> Boat operators set a price…we get a commission. If I do a painting I get a commission. (Dambimangari Traditional Owner)
> Don't want to stop people coming here…we have to work together as one unit [Aboriginal and non-Aboriginal people]. You need funding to do it. Continue funding….continue to do it. (Dambimangari Traditional Owner)
> One-off funding isn't sufficient. Needs regular ongoing funding stream. Continual funding for protection. Every year need to get back to refresh/maintain sites. Don't want to stop people from coming here but we need to work together to protect country. Should pay local people [Traditional Owners] to look after it and protect it [country]. (Dambimangari Traditional Owner)
> It needs to be young people from the tribe…to keep it good…tourists come here…they have to be charged or something. (Balanggarra Traditional Owner)

Concern was however expressed that there was no administration in place to manage permits or user fees. Traditional owners also expressed that there are currently no agreements, such as a memorandum of understanding, between tour operators and Traditional Owners. In the past Traditional Owners have relied on tour operators contacting them.

> Kimberley Quest is the only mob that came to us. We [Traditional Owners] said where you can go. They [Kimberley Quest] gave time and experienced us [referring to the field trips for the Saltwater Country Project in 2005–2006 which took Traditional Owners back to country]. They [Kimberley Quest] understand where Traditional Owners come from. (Dambimangari Traditional Owner)

Traditional Owners suggested that it would be preferable that Aboriginal people from country were trained as rangers. In training young people as rangers it was seen as an opportunity to get young people back to country as some young people have never been out to country. There was a desire to pass on knowledge of senior people in the community so that the knowledge is not lost. Getting back to country is seen as an important way for knowledge to be passed on to the younger generation. Projects such as the Saltwater Project allowed a way for this knowledge to be passed on. Ranger training could also be seen as an opportunity to pass on knowledge. Having young people trained as rangers also was seen as an opportunity to transfer language and as a means to protect sites through a consistent presence. This transfer of knowledge and language is seen as essential in caring for country.

> We need someone to look after [country]. (Balanggarra Traditional Owner)
> If you want to protect country you've got to be on the country (Dambimangari Traditional Owner)
> Tourists need to have a guide [Aboriginal person of knowledge] when coming to sites to help understand

and explain. (Dambimangari Traditional Owner)
Next generation needs to get back to sites to maintain sites and protect country. (Dambimangari Traditional Owner)

Hard to protect because we're not here all the time. We look after somewhere that has been given to us in the past. (Dambimangari Traditional Owner)
We need to get young people focusing on getting back to country. (Uunguu Traditional Owner)
Money [from 'user' fees] to be used for the community. Would like to go there [country]…to tell them [younger Uunguu people] the story of the place. (Uunguu Traditional Owner)
Knowledge is passed on verbally. (Mayala Traditional Owner).

There are also areas on country that are not suitable for non-Aboriginal people to access e.g. burial sites, ceremonial grounds. These sites often have protocols that need to be abided by and if this does not occur then it has spiritual consequences 'it makes the spirits unhappy' and therefore there are consequences for the Traditional Owners of that country.

It's alright for people [visitors] to visit as long as they have the right guide with them.
We want people to go to the right places. People have to follow the rules [cultural rules]. (Balanggarra Traditional Owner)

A representative from DIA also stated that often personal concern is expressed in terms of people getting hurt or lost but it often means that custodians are worried that visitors might go to a site they should not be at, e.g. a burial site. A Dambimangari Traditional Owner stated that 'if Aboriginal people don't know a place they don't go exploring—they stay where they know. There are consequences if you go somewhere you shouldn't be. Kartiya [non-Aboriginal people] go everywhere'.

In caring for country it is considered essential that Traditional Owners return to country or are actively managing country. The presence of rangers, active involvement in management decisions regarding country which includes consultation, granting access and 'user' fees as suggested above are considered to be ways to manage or care for country. When country is not properly cared for it is considered that there are consequences, both spiritual and physical. For example:

There should be three waterfalls [at King George Falls]. There was no fresh water because we haven't visited country. (Balangarra Traditional Owner)
Looked at paintings in a small cave [on an island]. There used to always be a different painting. Spiritual beings reside in the cave. Spirits aren't as active any more due to all of the outsiders visiting. (Mayala Traditional Owner)
There is living water on the island. Water all year round. When we visited water wasn't there [this was attributed to all of the visitors]. It was explained that this year [2006] there was lots of rain. It was felt that this was because the visit to the island had restored the balance. (Mayala Traditional Owner)
We look after somewhere that was given to us in the past. We need to visit to protect. (Dambimangari Traditional Owner)

There was also comment that there was an issue with the continuous visiting that occurs currently by non-Aboriginal people and that correct protocol was not observed.

We introduce ourselves to country…respecting the country. We don't visit these places all the time. *It was stated that it is a problem that kartiya visit all the time.* It's a mockery…there is no respect. (Dambimangari Traditional Owner)

It was explained that when Indigenous peoples visit their country they introduce themselves and tell the spirits they are visiting and why. Introduction to country is an essential part of any visit and must occur by a Traditional Owner. Ceremonies such as smoking ceremonies may also occur (particularly when visiting burial sites) to please the spirits and to make sure that spirits do not follow people when they leave the site. Traditional Owners stressed the importance of returning to their country to rectify the balance of so many non-Aboriginal people visiting their country.

Traditional Owners would also like to see a memorandum of understanding between themselves and Tourism Western Australia so that Aboriginal interests are properly promoted and marketed. The recently released Aboriginal tourism strategy (Tourism WA 2006c) may assist this process and is a step forward. There are also concerns over tour companies using Aboriginal rock art symbols for marketing. Traditional Owners commented that they preferred that rock art symbols were not used (cf. section on marketing in Chapter 4).

It is important that passengers aboard commercial vessels and visitors on private vessels are advised of the Indigenous communities of the region and their continuing relationship with their country. It was

observed on commercial vessels that this takes place verbally, however, the different relationships were not always made clear and the depth and breadth of information was dependent on the knowledge of the guide. It is also important that stories of places are correct and that correct terminology is used. It was common for stories to differ considerably depending on the guide and incorrect terminology was used such as Gwion Gwion figures being referred to as 'Bradshaw figures'. Traditional owners have requested that the term Gwion Gwion be used.

Physical and environmental damage to country

Care of country is compromised when a third party causes any form of damage to country. Further, this damage is also considered to be disrespectful to Aboriginal people as it breaches and disregards cultural protocols.

Rubbish/litter

While only a minimal amount of rubbish was found during the site assessment of this study, it is seen by Traditional Owners as disrespecting country. When rubbish was encountered during an on-shore visit with Dambimangari people their disgust and anger was expressed using expletives. They said that litter concerned and upset them. A Balanggarra person described their concern over the presence of toilet paper and faeces found on the beach at Pangali Cove and the consequences of littering: 'we don't put food or rubbish or even dirty fingers into the water otherwise the sea would get angry and rough'.

Observation of cruise ship visitors showed that only a small amount of litter e.g. plastic wrap, aluminium foil, aluminium cans was encountered on shore and it was typical that tour operators would collect the rubbish. No visitors on commercial tours were observed littering suggesting that perhaps it is visitors from private vessels that are leaving rubbish behind. Additionally, it was common practice for tour operators to advise visitors to not leave any form of rubbish behind including cigarette butts, which are unthinkingly disposed of and the most littered item in the world (Clean Up Australia n.d.).

Traditional Owners also commented that they don't like people burning rubbish on shore, a practice undertaken by some operators. This concern was expressed not only because of unburnt rubbish being left behind but also because of the threat of bush fires starting in the 'wrong places'.

Site development

A further issue for Traditional Owners was sites being developed. For example, at Crocodile Creek, Dambimangari country, the site was hardened in the 1980s with concrete steps, steel ladder and BBQ and the swimming hole is partially dammed with concrete (Figure 36). Additionally, it has become common practice for private yachts and charter vessels to leave memorabilia here with their details/inscriptions (Figure 36).

Photographs of Crocodile Creek were shown to Dambimangari representatives. They commented that they would like to see Crocodile Creek cleaned up and the bough shed and memorabilia removed.

> Looks like a rubbish dump…cans, undies, hats…junk…no respect. (Dambimangari Traditional Owner)

Similarly, Traditional Owners would like to see ropes removed that have been left behind by visitors as it is seen as littering. In some cases the ropes also indicated that people were accessing sites that Traditional Owners did not want people to go. It was also expressed that there was concern that people would hurt themselves, which would have consequences for Aboriginal people. At King George Falls on the King George River it was common for tour groups to climb a rope to the top of the falls (Figure 37).

> Don't you go [visitors] there on top again [King George Falls]. (Balanggarra Traditional Owner)
> People shouldn't be on top [King George Falls]. (Balanggarra Traditional Owner)
> Tourists come by boat…but they shouldn't be climbing [King George Falls]. (Balanggarra Traditional Owner)
> To keep it good, tourists don't come here [King George Falls]. (Balanggarra Traditional Owner)

Figure 36: (a) Crocodile Creek 1982; (b) Crocodile Creek 2006; (c) stairs and concrete steps at Crocodile Creek 2006; (d) boat memorabilia in bough shed at Crocodile Creek 2006.

Figure 37: (a & b) Ropes at King George Falls, King George River, leading to (c) swimming hole at top of falls with visitors.

Balanggarra people have stated that visitors to the falls by boat may look from the water but that they must not climb or swim in the waters at the top of the falls (Figure 37). This land is part of the

Carson River Pastoral Lease and ALT Reserve and trespassers can be prosecuted. The top of the falls is a Wunggud[3] place. They believe that if people climb to the top they will disturb the spirit snake causing it to go away resulting in the water drying up. The heavy duty ropes were removed in 2006 by Traditional Owners while on the Saltwater Country Trips with the KLC. Uunguu Traditional Owners also removed ropes from Mitchell Falls and ropes were removed by DEC at King Cascades, Prince Regent River.

Signs/trail markers

Formal signs were only present at Mermaid Tree in Careening Bay (Figure 38). These signs had been installed by DEC, who advised that consultation had occurred with the Traditional Owners. However, Traditional Owners and KLC representatives commented that they were not consulted for permission[4]. Careening Bay is crossover country between the Uunguu and Dambimangari claims. Traditional Owners were shown photographs of the signs and asked to comment.

> CALM *[currently DEC]* have put signs in but haven't spoken to the right people. *(Dambimangari Traditional Owner)*
> *[DEC put signs in]* to make the view more better. Makes me feel unhappy…signs don't belong to that area. We don't go south, Perth, Adelaide and put signs in their country. *(Dambimangari Traditional Owner)*
> Signs *[at Careening Bay]* should go. *(Dambimangari Traditional Owner)*

Figure 38: DEC signs at Mermaid Tree, Careening Bay

Issues about the signs were also raised at the Saltwater Country Steering Committee Meeting where the technical advisory group were present.

> We Aboriginal people don't go round putting signs in other people's place but as for kartiya (white people) they do that….and when we go there we think maybe we aren't welcome, we don't like it…

DEC had also installed approximately seven trail markers at King Cascade, Prince Regent River in 2006 after consultation with members of the Dambimangari community (Figure 40). The Traditional Owners spoken to for this study, who were authorised by their community to speak for country, said that they thought the tiles were inappropriate and again that the correct people were not consulted. Observations on trips in mid-2006 also raised questions about the effectiveness of markers, particularly as by that stage only a handful could be found and they seemed to start only half-way up the track.

[3] Also referred to as Wunggu, Wunggurr. Rock python who appears during Lalai (Dreaming) as both the rainbow and the rainbow serpent. Wunggurr are creator snakes, who broke rocks and made tracks for water and now live in deep pools ((Wunambal Gaambera Aboriginal Corporation 2001; Blundell and Woolagoodja 2005; Mowaljarlai and Malnic 1993)

[4] There is contention about whether consultation was undertaken. A Dambimangari representative received a letter from DEC after raising concerns about these signs. In the letter DEC made no mention of consultation with Traditional Owners. The signs were funded by Australian Geographic. Consultation was mentioned by a DEC employee at a meeting in March 2006. Who the consultation was with or the content is unknown.

Figure 39: Memorial plaques at the Camden Harbour Settlement ruins (a, b, c) and on Sheep Island in Doubtful Bay

Figure 40: DEC trail marker at King Cascade, Prince Regent River

Informal trail markers such as rock cairns were also commented on by Traditional Owners. When encountered, Traditional Owners dismantled rock cairns. Traditional Owners do not consider rock cairns appropriate.

> Leave things as they are…don't go building things and putting up signs. (Dambimangari Traditional Owner)
> Tourists mark trails….we don't want trails to be marked". (Balangarra Traditional Owner)

Figure 41: (a) Rock cairn at Raft Point; (b) Traditional Owner dismantling rock cairn

An additional concern related to rock cairns is where burial sites have been disturbed by visitors using the rocks from burial sites to build rock cairns or trail markers, or in one documented case to spell their initials and year of visit.

In some cases, commercial tour operators were observed to also dismantle any rock cairns or trail markers (Figure 42). However in certain situations the opposite was reported. At King George River there were rock cairns every few metres to mark the trail up a steep slope and along the plateau to the top of the waterfalls. According to one operator, these cairns were built and maintained by the crew of another operator regularly bringing their customers so that new crew members would know where to go. It was also observed that visitors had engraved their initials on boab trees. This was viewed as an act of vandalism by Traditional Owners.

Figure 42: (a) Trail marker at Camp Creek, Prince Regent River; (b) Commercial operators dismantling trail marker

Figure 43: Series of rock cairns at King George River marking a track every few metres up to the top of the falls

Trails

As discussed in a previous section, trails were generally narrow and often indistinct due to the natural terrain. Traditional Owners commented that they didn't want to see lots of trails, 'one trail is okay'. Dambimangari people stated that they 'didn't like trails because it encourages people to explore'. They were curious how people knew which sites to visit and where to go, 'people are curious…like cats'.

Art sites

At Raft Point (Dambimangari country) and Bigge Island (Uunguu country), Traditional Owners pointed out numerous areas where charcoal had been used on the rock face (Figure 44). This was either as drawings over Aboriginal art or outlining Aboriginal art. Traditional Owners said that Aboriginal people don't use charcoal and wouldn't use it in the caves. There were charcoal drawings in the caves that Traditional Owners said were definitely not drawn by Aboriginal people (Figure 44). At Bigge Island the outlining of art was mostly evident where yellow ochre drawings were present (Figure 44). The charcoal markings were also present in Crawford (1968) and Crawford (pers. comm. 2007) commented that he wasn't sure of the origin but that it was present during his research. This indicates that it would not be as a result of current tourism. In Figure 44 (a & b) the charcoal markings appeared to be more recent. In both situations, there were small pieces of charcoal on the ground below the rock art. When charcoal markings were observed, Traditional Owners expressed anger and upset. They said it made them sad.

> Should not put charcoal…that's mocking the thing…we don't like that. No tracing over rock art…ruining things. (Uunguu Traditional Owner)
> People been mucking with charcoal on paintings. Makes me want to cry seeing all those things…charcoal on drawings. We can't go into their house and scribble on walls. (Dambimangari Traditional Owners)
> These things [charcoal] don't belong there. It hurts our lian [spiritual heart] and makes us sad. (Dambimangari Traditional Owners)

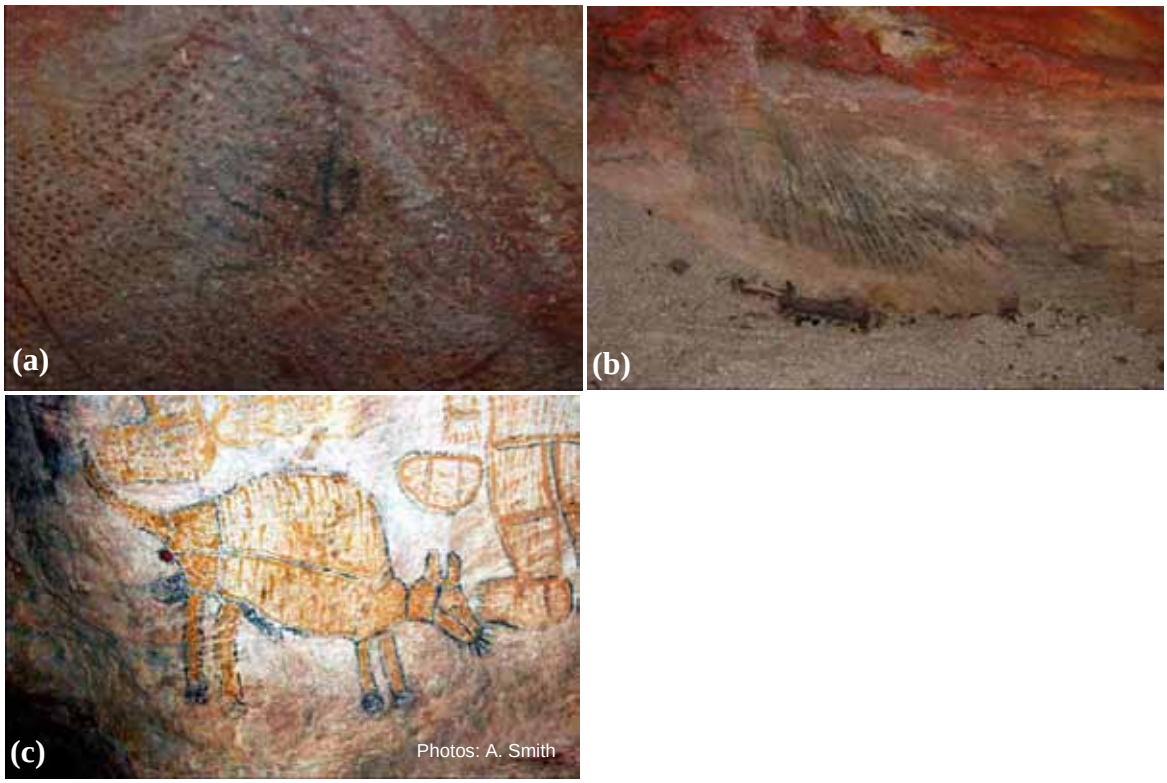


Figure 44: (a) Charcoal markings on rock art at Raft Point; (b) charcoal markings on rock art at Bigge Island; (c) charcoal drawing in cave at Bigge Island.

There was also evidence at an art site in Vansittart Bay where non-Aboriginal people had painted on rock art with house paints. Uunguu people said that this 'hurt their feelings'. Other issues concerning rock art sites was wear caused to the rock face through people continually visiting the sites.

Additionally there was comment that non-Aboriginal people had been chipping off rock art. At Vansitaart Bay, Uunguu people reported evidence of the rock face being smashed. Uunguu Traditional Owners also commented of this occurring at Jar Island and at Bigge Island where the eyes of a Wanjina had been gouged out (see Figure 44). However, Traditional Owners suggested that this was removed by researchers to date the rock art. On speaking with Ian Crawford, formerly of the Western Australian Museum, he commented that in 1968 when he conducted research at Bigge Island that the eyes were gouged out at this time (Crawford, I. pers. comm.). The Wandjina referred to above was also discussed and photographed by Crawford (1968) in the 'Art of the Wandjina'. It therefore cannot be attributed to current tourism.

There were no observations of visitors from commercial vessels in this study vandalising rock art sites with charcoal or attempting to smash or remove sections of rock art. Groups are generally kept together at rock art sites. It is not likely that visitors on commercial tours would have the time available or the opportunity to deface the rock art. There is no definite knowledge of who is responsible for the vandalism.

On the commercial tours observed, visitors were usually asked to not touch rock art and to take care when visiting rock art sites to avoid brushing up against walls. Some operators asked visitors to remove hats or backpacks and in some situations only the guide would go near the rock art where features of the rock art would be described. In some situations, however, it was observed that these briefings were insufficient as visitors were observed by the researchers to not remove backpacks and hats and were seen brushing against walls to support themselves and were also seen touching paintings. On numerous occasions, visitors were also observed to photograph rock art using the camera flash.

Burial sites

An issue of major concern for Traditional Owners was visitors going to, photographing and disturbing burial sites. The disturbance of burial sites was one of the most frequently commented on issues highlighting its importance and significance. Traditional Owners have repeatedly requested that visitors do not go to burial places through fear of them disturbing the remains.

> Shouldn't take things away…or fiddle around with painting…burial sites. (Uunguu Traditional Owner)
> [Burial sites] no go zone…full stop. All of them [visitors] shouldn't go there without our consent. We don't want people mucking with things. (Dambimangari Traditional Owner).
> Tourists shouldn't be looking around. They mustn't muck around with things. (Balanggarra Traditional Owner)
> The way burial sites are treated is as if Traditional Owners are another species. (Dambimangari Traditional Owner)
> They [non-Aboriginal people] don't go visiting cemeteries all the time, maybe once or twice, when they or someone is being buried or when they want to pay their respects…they don't go and move things around [in reference to differences between non-Aboriginal burial places and the disrespect shown for Aboriginal burial places]. (Dambimangari Traditional Owner)
> Makes us frightened, angry, scared [bones being disturbed]. We'll be the ones punished, not them. It might bring a big cyclone. (Uunguu Traditional Owner)

It was considered that people visiting and photographing burial sites and remains was disrespectful.

> Aboriginal people respect the dead. We have a lot of feelings for the dead. We don't say their name [the deceased]. After a funeral we have a big smoke so the spirit rests…so they don't come back. Don't go back and take a picture. Kartiya makes fun of it going to the same place, same place, making roads…no respect. (Dambimangari Traditional Owner).
> Can take photo of country…but not sacred places [burial sites, art sites]. (Dambimangari Traditional Owner)

There was also concern of the spirits attaching themselves to people 'it can drive people mad if a spirit attaches itself'. Proper protocols and respect are necessary to visit burial sites. A Dambimangari Traditional Owner commented that in the past it wasn't necessary to go back to burial sites to check remains, however, now they go back because sites are being disturbed by non-Aboriginal people. 'We didn't have to go back, but now, we have to…I feel frightened going back.'

It was explained by a Dambimangari Traditional Owner that when people died they would be laid up high on either a wooden or rock platform. The body would be covered with stones. After two to three years when there were just bones left, the bones would be taken down to the mother where she would cry once more. The bones would then be painted in ochre and wrapped in paperbark, tied with woman's hair that was twisted into twine or with rope made from bark and then the bones would be

placed up high in a rock ledge and covered again with stones. A Wandjina with arms up in the air would be painted to represent a burial site (Figure 44).

Figure 45: Wandjina with arms outstretched above the head marking the presence of a burial site

It has been observed by Traditional Owners that the stones have been disturbed, as previously mentioned, to make rock cairns. This is most likely through ignorance and lack of awareness of the presence of a burial site. At Wiyangarri (a child's interim burial site), Uunguu custodians observed that rocks had been removed from a burial site and the initials "PR 1989 & KR 1989" had been written with the rocks. The Uunguu Traditional Owners placed the rocks back on the burial site. Comments from the Traditional Owners included:

It's not right.
No respect for this country…no respect.
Makes me really sad to see things like this.
What's here has been here so long, they should leave it how it was.
Don't mess around with things.
Leave things alone as they were.

There have also been anecdotal reports of a visitor from a commercial vessel unwrapping skeletal remains from the paperbark and posing the bones to take photos. The guide upon discovering this reprimanded the passenger and explained the cultural inappropriateness of this action. Further incidences include helicopters landing on burial grounds and sacred sites such as Mt Trafalgar.

Commercial tour operators observed in this study were generally shown to respect burial sites by asking people to not go near areas where remains are located. However at times this information was not clearly defined, more-so with just a simple outstretched arm cautioning to 'not go over there' and visitors were observed by the researchers to walk in the general vicinity. At Bigge Island, skeletal remains are located very closely to the most frequently visited rock art site. The remains are in clear view and while visitors were discouraged from taking photos, some passengers were observed by researchers to take photographs. Of further concern, is exactly which areas visitors should be allowed to access. At Raft Point, one operator did not take visitors into an area because it was a burial site. Another operator, however, allowed visitors into the same site because the bones were no longer present. The inconsistency between operators thus is a key concern and applies also to natural areas such as reefs. Another situation arose where one of the guides on a comfort stop at King George Falls accidentally discovered a burial site. While this was not made known or shown to visitors, it highlights the potential cultural sensitivities at this location which is extensively visited.

Relationship between style of operation and potential impacts

The overall impact of an operation could potentially be modelled by ranking operations on a series of aspects, including education and interpretation, staff knowledge and understanding, crew appreciation and personal attachment/interest in area, trip focus, visitor management, safety measures as well as vessel size and equipment. Observations on vessels during this project indicate that of the above, visitor management and control appears to be the overarching factor influencing their environmental, cultural and social impacts at individual sites. The focus and style of individual operations may be a further

important factor, with operations that have a strong ecotourism focus—as reflected in developed education and interpretation programs, strong knowledge, understanding and appreciation by staff of the areas' cultural, historic and environmental assets, systems and values—likely to be more appreciative of good practice in terms of environmental, social and cultural issues as well as contribute to a positive learning experience for their passengers. The result of successful interpretation and education may include the challenging of visitors' ingrained social and historical stereotypes and a higher appreciation of nature and ecological systems, which is potentially the first step towards positive changes in negative cultural attitudes and ecologically detrimental habits.

On the other hand, some of the observations during this project indicated that operations with less developed visitor management systems, lesser focus on learning, and/or staff that have limited knowledge and understanding of the areas' ecosystems and cultural aspects, may be less likely to positively challenge passenger attitudes and provide a learning experience, while at the same time being more likely to have a negative impact at individual sites due to a lack of understanding and ignorance of appropriate protocols, activities and behaviours. For example, one operator had set aside time to 'explore' the area at Raft Point, which is a known burial site and according to the Traditional Owners (Dambimangari) should not be visited by tourists. Further, Traditional Owners stated that they do not want people exploring because they could enter sensitive cultural/spiritual areas where they should not be.

Examples of impact minimisation and enhanced tourism experiences by appropriate interpretation and education include visitations to Montgomery Reef or Aboriginal rock art sites. At Montgomery Reef, some operators provide extensive information on the ecology of the reef as well as potential impacts, providing an attractive tourism experience without the need for a reef walk. On the other hand, where little or no information was provided, visitors quickly lost interest in the reef and turned to other activities such as fishing. At Aboriginal rock art sites such as at Raft Point, visitors which received extensive information about the Aboriginal significance of the sites and potential impacts of visitation were satisfied to observe the rock art from a distance without the need for entering the cave or taking photographs. In groups where such information was not provided, large groups scrambled over the sites with many people photographing the rock art and frequent inadvertent and sometimes deliberate contact with painted surfaces.

The following chapter provides a review of tools, frameworks and strategies used elsewhere to provide a coordinated approach to management of an area, with particular focus on natural and protected areas and indigenous heritage matters. In the context of the issues arising relating to Indigenous heritage management in the Kimberley, the overview of planning frameworks is preceded by a brief review of international and some national media articles with respect to the management of Indigenous heritage and rock art sites, an issue that is highly relevant to the management of on-shore sites accessed by expedition cruises along the Kimberley coast.

Chapter 6

PLANNING AND MANAGEMENT OF THE EXPEDITION CRUISE INDUSTRY

Numerous management strategies have been developed to mitigate tourism's impact on the ecological, social and cultural environments and although many of these strategies do not relate specifically to cruise ship tourism, features of the strategies may be applicable. The following discussion will canvas the main management strategies that have been developed specifically for cruise ship tourism and more general strategies which may be adapted for use in the Kimberley.

In attempts to manage the negative impacts of cruise ship tourism, a variety of management strategies have been established at local, national and international levels by the various stakeholders who have a key stake in the industry. Current legislation will be discussed in a later section however it is pertinent to point briefly to the two international conventions which govern the wider shipping industry.

First the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) regulates operational discharges from ships. The MARPOL convention consists of one main protocol, containing provisions for violations of its standards which are found in five annexes (Schulkin 2002). The annexes establish specific standards for different forms of pollution. These include:

- Annex I—which regulates discharge and transport of oil
- Annex II—which sets standards for ships carrying hazardous liquids in bulk
- Annex III—which regulates transport of packaged hazardous waste
- Annex IV—which provides standards for sewage treatment and discharge
- Annex V—which regulates disposal of garbage at sea (Schulkin 2002).

Given the remoteness of the Kimberley coast and the lack of management presence in the area, the monitoring of conformance and enforcement of MARPOL in the Kimberley is considered difficult. The second convention is the United Nation's Convention on the Law of the Sea (UNCLOS), which regulates all aspects and uses of the world's oceans and establishes the fundamental obligation of all States to protect and preserve the marine environment (Sweeting & Wayne 2006). UNCLOS consists of three main provisions which are:

- Standards for registering ships
- Establishment of limits on national jurisdiction over the seas; and
- Guidelines for restricting marine pollution and for enforcing violations of pollution regulations (Schulkin 2002).

UNCLOS has a number of major weaknesses. For instance, under UNCLOS cruise ships are able to register in foreign countries which may have weaker or non-existent marine pollution laws. In addition the US are the only state which has not ratified the convention and effective mechanisms are not established to enable enforcement of the standards and guidelines (Schulkin 2002). The International Maritime Organization (IMO) develops and oversees conventions and treaties involving cruise ships in international waters (Trousdale 2001).

In addition to the international conventions, governments and non-government organisations in various countries have adopted their own protocols to manage cruise ship impacts. Associations which represent the interests of cruise ship operators have also formed at local and regional and international levels. The ICCL and CLIA both represent the industry at an international level, whilst groups such the International Association of Antarctica Tour Operators (IAATO) are specific to local niche destinations (Klein 2002; Stewart et al. 2005). IAATO was formed in response to increased tourism in Antarctica and advocates, promotes, and practices environmentally responsible travel to Antarctica. Other regions such as the Caribbean and the Arctic have also been proactive in dealing with the cruise industry at a local level, through the establishment of programs such as the Wider Caribbean Initiative for Ship Generated Waste Project (Lester & Weeden 2004) and the World Wide Fund for Nature initiated the Arctic Tourism Project (1995–2000) (Stewart et al. 2005).

Recognition of the limited information available to predict the cumulative effects of Antarctic tourism on physical features and biota of sites visited led to a workshop to identify impacts and review existing research and monitoring programs (Hofman & Jatco 2000). A range of management measures

were discussed which could assist minimising impacts including:
- limitations on numbers of visits and visitors to sites
- alternating sites visited
- development of site specific guidelines;
- development of standards for ship operations and expedition staff;
- site modification; and
- self regulation and self policing (Hofman & Jatco 2000).

In addition to these measures the workshop identified four key strategy categories which could assist in detecting, avoiding or mitigating cumulative impacts. These are:
- site monitoring
- coordination of research and monitoring programs
- tour planning
- expedition long-term planning and evaluation (Hofman & Jatco 2000).

While landscape and wildlife assessment research formed the basis of these categories, it was recognised that all measures to assess and avoid minimising cumulative effects may not be practical to implement. Decisions made on possible implementation of management measures need to consider a number of variables such as:
- likelihood of acceptance of measures
- alternative measures;
- actual and perceived effectiveness of existing measures;
- uniqueness of site measure to which measures would be applied
- evidence of cumulative impacts; and
- presence of comparable, similarly accessible sites that management would affect (Hofman & Jatco 2000 p. 13).

The management measures and categories for mitigating impacts could be useful for the Kimberley, however, unlike Antarctica there has been no research on tourism's impact on particular sites apart from this study and there is minimal landscape and wildlife assessment of the region. Additional frameworks and management strategies that may be used for the Kimberley are discussed in later sections.

Current Planning and Management of Cruise Ship Tourism in the Kimberley Region

Planning and management of activities affecting the Kimberley coast are currently not occurring in a coordinated or holistic way. Given the strong interest and rapid growth of local industries, including petroleum and mining interests, tourism, pearling and fishing, there is a growing need for a coordinated approach to development and activity planning and management, taking into consideration the views of all relevant stakeholders and the Traditional Owners of the area. Current impacts of these industries on the region are not known or little understood, though the potential for impact is very high, particularly from an ecological and cultural viewpoint. As a baseline for the assessment and evaluation of potential impacts, it is fundamental to also invest in the measurement of current impacts and an environmental and social assessment, coupled with longer term monitoring programs of the area. Until such a baseline is established, management decisions should be based on the precautionary principle as for example stated in the 1998 report on the 'Future Management of the Aquatic Charter Industry in WA' which recommended to limit numbers of operators until impacts could be established with clarity (Tour Operators Fishing Working Group 1998).

A number of agreements relating to the expedition cruise industry are currently in the process of being formulated or implemented. Australia's North West, the regional marketing body for the tourism industry, and the regional visitor centres (VC) have established a memorandum of understanding (MOU) which includes a section aimed at encouraging operators to become accredited or miss out on promotion through the visitor centres. Specifically it states that:

> It is all VC's intention that membership will be only granted to accredited operators by 1st July 2007. It is a request from all ANW VC's that ANW support the same policy and actively promote the advantages of accreditation.

Nevertheless, while accreditation by all operators is an intention, the above stated target date will

more than likely require some extension due to the logistics involved in gaining the accreditation (G. Chidlow, pers. comm. 2006). Further, a Code of Safe Working Practice for the Ferry and Charter Boat Industry is currently being developed by the Commercial Passenger Vessel Advisory Committee (CPVAC) which includes a representative from TWA, DEC, Rottnest Island Authority, DPI and four representatives from different sectors of the industry (i.e. ferries, general charter vessels and yachts) (B. O'Dowd, pers. comm., 5 December 2006). This code is being developed 'in accordance with the Occupational Safety and Health Act 1984 (OSH Act) and provides comprehensive and practical advice on preventive strategies relating to safety and health hazards and risks commonly associated with the Industry, in order to improve the working environment of Western Australians' (Commercial Passenger Vessel Advisory Committee 2006). It is anticipated that the draft code will be released to industry for comment mid-January 2007, a date that could be delayed if ministerial comment is required before release' (B. O'Dowd, pers. comm. 5 December 2006).

In 2003, an in-principle agreement between the pearling industry, charter operators and the Department of Fisheries was developed in a document referred to as the Charter Accord. While still in draft form and not publicly released, it is an agreement on areas where pearling leases can and cannot expand their operations (E. Bunbury, pers. comm. 11 December 2006). This agreement between the industries was developed to foster a cooperative approach to future growth and minimise conflict. In a move that is likely to supersede the Charter Accord, the Department of Fisheries is currently in the process of developing the Fishplan 2015. After holding a series of workshops and meetings with the industry, the Minister for Fisheries is currently commenting on the draft strategy which is expected to be released early in 2007 (E. Bunbury, pers. comm. 11 December 2006).

Currently, a number of government departments are responsible for managing different aspects of the Kimberley region cruise ship tourism industry. This includes: the Department of Environment and Conservation (DEC), the Department of Fisheries (DoF), the Department for Planning and Infrastructure (DPI), the Aboriginal Lands Trusts (ALT), Department of Indigenous Affairs (DIA), other Aboriginal corporate bodies, the Department of Consumer and Employment Protection (DOCEP) and the Department of Environment and Heritage (DEH). The following section and Appendix A provide an overview of the current arrangements in terms of jurisdiction and outline key legal responsibilities of each organisation.

Management responsibilities

Department of Environment and Conservation

The DEC manages commercial tour operators on DEC managed land and marine areas[5]. This management occurs through a licensing system. Operators apply for one of two types of licences—T class licence and E class licence. The T class licence is for general tour operations. There is no restriction on the number of T class licences the DEC can grant. The licences identify the areas an operator can visit and the activities an operator can undertake. The licence is valid for one year, and then needs to be renewed. There are options for extending the one year licence through accreditation. If an operator completes one DEC-approved accreditation program a licence can be issued for three years and if an operator completes two accreditation programs a licence can be issued for five years.

A limited number of E class licences can be granted. The DEC has identified land and marine reserves that are sensitive to use, e.g. Rowley Shoals. For these areas the DEC grants a set number of E class licences to operators; this helps to limit the level of use.

Once granted a licence, either T class or E class, an operator has three months to complete the DEC Tour Operator Online Education Program. The program consists of a brief description of general licence conditions and a ten question multiple-choice test. A certificate is granted once all ten questions are answered correctly.

Although there are no marine reserves along the Kimberley coastline there are two reserved areas within the Kimberley to which the above licences apply. For example, tour operators are required to obtain a T class licence to operate in the Prince Regent Nature Reserve[6] and the Mitchell River National Park. In addition to standard licence stipulations both parks have additional requirements.

In the Prince Regent Nature Reserve there are a series of conditions placed on the tour operator licences. For example, operators must obtain an appropriate level of environmental accreditation within two months of obtaining a licence. Operators are not allowed to collect or remove flora, fauna or living

[5] Powers to manage commercial tour operators are derived from the *Conservation and Land Management Act* 1984 (WA) and the *Wildlife Conservation Act* 1984 (WA).

[6] At 25 October 2006, there were 13 T class licence holders operating in Prince Regent Nature Reserve.

organisms from the park. In the Mitchell River National Park, operators are required to camp and walk only in designated areas. Operators are not allowed to swim below the Mitchell River Falls or at the water collection point adjacent to the camping area. The Department of Environment and Conservation are currently exploring a number of options for policing the implementation of licence requirements. If the conditions of a licence are contravened there is a penalty of up to $1000[7].

The DEC is also responsible for the management of pollution and environmental harm offences under provisions of the Environmental Protection Act. This includes discharges of specific materials into the environment outlined. Such materials include detergent, food waste, laundry waste, organic solvent and sewage. A commercial tour boat will need to ensure that such waste is not discharged. A penalty of up to $5000 exists if an offence occurs.

Department of Fisheries

The DoF is responsible for the management of fishing in Western Australia[8]. This management is done via a licensing system. There are three licences relevant to commercial tour operators: fishing tour operator licence, restricted fishing tour operator licence, and aquatic eco-tour operator licence. These licences are restricted to Western Australian waters and the Australian Fishing Zone (AFZ) adjacent to Western Australia. The AFZ extends 200 nautical miles from Western Australia's coastal baseline. The AFZ is managed by the DoF on behalf of the Commonwealth government[9].

The number of fishing tour operator licences was capped in 1997[10], and no new licences have been granted since. The licence enables clients of the licensed tour operator to fish during a tour and to take home their catch. The restricted fishing tour operator licence[11] allows clients to fish during the tour but the fish must be consumed while on tour. The aquatic eco-tour operator licence[12] enables clients to observe or feed fish in their natural habitat without catching them. There is no cap on the number of restricted fishing tour operator licences or the aquatic eco-tour operator licences; a policy change would need to occur in order for a cap to be implemented.

For a tour operator, the type of licence needed is dependent on the activity being undertaken. For example, if a tour operator's client wishes to fish and take home their catch while on a cruise along the Kimberley coastline, the tour operator is required to have a fishing tour operator licence.

Department for Planning and Infrastructure

The DPI Commercial Vessel Safety Branch is responsible for conducting vessel surveys on all new and existing marine vessels. The inspections on new marine vessels are used to check a vessel's onboard safety equipment and to run trials confirming the vessel's safe handling and performance of machinery and equipment. For all existing marine vessels periodic surveys are required:

- every year to inspect safety equipment, radio equipment, machinery and engineering, systems and navigational equipment,
- every two years to inspect the vessel hull, and
- every four years to inspect the propulsion shafting and supporting machinery.

Passenger auxiliaries are surveyed in their own right. This will sometimes occur at the same time as the survey on the 'mother vessel' or when the auxiliary vessels may be ashore for refit remote from the mother vessel. Operational limits vary depending on the integrity of the particular vessel. It is legal to use such vessels for voyages within a stated radius from a mother vessel and on sheltered waters (e.g. Prince Regent River in the Kimberley) (D. Mussen, pers. comm. 7 December 2006).

In many cases, if a marine vessel is required for a portion of a commercial tour, DEC requires that operators have a safety certificate from DPI. For example, tour operators operating in the Prince Regent Nature Reserve are required to supply the DEC a certificate of safety for the marine vessel used.

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[7] As defined in the *Conservation and Land Management Regulations* 2002 (WA).

[8] These responsibilities are defined in the *Fish Resources Management Act* 1994 (WA).

[9] WA jurisdiction includes the area from the low water mark out to 3 nautical miles. The area from the low water mark out 200 nautical miles is the exclusive economic zone. The Commonwealth has jurisdiction from the 3 nautical mile mark out to 200 nautical miles. However, the State and the Commonwealth share responsibility with the Commonwealth waters. In some cases there are clear guidelines (and jurisdiction) over specific fisheries. For example, the State is responsible for managing all boney fish and shark and the Commonwealth is responsible for managing the Northern Prawn fishery.

[10] The number of licences was capped at 260.

[11] There were 60 licence holders as at May 2006.

[12] There were 3 licence holders as at May 2006.

Aboriginal Land Trust

The ALT manages a number of Aboriginal reserves[13]. Permits are required for entry to proclaimed[14] Aboriginal reserves. These permits are issued by the Minister for Indigenous Affairs in consultation with the ALT. There are two types of permits—transit permits and mining access permits. Only transit permits are discussed as the mining access permits do not apply to tourism. The transit permits are issued under the following circumstances (Department of Indigenous Affairs 2006):

- visitors wishing to visit the reserves for tourism or recreation purposes
- visitors wanting to travel through the reserves for tourism, recreation or business purposes (except for mining purposes)
- visitors wanting to visit art centres or cultural centres, and
- visitors conducting business with communities, e.g. consultation.

If a visitor is of Aboriginal descent[15], a member of either House of Parliament (State or Commonwealth), or authorised under the applicable Act[16] or Regulations[17], the visitor is not required to obtain a transit permit before entering a reserve. It is an offence not to obtain the appropriate permit. Prosecution of this offence cannot occur without authorisation by the CEO[18].

If travelling in a group, such as a commercial tour, the group will need only one permit. The permit is provided in the name of the driver nominated by the group.

There are a number of stipulations on the permits. A few stipulations are highlighted here. Travellers are meant to travel through the reserve as quickly as possible. Travellers are not allowed to deviate from the main road. Fishing cannot be undertaken unless specifically approved. Travellers much adhere to all applicable by-laws, including those of the Aboriginal community.

It is considered an offence if a permit is not obtained. In order to prosecute offenders the ALT needs authorisation from the Commissioner for Aboriginal Planning. DIA (who administer the ALT) and KLC currently have a Memorandum of Understanding (MOU) that permits are not issued to any applicant without the permission of Traditional Owners (T. Vigilante, pers. comm. 2007). At current, no operators have been granted a permit for any ALT reserves in the Kimberley.

There is no charge for obtaining a permit; although the ALT does not charge for permits they do have the power to do so. The ALT may receive 'rental, royalty, share of profit or other revenue that may be negotiated' subject to the approval of the Treasurer for proclaimed Aboriginal reserves. Such revenue can be received as long as it is for the benefit of people of Aboriginal descent.

Some Aboriginal communities require the payment of fees for activities, entry and camping on reserve. For example, tourists in the Kimberley region are sometimes required to pay in order to stay on reserves to undertake fishing activities. The ability to place charge for access is highly dependent on the lease arrangement made between the Aboriginal community and the ALT.

The ALT is in the process of handing back reserves to indigenous people. They are undertaking this task with the help of Native Title Representative Bodies, such as the Kimberley Land Council. There is no clear legal outline of what will occur once the land is transferred back to the Indigenous people.

Department of Indigenous Affairs

The DIA engages with Indigenous people and all levels of Government to facilitate the development of policy and programs which deliver sustainable economic, environmental and social benefits to Indigenous communities. The DIA administers the ALT and maintains the Aboriginal Site Register that houses the names and descriptions of Aboriginal sites throughout Western Australia and. According to the Act it is an offence to 'excavate, destroy, damage, conceal or alter an Aboriginal site' unless authorised by the Registrar of Aboriginal Sites or the Minister for Aboriginal Affairs. There are fines and possible jail time for the outlined offences[19].

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[13] Aboriginal reserves are land vested in the Crown for the use and benefit of Aboriginal people.

[14] Not all Aboriginal reserves are proclaimed.

[15] This refers to any person of Aboriginal descent.

[16] *Aboriginal Affairs Planning Authority Act* 1971 (WA).

[17] This includes members of the police force, public health officials and other public officials as outlined in the *Aboriginal Affairs Planning Authority Regulations* 1972 (WA).

[18] Under the *Aboriginal Affairs Planning Authority Regulations* 1972 (WA) general offences may incur up to a $1,000 fine and 9 months imprisonment for the first offence and for the up to $5,000 fine and 12 months imprisonment for the second offence.

[19] *Aboriginal Heritage Act 1972* (WA)

Native Title

A claim for recognition of native title in Australian law starts via an application to the Australian court system by indigenous people or through their representative body. When native title is recognised, claimants are entitled to a 'bundle of rights'. These rights are outlined in the original claim. The rights can be extinguished during consideration of the claim if the right is inconsistent with the enjoyment of non-indigenous rights. Rights can also co-exist with other land title, e.g., pastoral leases.

Native title rights can include: the right to hunt, the right to take water, the right to conduct ceremonies, etc. The rights vary and are dependent on the traditional laws and customs of the claimant group and the bundle of rights they have sought to claim.

Native title holders must obtain a licence to exercise their rights on a commercial basis. For example, although indigenous people may be granted the native title right to take flora and fauna they are not granted under native title the right to sell bush foods or native wildlife.

Native title in terms of application to tourism is highly dependent on the arrangements made during the approval of a native title application, i.e., the bundle of rights provided, and land tenure before native title. A native title claimant can be granted exclusive rights, which provides them with the power to regulate all aspects of land use. It is also important to note that acts on land subject to a native title claim which are inconsistent with asserted native title rights may be invalid ('invalid future acts' as defined by the Native Title Act 1993 (Cth)) and therefore prohibited. Such acts may attract a right to compensation. Thus, regulatory measures, industry guidelines and all agreements (between industry, stakeholders, government, native title claimants and/or traditional owners) should include recognition of and seek to raise awareness of the fact that where native title has been claimed, those who act inconsistently with native title interests may be liable to pay compensation to native title claimants.

Native title over water again is dependent on the bundle of rights granted. However, in the case of water, native title holders must heed to general water rights, e.g. the right of passage.

One example of a successful native title claim is the Wanjina Wunggurr Willinggin claim, which was ratified in 2004. The claim covers a large area of land in the Kimberly region. The Wanjina Wunggurr community was grated a number of rights, including (Office of Native Title n.d.):

- the Right to Negotiate over the whole of the determination area
- exclusive possession over leases or reserves held for the benefit of Aboriginal people and some unallocated crown land
  and
- non-exclusive possession over much of the land outlined in the claim, including pastoral leases, non-vested reserves, and mining lease areas.

The KLC is the native title representative body for the Kimberley region.

Department of Consumer and Employment Protection

The DOCEP is responsible for licensing the storage and handling of dangerous goods, this includes petroleum[20]. The storage of dangerous goods is regulated in terms of the storage mechanism, disposal and safety standards. Locations where cruise ships refuel along the Kimberley coastline need to abide by these regulations.

Department of Environment and Heritage

The DEH is responsible for management of marine areas outside of the State's jurisdiction. This includes the Ashmore Reef National Nature Reserve, Cartier Island Marine Reserve, and Mermaid Reef Marine National Nature Reserve.

The DEH has two other permits that are required in Commonwealth controlled marine areas – a cetacean permit and a whale-watching permit. These are required by commercial tour operators for appropriate activities. A permit is not required if: the action is authorized under a different permit (such as an incident permit), the action is outlined in a recovery plan for the specie, an emergency involving serious threat to life or property arises, or action is needed to relieve suffering of the animal. If found illegally killing, injuring, taking, trading, keeping, moving, interfering with or treating a cetacean in the Australian Whale Sanctuary, there are penalties up to $110,000 and/or up to two years' imprisonment.

[20] These powers are outlined under the *Dangerous Goods Act* 2004 (WA), which is expected to be proclaimed in late 2006.

Conclusions

The opportunities to regulate or manage commercial tour operators and their activities are not yet clearly defined in the Kimberley region. When activities occur on DEC managed land or in DEC managed marine areas there are opportunities to regulate commercial tour operators via licensing. However, when not on DEC managed land, regulation is dependent on the land tenure and the activities being undertaken by the commercial tour operator. For example, if fishing[21] is an aspect of the tour, the operator is required to obtain a licence from the DoF. There are attempts to develop self-regulation through the use of accreditation. This is discussed further in the section on regulation versus self-regulation.

There are a number of areas which need clarity. This includes both the powers of the ALT and the application of native title. There are several pending native title claims at present, once these claims are settled the powers to regulate commercial tour operators may change. This is dependent on the bundle of rights granted to the claimants and land vesting at the time of the claim. The powers of the ALT, in terms of licensing commercial tour operators, are not clear based on the legislation alone. Further clarification is needed in terms of their powers of regulation.

Sustainable Environmental and Cultural Management Alternatives for the Kimberley Coastal Region

Given these uncertainties provided by the current regulatory arrangements and the current environment of a rapidly growing tourism industry, strong interests and push for development of oil and mineral resources and a booming pearling industry, there is an urgent need to establish a framework for the sustainable development and management of activities along the Kimberley coast, which consists largely of Aboriginal Reserves. The following section provides an overview from the literature of a range of management frameworks applied in relation to tourism and natural area developments as well as some of their strengths, weaknesses and potential suitability for the managing tourism and other activities along the Kimberley coast. While this report is primarily focusing on the expedition cruise industry and tourism, it is vital that a holistic approach incorporating other industries is taken, as they affect each other through their activities and utilisation of resources in the same area.

Management frameworks

Environmental Impact Assessments (EIAs)/Precautionary Principle

Environmental Impact Assessments (EIAs) are often deemed as important management strategies to assess impacts of developments of natural resources. Impact assessments are regarded as a 'formal set of procedures that seeks to identify, predict and evaluate the socio-cultural, biophysical and economic impacts resulting from a proposed project, program or policy'(Trousdale 2001, p. 2). However, the use of EIAs, are not without problems and it is usually an expensive process which concentrates on legislative requirements (Bauer & Dowling 2003).

In Antarctica EIAs are utilised to permit tour operator access in conjunction with environmental monitoring (Stewart et al. 2005). Attempts to evaluate institutional arrangements for EIA processes in Antarctica have not been easy and there is a greater need for the tourism industry and countries that are signatories to the Antarctic Treaty (1968) to fulfil their obligations (Bauer & Dowling 2003). Although the Antarctic Treaty does not mention tourism, several conventions and protocols later developed do address tourism activities, including the Protocol on Environmental Protection to the Antarctic Treaty (known as the Madrid Protocol) (Bastmeijer & Roura 2004). A weakness in the EIA process, highlighted in regard to Antarctica, which should be considered in similar remote environments, is that cumulative impacts are not considered. Impact assessments need to include the process of identifying the future consequences of a current or proposed action and consider implications where tourism activities are to be proposed (Bastmeijer & Roura 2004). In other words, a more holistic impact assessment which considers wider spatial and temporal boundaries is required to determine possible unforseen impacts. Tourism impacts may range from minor or transitory impacts to severe impacts. For example, tourism may introduce or translocate alien species or diseases which would have significant impacts to the Antarctic regions biodiversity. An additional problem of the present EIA process in Antarctica is the fact that the process focuses on assessment of impacts from a narrow perspective. It assesses the impact of a single tourist season or a few seasons, rather than the consequence of a site

[21] Fishing in this instance refers to catching fish for consumption and viewing fish in their natural habitat.

becoming an actual destination (Bastmeijer & Roura 2004).

The question of evaluation of EIA requirement is another issue. An analysis of EIA requirements for Antarctic tourism operators revealed that critical assessment, monitoring and auditing procedures were in fact absent (Bastmeijer & Roura 2004). Problems with monitoring exist in remote locations as they need to include an inventory of flora, fauna and other characteristics of the sites visited and for destinations such as the Antarctica or the Kimberley this is problematic. The status of populations is often not well known and therefore it is difficult to assess the impacts prior to and post tourist visits. As a consequence of the uncertainty it is suggested that precautionary principle be adopted in areas such as the Antarctic (Stewart et al. 2005).

The precautionary principle applies when there are uncertain threats such as from novel activities or when there is rapid growth of a particular activity when impacts are unknown and can be utilised when managing tourism activities. The principle suggests that scientific uncertainty should not be a reason to delay implementation of appropriate measures to prevent environmental damage as a result of activities (Bastmeijer & Roura 2004).

The precautionary principle does not necessitate the banning of tourist activities but merely ensures that the uncertainties revolving around such activities are considered in the decision making processes, such as an EIA (Bastmeijer & Roura 2004). A weighing of the socioeconomic importance and the possible environmental impacts assists determination of precautionary measures (Bastmeijer & Roura 2004). It also determines whether the activity is to be allowed and the development of alternative options. Use of the precautionary principle is deemed a possible strategy for remote locations for a number of reasons, including:

- improved ability to assess cumulative impacts prior to activities being undertaken, rather than waiting for post monitoring answers
- prohibition of tourist activities in potentially sensitive sites where environmental monitoring is lacking or insufficient
- establishment of temporal or spatial limitations for certain sites as required by specific values
- a focus on tourism activities in designation areas to be managed
  and
- the adoption of restrictions on types of tourist activities undertaken at sites (Bastmeijer & Roura 2004).

As a biological hotspot, these issues are relevant to the Kimberley. Cumulative impacts and possible threats need to be considered. For instance the introduction of alien species could lead to dramatic outcomes for the flora and fauna of the region. In addition certain areas of the Kimberley visited by tourism cruise ships, such as the Mitchell Plateau or one of the islands, may be exposed to increased visitors each season and as such monitoring will need to assess cumulative impacts and possible management strategies.

Appropriate Tourism Impact Assessment

An important issue associated with the use of EIAs is that developers do not need to include mitigation procedures for social or cultural resource impacts and if the process is to be effective these aspects must be included (Trousdale 2001). Trousdale (2001) suggests an adaptation of the EIA process for tourism assessments in the form of an Appropriate Tourism Impact Assessment (ATIA). This model incorporates the values of stakeholders, which works towards mitigating the social and cultural impacts, and involves educating developers or operators through a partnership approach assessment (Trousdale 2001). Community participation is central to the development of the framework which includes technical aspects and aims to identify impacts using procedures such as checklists, matrices and unstructured interviews. Scoping exercises which includes input from tourism and non-tourism stakeholders revolve around six main impact criteria:

- the magnitude (amount of change)
- the extent (area affected)
- the significance (how important)
- the special sensitivity (country or regional issues)
- the time frame (duration)
- the irreversibility (permanence of change) (Trousdale 2001).

A possible matrix may look like:

Component	*Possible Effects*	*Stage & Associated Activities*	*Comments*	*Likelihood (low, medium, high)*
Environmental				
Social				
Cultural				
Economic				

While Trousdale's (2001) model was geared for land-based developments such as resorts, it may be a useful process for involving key stakeholders in the Kimberley as it includes local information and values; identifies issues and gives opportunities to make critical transition from knowledge to action.

Social Cost Benefit Analysis

A similar framework developed by Hoyt (2005) considers social and cultural impacts of tourism in planning processes and is based on a Cost Benefit Analysis (CBA). Cost Benefit Analysis has an economic focus and has been used to compare possible options of various actions or uses versus non-use of resources including forests, coral reefs, protected areas and wildlife (Hoyt 2005). It can also be used to analyse social and cultural impacts of tourism related activities such as whale watching by establishing a series of matrices (Table 10). For example, matrices can be developed to identify key stakeholders, the values associated with whale watching, the use and non-use value for each item and finally the cost of whale watching (Table 10).

Table 10: Example of matrices used in Cost Benefit Analysis

Value of Activity	
Type of value, benefit and service provided by whale watch industry	***Explanation of value created by the existence of whale watching***
Scientific	Generates scientific value (increase knowledge about cetaceans, their habitat etc.)
Financial	Contributes to local economy
Aesthetic	Scenic beauty, serenity of experience
Use and Non-Use Value	
Direct use value	Derived on-site from participation in whale watching
Indirect values	Generated off-site as a result of experience
Non-use values	Existence value: knowing whale watching will continue to exist now and in the future
Costs of Activity	
Destination region	
Ecological	Use of boat fuel and water pollution
Social	Strain on local services due to influx of tourists
Economic	Infrastructure problems
Transit region	
Ecological	Jet plane and car emissions
Social	Implications of travel choice on greener alternatives
Economic	Implications of travel choice on greener alternatives

Source: Hoyt 2005

The matrices create a framework for planning options and require engagement of all stakeholders. Hoyt (2005) believes that the frameworks should be used in addition to other strategies, such as the establishment of marine protected areas, which is deemed an effective option that should be considered to manage tourism.

Marine Protected Areas/ zoning

The development of Marine Protected Areas (MPAs) and zoning of activities are two strategies used to minimise tourism impacts to sensitive marine areas and to protect marine life (Barker & Roberts 2004; Bunce, Gustavson, Williams & Miller 1999). MPAs have been developed in areas as diverse as the Atlantic islands, the Caribbean, Mediterranean and the Great Barrier Reef in Australia (Harriott 2002; Ingham & Summer 2002; Milazzo et al. 2002a). A network of MPAs is often developed to protect species such as whales. For example, MPAs link the islands of the Atlantic which are important migration zones for whales (Ingham & Summer 2002). The Caribbean and Mediterranean are developing a network of MPAs, to protect cetaceans and manage whale watching and ecotourism activities while Brazil and the European Union are also developing MPAs to protect offshore reefs, islands and marine life (Davenport & Davenport 2006).

Marine Protected Areas can be divided using a multi-zone approach which comprise highly protected core areas, mixed zones allowing tourism and light use, and transition zones with more extensive use and development. Activities such as scuba diving for instance may be designated to particular areas within an MPA, where monitoring can occur, although this does not guarantee that impacts will not occur (Hoyt 2005). Hoyt (2005) argues that MPAs should be used in conjunction with marine ecotourism (e.g. whale/dolphin watching) to achieve regional economic, educational and research goals as well as sustainability. He also argues that benefits for tourism operators can be achieved through provision of marketing advantages through highlighting the importance of the particular zone. Within the literature however, questions exist in respect to possible impacts of ecotourism as it evolves (Burton 1998; Holden 2003; Mowforth & Munt 1998). Warnings suggest that the ecotourism experience is a niche of more general tourism that demands facilities and infrastructure which may result in social, cultural and environmental impacts (Holden 2003). Ecotourism should not be simply viewed as a panacea for mitigating tourism impacts in general and careful monitoring of ecotourism activities needs to occur.

Within Australia the most significant use of MPAs is within the Great Barrier Reef, but smaller MPAs are also found in Tasmania and have been used as a strategy to manage tourism activities such as expedition cruise tourism (Parks and Wildlife Service Tasmania 2002).

Tasmania, like the Kimberley, offers a unique wilderness experience for cruise expeditions offering opportunities to explore some 334 offshore islands and access many unique locations (Ellis & Kriwoken 2006). Many of the cruise ship expeditions are located in Tasmania's South West World Heritage areas which have significant natural and cultural values and are managed under Tasmanian Wilderness World Heritage Area (TWWHA) Management Plan (Parks and Wildlife Service Tasmania 2004). The Port Davey Bathurst Harbour is an attraction for cruise ships which has conservation significance. The values of the area include an unusual marine environment with associated communities, Aboriginal heritage, historic heritage, and wilderness values (Parks and Wildlife Service Tasmania 2002). These values are similar to those of the Kimberley. The area is managed by the Melaleuca-Port Davey Advisory Committee (MPSAC) which is guided by the Melaleuca-Port Davey Area Plan (Parks and Wildlife Service Tasmania 2004, p. 4). The Plan identifies management issues and outlines the key biophysical components and key areas of significance within the area. Management zones designated for the area include wilderness and recreation zones which specify appropriate commercial & recreational activities which can be conducted within the area. Importantly, the plan also identifies alternative management strategies such as interpretation and education which can be used to assist impact minimisation and enhance the visitor experience (Parks and Wildlife Service Tasmania 2002).

In addition to the management plan, the Parks and Wildlife Service developed specific guidelines for commercial tourism vessels. The guidelines aim 'to protect values of this relatively undisturbed natural area whilst allowing for controlled tourism and recreation access (Parks and Wildlife Service Tasmania 2004 p. 4)' The guidelines set out aspects including the restricted access and non-access zones available to operators, vessel size, speed limits; number of vessels; anchorage and mooring and the onshore activities which are allowed. All vessels are required to apply for a license to operate in the Port Davey area (Parks and Wildlife Service Tasmania 2004).

The most well known MPA in Australia is the Great Barrier Reef Marine Park (GBRMP) comprising an area of some 345,400 square kilometres. The Park is managed by the Great Barrier Reef Marine Authority (GBRMPA). In order to manage the reef and the various commercial and recreational activities, the marine park is divided into management areas or zones which have individual management plans. The GBRMP includes islands, the subsoil beneath the seabed, and the airspace above the reef (GBRMPA 2005a). In addition to the marine park, there is also a Great Barrier Reef Coast Marine Park, which extends the length of the GBRMP and includes inshore, intertidal and

estuarine areas (GBRMPA 2005b). Management of the area is governed by Commonwealth legislation under the Great Barrier Reef Marine Park Act 1975 and state legislation under the Queensland Marine Park Act 1990

All activities within the GBRMP are guided by a Zoning Plan which establishes access zones for tourism operators. All tourism operations are required to have a permit to operate within the Park and cruise ships have a booking requirement as part of the permit. Permits generally have a six-year term, however, a 15-year term extension may be given if appropriate certification has been gained by the operator (GBRMPA 2005a). The GBRMPA also established a management policy specifically for cruise ships in 1999, although the main focus was for ships in excess of 70 metres. Expedition cruise ships were identified as a growing sector of the cruise industry, particularly in the far northern section of the Marine Park which offers 'wilderness' experiences. The policy addresses issues such as:

- anchorage and mooring locations along with booking arrangements for these areas
- types of activities
- use of ship's tenders
- expedition cruise ship access to specific areas within the Marine Park
  and
- promotion of World Heritage Values.

In addition to the use of MPAs as a management strategy, the GBRMPA has developed a series of guidelines and certificate courses to assist tourist operators. The use of guidelines will be discussed further in later sections.

An important consideration when considering designation of MPAs or other protected areas, such as National Parks is of possible conflicts with local Aboriginal communities. Aboriginal communities view terms such as 'wilderness' areas and the zoning of protected areas as impinging on their Indigenous rights (Parks and Wildlife Service Tasmania 2002; Wunambal Gaambera Aboriginal Corporation 2001a). Therefore consultation and collaboration is essential to ensure that cultural values are firstly understood and secondly, management regimes are consistent with these cultural values. It also needs to recognise adequate joint management in the decision making process, empowering the Traditional Owners. The process should be seen as a way to assist Traditional Owners in managing and protecting country.

Planning frameworks

Management of tourism's use of natural areas, such as the Kimberley, requires effective planning strategies to mitigate potential impacts of sensitive areas. In order to achieve effective tourism planning, both public and private sector interest groups representing a diversity of stakeholders, must be included in the planning process (Hall 2000). In addition to the above management strategies a number of well known planning frameworks have been developed for natural areas in order to plan and manage recreational and tourism activities (Newsome et al. 2002). Six of the most commonly identified tourism and recreational planning frameworks and their strengths and weaknesses are summarised in Table 11. Table 12 establishes the frameworks suitability for use, according to specified criteria as summarised by Newsome, Moore and Dowling (2002).

Table 11: Summary of Key Planning Frameworks for Natural Areas. Source: Newsome, Moore and Dowling (2002).

Planning framework	Aims	Method	Strengths (+) and Weaknesses (-)
Recreation Opportunity Spectrum (ROS)	To develop, identify and determine the diversity of recreation opportunities for a natural area	Categorises areas as opportunity classes ranging from primitive to developed. Uses physical, social and managerial characteristics to describe and compare classes. Steps 1. Determine demand 2. & 3. Determine supply and capability of area 4. & 5. Determine best mix for area 6. Implementation with management objectives for each class	+ Effective in zoning + Ensuring a range of recreation opportunities at local and regional level + Visitor management is integrated with other planning mechanisms – If lack of agreement on opportunities decisions and implantation not possible
Limits of Acceptable Change (LAC)	To set measurable standards for managing recreation in natural areas. Stakeholders can provide value judgements regarding the acceptability of impacts	Process for making management decisions for an area and zones 1.& 2. Management issues and ROS determined 3,4,5 Indicators selected to measure existing resource and social conditions and acceptable standards. Indicators have following attributes: • Are capable of being measured-cost effective & acceptable levels of accuracy • Condition of indicator reflects relationship to the amount/type of use • Social indicators should relate to user concern • Condition of indicator must respond to management control	+ The ability to determine when 'enough' change has occurred – Difficulty in selecting standards – Gaining stakeholder support
Visitor Impact Management (VIM)	To develop strategies to keep visitor impacts within acceptable levels	1. Review of legislation, policies, previous research and data 2. Review existing objectives 3. Select key impact indicators-social & ecological 4. Select standards for key impact indicators 5. Compare standards & existing conditions 6. Identify probable causes of impact 7. Identify management strategies 8. Implement (5-6 requires monitoring)	+ Reliance on science and subjective judgement to guide visitor management. Particularly suited to small sites – Does not make use of ROS
Tourism Optimisation Management Model (TOMM)	To develop tourism planning in natural areas	*(1& 2. Context description)* 1. Plan process & stakeholder involvement 2. Compile context description *(3,4,5. Monitoring programme)* 3. Develop monitoring programme 4.Refine context description 5. Prepare draft and final versions of plan with stakeholders 6. Implement and refine model (management response)	+ Explicit inclusion of the political and economic environments in which use of natural areas occurs & of stakeholders – Amount of information required-data management and manipulation requires significant level of resources
Visitor Activity Management Process (VAMP)	To use an integrated planning process-whole-of-park approach	1. Establish terms of reference 2. Confirm management objectives 3. Create data base of park ecosystems 4 & 5. Analyse alternative visitor activities 6 & 7. Create management plan and implement	+ Allows recognition of demand and supply side of natural area management – Difficult to shift managers from a product to market-centred approach – Failure to develop limits or acceptable ranges for impacts
Visitor Experience Resource Protection (VERP)	To determine the appropriate range of visitor experiences for a chosen area To produce zones for inclusion	1. Assemble project team 2. Develop public involvement strategy 3. Detail park purpose, themes, planning requirements & constraints 4. Analyse park resources and existing visitor use 5. Determine potential range of visitor use 6. Allocate zones 7. Select indicators and standards for each zone, develop monitoring plan 8. Monitor 9. Take management actions	+ Useful as a management planning framework and ready inclusion in management plans. – Without implementation & monitoring the acceptability or otherwise of impacts cannot be determined

Table 12: Choosing the 'best' recreation/tourism planning framework (Newsome et al. 2002 p. 181)

Planning Framework	Suitable for regional planning (i.e. for more than single natural area)	Provides information on impacts of visitor use needed for management action	Makes explicit provisions for inclusion of stakeholders in planning	Responsibility/ direction for action left to managers	Readily integrated with other forms of planning (e.g. Management of tourism plans	Results in a publishable, stand-alone document
Recreation Opportunity Spectrum (ROS)	XXX	-	-	-	XX	-
Limits of Acceptable Change (LAC)	X	XX	XXX	XX	X	XX
Visitor Impact Management (VIM)	-	XXX	-	XX	X	XX
Tourism Optimisation Management Model (TOMM)	XXX	XXX	XXX	XXX	X	XXX
Visitor Activity Management Process (VAMP)	XXX	-	-	-	XX	-
Visitor Experience Resource Protection (VERP)	XXX	XX	XX	-	XX	X

KEY: XXX—matches criteria well; XX—partially matches criteria; X—poorly matches criteria; - does not match criteria

With respect to the managing tourism activities along the Kimberley coast, none of the suggested frameworks adequately consider Traditional Owner involvement and joint management. Of the given frameworks, LAC and TOMM appear to be the most suitable frameworks for the Kimberley, and maybe a combination of those could be applied. Nevertheless, with the uncertainties in terms of responsibilities and control highlighted by the legislative review, an overall management structure needs to be agreed upon first who could then be assigned with implementing these frameworks.

Guidelines/codes of conduct/ accreditation

Guidelines, codes of conducts and/or accreditation schemes are used as complementary strategies to manage and minimise tourism impacts and maximise benefits to natural and social environments. Strategies have developed at international, national and local levels to deal with general through to specific location issues.

At a global level, the International Standards Organisation (ISO), a non-government organisation, has developed a series of environmental standards applicable for wide ranging activities, including shipping, and assists organisations to be pro-active in managing environmental issues through adoption of environmental management systems (International Maritime Organization 2002; Martin 1998; Newsome et al. 2002). The ISO standards are commonly identified as the ISO14000 and ISO 14001 models and have been used to develop guidelines by organisations such as the International Maritime Organisation (IMO) which governs international shipping (Newsome et al. 2002). The IMO concentrates on shipping in general rather than cruise ships, however cruise ship organisations such as ICCL have signed up to conventions such as the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL 73/78)(Benis 2000). The convention covers accidental and operational oil pollution but also pollution by chemicals, goods in packaged form, sewage, garbage and air pollution. IMO also established guidelines to prevent environmental threats caused by routine operations such as the cleaning of oil cargo tanks and the disposal of engine room wastes known as International Safety Management (ISM) Code 2002 (United States Environmental Protection Agency 2000).

The growth of cruise ship tourism and concern about the impact of cruise ships in North America led to the Cruise Ship White Paper in 2000, which was a petition identifying significant concerns

regarding cruise ship impacts, particularly in Alaska. The petition was convened by a non-government organisation, the Bluewater Initiative, and made recommendations for future guidelines and other initiatives such as legislative requirements (International Council of Cruise Lines 2006). The White Paper resulted in the Alaskan Interagency Cruise Ship Initiative which aimed to address a number of issues and establish guidelines surrounding pollution control, monitoring of waste water and equipment requirements for vessels, such as MSDs. The White Paper also identified all legislation and international conventions that were pertinent to the cruise ship activities in North America to which the industry should abide by (International Council of Cruise Lines 2006).

As a result of growing concern and the White Paper, the ICCL, sought to establish an independent science panel to undertake a review and evaluation of current management practices for cruise ship waste water discharges. The science panel released eleven recommendations which provided guidelines for industry practices. Recommendations included:

- voluntary prohibition on discharge of untreated grey water unless four nautical miles or 12 nautical miles from sensitive habitat;
- commissioning a global mapping project to identify and integrate into navigational charts, the sensitive marine areas where discharge should be avoided
- improved practice offloading sewage sludge
- monitoring of all treatment systems
- minimising use of chlorine and bromine disinfection
- improve source control, including the provision of biodegradable soaps and shampoos in cabins (Alaska Department of Environmental Conservation 2002).

ICCL has since begun a global mapping project as part of the adoption of the science panel recommendations.

In order to establish appropriate guidelines research is required on the actual impacts that occur as a result of cruise activities. The Alaska Department of Environmental Conservation established a science advisory panel in 2001 to assess the impact of cruise ship wastewater discharge in Alaskan waters through effluent characterisation and dispersion modelling (Alaska Department of Environmental Conservation 2002). Research on both larger and small cruise ships was conducted over a 20 month period. The research on small vessels, found that six per cent of the total wastewater discharged into Alaskan waters came from small vessels and that discharges, while anchored or in ports, are not mediated by dispersion techniques. The MSDs on board the vessels, although viewed as effective in wastewater treatment, used high levels of chlorine that is toxic to marine life. The panels' recommendations included continued monitoring of small passenger vessels, the development of policies to prevent small cruise ships discharging wastewater while stationery, and prevention of over-chlorination (Alaska Department of Environmental Conservation 2002). The panel recommended that small ship discharges be avoided in areas of low net marine water outflow, such as the head of fjords and bays. The research also identified that small ships did not record their wastewater discharge locations, which is a requirement for larger vessels and recommended that this should occur for monitoring purposes.

Guidelines have been developed for cruise ship tourism in other sensitive locations such as the Antarctica through organisations such as the IAATO. IAATO developed a set of guidelines for tour operators (International Association of Antarctica Tour Operators n.d-b) and visitors (International Association of Antarctica Tour Operators n.d-c) along with wildlife watching guidelines to assist operators viewing cetaceans, seals, and birds in their marine environment (International Association of Antarctica Tour Operators n.d-a). The IAATO guidelines assist operators' compliance requirements with various treaties, including the Protocol on Environmental Protection to the Antarctic Treaty. In attempts to monitor activities the guidelines specify reporting procedures for operators once activities have been completed. Reports include details of passenger numbers, any meteorological observations made and any changes in their activities and their impacts predicted prior to visiting (International Association of Antarctica Tour Operators n.d-b).

Visitors also receive guidelines prior to visiting the Antarctic (International Association of Antarctica Tour Operators n.d-b). The guidelines outline legislative requirements and wildlife viewing procedures and emphasise respect for protected areas and scientific research. In addition the guidelines set out safety procedures and how to ensure that visitors keep the Antarctic in pristine condition. Monitoring of tour operators and their passengers relies on the good will of operators to comply with guidelines (International Association of Antarctica Tour Operators n.d-a).

Guidelines are often established by non-tourism and non-government organisations in attempts to manage tourism impacts. For example, in the Mediterranean guidelines were developed by the World

Wide Fund for Nature (WWF) in recognition of the tourism industry's recognition of the need for voluntary codes of conduct (Borelli & Minestrini 1999). The codes of conduct were based on ten principles associated with Mediterranean tourism and were directed at three main groups; the tourists, the tourism industry and government authorities. Codes of conduct developed for tourism operators covered areas such as instigating environmental management systems, keeping accurate records of activities and providing environmental and social information awareness strategies for tourists (Borelli & Minestrini 1999). Visitor guidelines encouraged support for biodiversity, sustainable use of natural resources, respecting local cultures and historic sites and careful choice of reputable tour operators (Borelli & Minestrini 1999). Similar guidelines were established for local authorities and included areas such as planning and conservation, involving local communities in the planning process, consideration of indigenous interests when promoting tourism activities and developing education measures to ensure visitors learn about the Mediterranean environment (Borelli & Minestrini 1999). The WWF recognised the limitations of such codes of conduct without independent verification or monitoring of operators or appropriate governmental regulations and enforcement (Borelli & Minestrini 1999).

Areas such as the Great Barrier Reef also manage tourism activities via the use of guidelines and codes of conduct, which build on extensive regulations and license conditions imposed on operators. The GBRMPA developed a series of guides and codes of conducts for tourism operators using the GBR in an information package entitled 'Onboard. The Tourism Operator's Handbook for the Great Barrier Reef' (GBRMPA 2005a). The package includes information on how to apply for a permit what a permit means, the various zones across the Park, accessible areas and the types of tourism products that are available. Guidelines developed by the GBRMPA to ensure that best practices are utilised by operators include:

- *Fuel and oil handling*
- *Supporting local communities*
- *Moorings and anchoring procedures*
- *Island visiting requirements*
- *Protocols for fish feeding and marine life viewing*
- *Bird watching and specific wildlife protection* (e.g. dugongs)
- *Collecting*
  and
- *Education and interpretation.*

In addition to these guidelines, the GBRMPA offers certification courses for tour guides which give an introduction to reef biology, ecology and management. The aim of the certification program is to increase the level of understanding of the reef and provide opportunities for tour operators to improve their interpretation skills (GBRMPA 2005a). The GBRMPA also rewards operators who become accredited through the Eco Certification program which was developed by Ecotourism Australia. Rewards for accredited operators include applying for longer term permits, easier administration procedures and marketing advantages (GBRMPA 2005a).

The Eco-Certification program has developed and evolved since it was first introduced into Australia in the late 1990s as the National Ecotourism Accreditation Program (NEAP). It is a program developed by the tourism industry for the tourism industry in an attempt, initially, to identify genuine ecotourism operators, and later expanded to include nature based operators (Ecotourism Australia 2003). The initial program was specific to Australia but it is has now expanded to the rest of the world as the International Ecotourism Standard in conjunction with Green Globe 21 (Ecotourism Australia 2003). The Eco-Certification program is based on economic, environmental and social sustainability principles and includes aspects such as:

- business management and operational planning
- business ethics
- responsible marketing
- customer satisfaction
- natural areas focus
- environmental sustainability
- interpretation and education
- contribution to conservation
- working with local communities
  and

- cultural respect and sensitivity.

(Earthcheck 2005)

The certification program accredits a wide range of operators; however there are no specific references to expedition cruise ship operators. Applications are assessed by an independently trained assessor and once accredited the certification is valid for three years. Monitoring of accredited operators is carried out by an audit during the three years and from customer feedback (Ecotourism Australia 2003).

Guidelines and codes of conduct for tourism operators have been developed at an international level with organisations such as Green Globe 21 who are concerned with ensuring tour operators achieve high standards in environmental and social sustainability (Green Globe 21 2004). Green Globe 21 is the global benchmarking, certification and improvement system developed to ensure a sustainable tourism industry based on Agenda 21(Green Globe 21 2004). Green Globe 21 has established world wide alliances, including the Cooperative Research Centre for Sustainable Tourism (STCRC) whose research and development activities underpin the Green Globe standards (Green Globe 21 2004).

The Green Globe program certifies companies and communities against a global standard which contain environmental and social performance standards. Sector specific benchmarking indicators have been developed for a range of tourism sectors including cruise vessels (STCRC 2003). Requirements set out for all tourism organisations are established in several guidelines including the Green Globe 21 Company Standard for Travel and Tourism. The objectives of the company standards are to facilitate:

- responsible and sustainable environmental and social activity; and
- improved environmental and social outcomes.

(Earthcheck 2005)

Green Globe 21 uses a set of key performance areas for tourism operators to benchmark a company to assess their eligibility for certification (STCRC 2003). Performance area indicators for company standards include (STCRC 2003):

- greenhouse gas emissions
- energy efficiency, conservation and management
- management of freshwater resources
- ecosystem conservation and management
- land use planning and management
- air quality protection and noise control
- waste water management
- waste minimisation, reuse and recycling.

Operators who are assessed above a designated baseline and satisfy all the requirements of the company standard are certified after an independent audit and are entitled to use the Green Globe 21 logo (STCRC 2003).

Expedition cruise ships operating within the Kimberley region are not required to be accredited or certified with any certification program, however 16 operators were accredited with Tourism Council of Western Australia (TCWA) and two with Ecotourism Australia. The Department of Environment and Conservation (DEC) does, however, offer extended licence periods for accredited operators. The focus of TCWA accreditation program is largely on safety and operational issues, rather than environmental and social requirements. There are no specified guidelines or codes of conduct for operators other than specific vessel safety and maintenance requirements set out by the Department for Planning and Infrastructure (Department for Planning & Infrastructure 2003). Licences are also required by all vessels that plan on entering waters which are managed by the DEC and these licences include general guidelines for operators (CALM 1999). Issuing of licences is deemed by DEC as a means to monitor and managing access and use of the DEC protected areas in order to maintain conservation values associated with designated sites (CALM 1999). General guidelines relate to sullage and bilge water discharges, general waste, installation of waste disposal systems and anchoring. In the Kimberley region, specific DEC managed sites include the Prince Regent Nature Reserve and Mitchell River National Park.

Levies and monitoring

Levies or fees are often used to assist management of tourism destinations utilised for tourism activities. For example, the GBRMPA charges each operator an Environmental Management Charge

(EMC) which goes towards management of the reef (GBRMPA 2005a). In Alaska, passenger fees are also collected from cruise ships which are used to assist in management of resources used by the vessels. A one dollar per passenger fee is used to pay for pollution monitoring programs, inspections, and law enforcement (Klein 2003b). Fees may be used in more remote locations to pay staff and assist in monitoring activities which in remote destinations is often difficult.

In Alaska the extent of pollution created and level of violations by the cruise ship industry led to public support for monitoring programs (Klein 2006a). Environmental groups, government and industry personnel met to develop monitoring mechanisms for wastewater and air emissions which when implemented found significant levels of water pollution and air emissions resulting directly from cruise ships (Klein 2006a). Based on findings, legislation was introduced to strengthen monitoring cruise ship discharge practices, enforce clean air and water standards for ships and imposed a fee per passenger to pay for pollution monitoring (Klein 2006a).

Monitoring poses difficulties for remote or large areas where vessels operate. One strategy utilised by organisations such as IAATO and the GBRMPA involves tourism operators reporting incidents related to other operators (GBRMPA 2005a; Stewart et al. 2005). Feedback mechanisms in the form of reports have been established by IAATO (Murray & Jabour 2004) in order to prevent impacts going unnoticed.

Although the Kimberley does not resemble or experience the problems faced by regions such as Alaska, it is important to note that cruise ship tourism began with small cruise ships and then expanded rapidly into the mass tourist market before plans and management processes were in place. Antarctica also began with small ships but has expanded rapidly in recent times creating concerns for future impacts. The ability of all stakeholders to work together to determine workable management structures is important. Monitoring is one key element that is required in order to minimise impacts to the ecological environment.

Interpretation/education

Interpretation and education are often cited as management strategies which will not only enhance the visitor experience, but also will increase visitor knowledge and understanding of natural areas and lead to behavioural changes that minimise tourism impacts. Ham and Weiler (2002) assert that interpretation can, in fact, contribute to economic sustainability for both tourism operators and local communities, through increasing visitor demand and creating local employment. They argue that it makes good business sense for operators to enhance visitor experiences through interpretation. Wildlife tourists in particular want accurate, timely and relevant information during their experience and interpretation offers a way of connecting people to the places they go and to the wildlife they experience (Armstrong & Weiler 2002).

Interpretation can be defined as ‘an educational activity that seeks to develop intellectual and emotional connections between the visitor and the natural and cultural environment (Meister 2004)’. Meister (2004) for instance believes that visitor education in regard to Indigenous culture in the Kimberley leads to positive changes in visitor attitudes towards Aboriginal people and a greater understanding of the impact visitors may have on the environment. The GBRMPA highlights education and interpretation as a means to generate a visitor connection with the reef and encourages tour operators to inspire their passengers with their interpretation of the reef (GBRMPA 2005c). The guidelines in interpretation and education for tour operators emphasise the importance of entertaining visitors and using a variety of interpretative methods to impart messages, rather than simply relay facts about the reef.

A study into the impacts of coastal tourism in the Caribbean also argued that behaviour changes for tourism policy makers could be achieved through greater information and awareness campaigns which highlighted the economic benefits of mitigating negative environmental impacts. The study argued that if behavioural changes were to occur, then the given audience must ‘be exposed to it; pay attention to it; comprehend it; accept it; retain the new attitude and change behaviour’ (Panos Institute & Caribbean Institute of Media and Communication 1997 p. 39). The study pointed out that it is only when people have ‘hands-on’ action that attitudes will change (Panos Institute & Caribbean Institute of Media and Communication 1997).

Natural resource management agencies such as Australia’s state based agencies including the Parks and Wildlife Service in Tasmania, and Department of Environment and Conservation in Western Australia also advocate interpretation as a tourism management strategy (CALM 2005; Parks and Wildlife Service Tasmania 2002). In the Guidelines for the preparation of Licences for Commercial Tourism Vessel Operators in the Port Davey-Bathurst Harbour, interpretation was cited as an important strategy to ‘enrich the experience of the visitor, and...influence visitor behaviour by highlighting the

significance of and need to protect the natural and cultural values of the area' (Parks and Wildlife Service Tasmania 2004 p. 18).

Interpretation, as noted previously, has also been viewed as a management intervention measure in areas such as the Great Barrier Reef. Madin and Fenton (2004) undertook research on board reef-trip vessels to assess the effectiveness of interpretation. Findings revealed that there were significant changes in passenger knowledge of the reef environment following exposure to the interpretive program compared to those passengers not exposed to the program. However the research did not produce any insight into whether this knowledge translated into changing behaviour or values.

Despite the claims that interpretation and education can bring about changes in attitudes and behaviours, there is very little research which explores this issue. Armstrong and Weiler (2002) who reported on a Victorian study of tour operator messages , believe that greater research is required on the interpretation presented by operators and the content of that interpretation. The study of Victorian tour operators questioned the effects of interpretation on changing attitudes, finding that the most frequent message received by visitors was about minimising local impacts, rather than long-term attitude changes (Armstrong & Weiler 2002).

Other studies by Walker (2005) and Walker and Moscardo (2006) focused on interpretation on expedition cruises which are often promoted as a form of 'ecotourism'. The studies were conducted on expedition cruise ships in Alaska and Australia and Papua New Guinea and both concluded that interpretation on cruise ships can make a contribution to environmental awareness and a broader global concern for environmental impacts. However, the research did not determine whether attitude changes were transferred to behavioural changes at home or other locations.

The role of the interpreter is important if positive outcomes are to be achieved. The interpreter must actively engage visitors and present information that matches their current state of understanding, extending from the experience itself (Ham & Weiler 2002). Walker (2005) believes a multi-centric approach to interpretation is important and cruise ships provide ideal platforms for this approach. Passengers can engage with a variety of staff who spend time with them gaining insights into their levels of understanding and they offer different expertise and cultural and social perspectives. A combination of different interpretive experiences both on board and land-based, in conjunction with staff dedication, enthusiasm and knowledge may achieve more effective outcomes (Walker 2005).

Expedition cruises by their very nature, explore not only the ecological environment but also the socio-cultural environment and tour operators have an important role to play when presenting interpretation of cultural sites (Ham & Weiler 2002; Walker 2005). Special permits or legal requirements may be necessary prior to visitation of Indigenous sites and if not, operators need to ensure that tours are conducted in ways that minimise impacts and contribute in a positive way towards the community (Ham & Weiler 2002; Weiler & Ham 2001). It is vital that accurate, culturally sensitive and appropriate interpretation of the site or resource is presented which will leave the visitors with a positive attitude and a greater understanding of Indigenous culture, values and of their contemporary lifestyle and issues (Lane 1997 p. 312). Use of local guides may be beneficial for operators as a joint venture. Local guides understand cultural protocols and sensitivities of visiting sites and add an authentic element to the visitor experience while at the same time providing economic opportunities for local communities (Ham & Weiler 2002). Examples of such arrangements exist from Queensland, Australia, and are discussed in a later section.

However, in order to undertake joint initiatives it is important that training is given to potential guides and that this is acceptable to Traditional Owners. Statements from our interviews with Traditional Owners indicated that they do not want to be on board vessels but would rather be in a ranger role on site. Nevertheless, the logistics of this are difficult and costly.

In the Kimberley, both wildlife and Indigenous sites are two key attractions cited by the cruise ship operators to market their products and interpretation may provide benefits for operators, indigenous communities and the DEC. In order to asses the benefits of interpretation, further research is required into the content of existing interpretation on tours, the messages received by passengers and training required by potential local guides.

Inclusion of Indigenous communities

From the literature it is evident that decision makers often overlook, ignore or interpret Aboriginal perspectives without proper consultation. Although EIAs require public participation this is often not undertaken adequately (Lane 1997). The unique cultural perspectives of Aboriginal people make their participation in tourism planning essential, although important issues need to be recognised. These include:

- language and cultural barriers
- geographical isolation
- a lack of resources
- a lack of familiarity with non-indigenous planning and decision making processes (Lane 1997).

Community-based planning is one strategy to overcome problems regarding Aboriginal marginalisation and misinterpretation of Aboriginal perspectives. It is important that participatory strategies are based on consensus and direct involvement not merely delegating and representation (Altman & Finlayson 1993). It must be based on 'the right people talking for the right country' (Altman & Finlayson 1993). A lack of understanding of Aboriginal social organisation based on stereotyped assumptions of geographically bounded and socially cohesive communities has led to the failure of past planning processes (Schmiechen 2006).

Joint ventures involving Indigenous and non-Indigenous people often have greater success, bearing in mind that uncertainty and short timeframes impede potential investment opportunities (Schmiechen 2006; Schuler, Aberdeen & Dyer 1999). Joint management is the sharing of responsibility for managing a protected area. Such arrangements show formal recognition by government agencies of the relationships between indigenous people and protected areas (Newsome et al. 2002). It may be in the form of the park management agency formally leasing the land from the traditional Aboriginal owners, such as is the case with Kakadu and Uluru National Park, or may include a board of management with the majority membership from the Aboriginal owners and a jointly developed statutory management plan (De Lacy 1994).

If tour operators or other key stakeholder wish to engage with the indigenous communities in the Kimberley, it is important to understand important protocols regarding interactions that exist. Schuler, Aberdeen and Dyer (1999) suggest the following protocols are useful when talking to Aboriginal communities:

- using silence when considering questions and answers
- conveying information through storytelling
- needing to perceive time, distance or sequence in a holistic sense
- gratuitous concurrence, that is, to agree to something as a matter of good manners while harbouring reservations.

A number of important prerequisites for successful and sustainable tourism involving Indigenous people were identified by Altman and Finlayson (1993) which include:

- Aboriginal control
- market realism for participants
- appropriate corporate structures
- appropriate scale of enterprises
- accommodation of cultural and social factors;
- educating the industry and consumers; and
- realistic subvention.

In order for Aboriginal communities to participate in tourism, governance structures applicable to any business success need to be in place. Governance can be defined as:

> the process, structures and institutions (formal and informal) through which a group, community or society makes decisions, distributes and exercises authority and power, determines strategic goals, organises corporate, group and individual behaviour and develops rules and assigns responsibility (Dodson & Smith 2003 p. 1)

Impediments to tourism include the remoteness of many communities, high transport costs, small populations and low economies of scale. Many Indigenous projects simply fail because:

- Insufficient capital is secured or support given to individual operators or family units.
- Community leaders could not attract customers, or external market forces changed.
- Lack of a viable succession to continue with existing businesses.
- Project managers found themselves overwhelmed by the workload or by conflicting, politicised instructions from community leaders.
- Good projects were undermined by community factionalism (Dodson & Smith 2003).

Importantly, effective governance requires input from both state and civil society and must reflect the set of values and norms inherent in a particular society (Connick & Innes 2003). Increasingly governance networks between non-government and government stakeholders are being developed in

order to create greater dialogue with stakeholders such as Indigenous communities (Reed 2000). Good governance in tourism will require effective planning mechanisms, an understanding of the complexities involved and the ability to ensure collaboration of stakeholders and the identification of shared values (Connick & Innes 2003).

Regulation versus self-regulation

Regulation is used by governments to manage wide ranging activities including those associated with natural resources such as marine environments. Key cruise ship destinations such as North America and Antarctica use legislation to enforce standards amongst cruise ships in order to minimise environmental impacts (Klein 2003a; Murray & Jabour 2004). In addition to legislation, organisations such as the ICCL and IAATO advocate self-regulatory guidelines for cruise liners. Minimal research exists on the effects of self-regulation as opposed to regulatory frameworks on reducing negative tourism impacts. Forsythe (1995) suggested in one study, that companies feared that regulation for the sake of environmental or social protection would interfere with business performance and thereby threaten profitability. According to Forsythe (1995), regulations controlled from within industry would be more realistic for businesses than those imposed from outside the industry. However in a subsequent study of self-regulation of tour operators in Britain, Forsythe (1997) found that operators considered voluntary environmental responsibility to be ineffective and believed that regulation was necessary in order to prevent environmental degradation and abuse of the market by 'free-riding' companies which acted irresponsibly in environmental or financial terms. Although companies were seen to adopt a wide range of best practices, there was still a perception that environmental regulation of tourism development was required.

Self-regulation can take many forms, such as the development of guidelines, accreditation or codes of conduct or in the form of Memorandums of Understandings (MOUs). In North America, the cruise industry advocated the use of MOUs as a self-regulatory measure to deal with pollution problems occurring at key state destinations including Alaska, Florida and Hawaii (Klein 2003b). However, as Klein (2003c) points out, MOUs rely on trust and often do not translate to changing behaviours and practices. Florida and Hawaii took a MOU pathway in 2002 and the Canadian government also advocated the use of MOUs between itself and the cruise industry (Klein 2003c). Alaska on the other hand chose a legislative path due to concerns with the need for monitoring behaviour and enforcement. In 2003, after illegal discharges from cruise liners, Hawaii also proposed a legislative framework to establish environmental standards for the cruise industry (Klein 2003b).

Alaska's pathway to provide a regulatory framework developed as a result of a number of incidents involving cruise ship violations. Prior to 1999, significant violations had occurred involving discharges of oily bilge water and dumping of rubbish. ICCL developed a set of guidelines known as Industry Standards (E-01-01) in attempts to raise the image of the industry, however these guidelines were ineffective in stopping cruise ships illegally discharging wastewater (Klein 2003b). Between 1999 and 2001 there were a further 39 violations. The Alaskan Cruise Ship Initiative was instigated by the State Department of Environmental Conservation and legislation introduced by the Alaskan government resulted in only one violation between 2002 and 2003 (Klein 2003b). Monitoring and regulation were deemed as key solutions to the ongoing problems associated with illegal discharges.

Both Florida and Hawaii have signed MOUs with ICCL, although communities expressed concern in both states that the voluntary agreement was not satisfactory. In Hawaii negotiations between ICCL and the state resulted in additions to the MOU to include monitoring and reporting requirements. California also adopted a regulatory route after a report by its state Environmental Protection Agency and the Water Resources Control Board highlighted the fact that ships were not complying with international, state or federal standards in regard to handling of hazardous materials, garbage, and wastewater discharges.

Klein (2003b) argues that MOUs are not effective in dealing with cruise industry pollution and believes that governments need to consider the importance of the environment and develop regulation to control the cruise industry. Voluntary compliance programs and MOUs do not require monitoring and have no legal force behind them (Klein 2003c). Klein (2003b) cites the example of a well known cruise liner that discharged 36,000 gallons (approx. 9504L) of wastewater, treated sewage, and oily bilge water in a marine sanctuary off the Californian coast, after submitting a written pledge that it would not discharge any waste in the area. While the issue of trust is a key element of MOUs, compliance aspects also create concern if there are no provisions for monitoring or observing behaviours or penalties for non-compliance (Klein 2003b; Schulkin 2002). International regulations such as the MARPOL and UNCLOS, do not effectively address cruise ship pollution and therefore local level legislation is require to protect coastlines (Klein 2006b). ICCL favours the voluntary

approach, such as the development of MOUs because of the convenience, its cost effectiveness for cruise ships and the fact that the approach avoids any arrest (Schulkin 2002). It has actively argued against proposed US legislation such as the Clean Cruise Ship Act of 2004 (Schulkin 2002).

In addition to using regulation as a management strategy for pollution control, it has been used to manage tourism activities such as wildlife viewing. For instance many nations use regulation to manage and guide whale watching activities through restricting the number of vessels in close proximity to the whales and specifying the minimum approach distances (Orams 2000). In Queensland, Australia, the minimum distance for vessels viewing whales is 300 metres and the minimum approach distance is 100 metres. The underlying assumption which forms the basis for these types of regulations is that close proximity of vessels to whales produces greatest disturbance risk (Orams 2000). However, Orams (2000) points out that whales are of greater risk from the noise created by the vessel and the manner in which it is operated than the geographical proximity of the vessel.

In the Falkland Islands, it is argued that one reason for the growth of expedition cruise ships and the increasing size of vessels is the fact that destinations within the region, such as Antarctica and South Georgia, have greater controls, restrictions and legislation (Ingham & Summer 2002). Another explanation for the increase in expedition tourism is the demand for more wilderness and uninhabited destinations (Ingham & Summer 2002), which is a pertinent point for the Kimberley Project to consider. Increasing tourism has raised concerns and management strategies were investigated to determine the most appropriate strategies to ensure sustainable development of the industry. A case study found that operators who were IAATO members adhered to established guidelines and displayed a high ethical and environmental focus, suggesting that a self-regulatory approach was adequate (Ingham & Summer 2002). However the problem lay in the fact that IAATO guidelines did not cover the larger vessels which were beginning to arrive in the Falklands. Under IAATO agreements, passenger numbers are limited to 400 passengers per trip and more than 100 passengers are not allowed on shore at any one time. Therefore the larger cruise ships do not abide by any specific guidelines. The study concluded that the existing self-regulatory environment was not sufficient to manage larger, luxury cruise ships and that a legislative framework would be required to ensure that compulsory guidelines cover all sites. Importantly the study also revealed a lack of national policies addressing tourism development (Ingham & Summer 2002).

A recent discussion of the benefits or otherwise of a regulatory framework as opposed to a self-regulatory framework to govern environmental impacts from the cruise industry is provided by Dobson and Gill (2006). The common command and control techniques most used by governments are based on prescriptions, standards and use of sanctions to ensure compliance. These have administrative and economic disadvantages for the cruise industry and for managers (Dobson & Gill 2006). Often regulations are difficult to measure and are costly to enforce, especially in more remote locations. Self-regulation on the other hand relies largely on market-based incentives which have a goal of reducing damaging processes involved with industry operations for the good of the public. The weakness of a self-regulatory environment lies in designating responsibility for monitoring and enforcing guidelines.

A case study of two cruise destinations using different approaches was conducted in the ports of Juneau (Alaska) and Sydney (Australia). Juneau uses a command and control technique in addition to a self-regulatory framework, while Sydney operates under a pure regulatory framework. The study revealed that using a purely command and control framework inhibited the development of innovative technologies (Dobson & Gill 2006). In Juneau, regulation controls grey water and sewage discharges. However, monitoring of cruise ships in Alaska by non-government and environmental groups revealed that grey water discharges showed levels of bacteria and faecal coliform counts found in sewage. Community and non-government organisation outrage over discharges in fragile areas resulted in greater pressure being placed on the cruise industry and governments to improve wastewater discharges by the industry. As a result of the pressure, and realisation that existing legislation did not adequately cover grey water discharges, the cruise ship industry developed and installed better MSDs. The new MSDs cost US$3 million to install and require rigorous testing. Ships carrying the devices must be certified and are monitored but are allowed discharge grey water anywhere in Alaska. The industry went beyond compliance behaviour due to the realisation that the non-government organisations would continue monitoring their behaviour.

Sydney relies solely on a command and control framework and has a no discharge policy in Sydney Harbour. No environmental groups monitor cruise ship activities and community concerns over cruise ship activities are not evident due to the belief that regulation adequately addresses pollution measures. As a result of the regulatory framework and no discharge policy, cruise corporations send their older ships with older technology which are potentially a greater threat. The approach has, in effect, stifled technological innovation within the cruise industry and discouraged the beyond compliance behaviour that was evident in Juneau (Dobson & Gill 2006).

Dobson and Gill (2006)believe that cruise ships have developed effective self-regulation for their activities where locations have institutions which advocate environmental awareness but do not deem effective self-regulation where locations do not have institutions pressuring for greater environmental accountability. The study concluded that a variety of policy instruments is beneficial to manage place specific characteristics in the environmental regulation of the cruise ship industry.

In the Kimberley, there are some attempts to develop self-regulation through accreditation leverage. However, according to some operators, current accreditation compliance checks and penalties appear to be insufficient to affect any significant change in behaviour and operational practice. Further, current accreditation programs are focussed mainly on safety and operational aspects and should be extended to include management practices in regard to environmental and cultural aspects. The strengthening of the accreditation requirements, a stringent (and fully funded) program of accreditation compliance checks and enforceable penalties, combined with the development of minimum standards and good practice guidelines for operations in the area with regards to environmental and cultural aspects is likely to considerably improve the effectiveness and benefits of accreditation to achieve effective self-regulation.

Negotiated agreements between operators and Traditional Owners

Co-management has been successfully achieved at the Great Barrier Reef Marine Park. An Indigenous Partnerships Liaison Unit (IPLU) was established by Great Barrier Reef Marine Park Authority (GBRMPA) in 1995 to more effectively identify the interests and needs of Indigenous peoples in relation to Native Title, governance, and the maintenance of the cultural and traditional values associated with the Great Barrier Reef (GBRMPA 2007). Incorporate incentives for tour operators who demonstrate a high standard of operation including supporting local and Indigenous communities through systems such as awarding longer term permits. In GPRMA, operators who have demonstrated a high standard of operation, which includes being certified with an external certification scheme checking an operator's commitment to best practice protection of the Marine Park and the quality of their education programs and client services are awarded with an extended permit from six to 15 years. The operator is also required to show that they are supporting local and Indigenous communities through such things as employing locally, providing accurate information about Indigenous heritage and culture, and consulting and involving Indigenous communities in the tourism operation (GBRMPA 2004).

Site specific conditions and restrictions have also been implemented for protected areas/sites such as Stanley Island or Flinders Group National Park. Conditions specify the maximum group size, the need to be accompanied by a Traditional Owner (cultural advisors) and to obtain written consent from the relevant Traditional Owners for access (I. Grant, pers. comm. 2007). Operators have to go directly through Traditional Owners to get approvals and though the areas are declared conservation reserves and come under legislation relating to the Queensland Parks and Wildlife Service (QPWS), it is not the role of the QPWS to be negotiators for the operators.

Some of the challenges encountered were the availability of suitable cultural advisors from the community, the fact that not all individuals are comfortable doing the work involved (e.g. speaking to large groups) and that the people who are well suited are not always available. While some cultural advisors have gained permanent employment with individual operators, this has made them unavailable for other trips. It is also difficult for Traditional Owners to guarantee availability given the short period of potential employment as cultural advisors (I. Grant, pers. comm. 2007). From an operator's perspective, cost may also be an issue. For example, one operator had to fly in a cultural advisor for a one off visit to the Torres Straights (I. Grant, pers. comm. 2007). It is also very important that the same conditions are applied to all operators (including operators visiting seasonally from other areas). At current, recreational vessels and small tourist vessels have free access without approval.

While these arrangements are fairly new and the system is still in its early days and not foolproof, the general response has been positive and some operators have indicated that they are gaining additional benefits for their clients from the arrangements, particularly with improved interpretation and cultural links (I. Grant, pers. comm. 2007).

Other avenues for arrangements with Traditional Owner groups would be through Indigenous land use agreements (ILUAs) such as those described by the Department of Indigenous Affairs. However, as a recent report examining agreements between mining companies and indigenous communities pointed out (Australian Broadcasting Corporation 2007), there are still considerable hurdles to overcome to ensure that agreements are adequate and do indeed benefit the indigenous communities involved.

Management Issues Raised by Kimberley Custodians and Stakeholders

Traditional Owners

The key issue raised repeatedly by the Traditional Owners from the four native title claimant groups during this project, as well as apparent from previous reports and documents, is the issue of acknowledgement of ownership and lack of respect for the Traditional Owners. Traditional Owners are the custodians of the country on which most of the expedition cruise activities occur and as such have cultural and spiritual responsibilities and rights to these areas and the activities within. These rights are reflected in the areas' declaration as Aboriginal reserves. The Traditional Owners of the Kimberley coast during this project repeatedly expressed the need for respect by other parties through the acknowledgment of ownership, consultation and the seeking of permission for any activities involving Aboriginal lands. Although there have been some negotiations with Traditional Owners by individual parties, many of the activities (including the establishment of dwellings by squatters) on coastal Aboriginal lands in the Kimberley appear to be occurring without appropriate agreements, consultation or permissions. A further concern expressed by Traditional Owners was about the lack of information on the areas accessed and the type of activities occurring within them. More specifically, concerns were raised about the environmental, cultural and spiritual impacts to sites accessed without Traditional Owner consultation and approvals. The notion of balancing country, where Traditional Owners visit their country to maintain sites of significance and to rectify the spiritual imbalance imposed on country through access by non-indigenous visitors, was an important factor behind the expressed desire of Traditional Owners to return to country. The Traditional Owner groups that this project engaged with are not opposed to tourism per se. Indeed, tourism is seen as a potential way to facilitate return visits to country through generating some income and arrangements of mutual benefit. Today, nevertheless, appropriate mechanisms to ensure such benefits are not yet in place.

Expedition cruise operators

Many of the issues raised by expedition cruise operators revolved around observed or impending changes to the industry which they perceived as negatively affecting their operations. There were expressions of a perceived increase in government bureaucracy and rules without apparent benefits as well as a perceived lack of effectiveness of existing measures (e.g. current accreditation system 'does not have teeth'). The issue of establishment of enforceable standards to ensure good practice and equal application of rules was raised repeatedly, as were suggestions for a cap on the number of expedition cruise operations. There are indications that the tourism product is beginning to change from a unique and exclusive journey, where a vessel had little contact with other vessels and the outside world, to a more mass produced though still luxurious product, as more and larger vessels offer trips and itinerary overlaps result in encounters by different visitor groups at sites.

As Traditional Owner groups are getting increasingly organised and concerned about activities at sites under their traditional custodianship, there have been a number of interactions and discussions regarding access to country between operators and some of the Traditional Owners. Currently, no tour operators hold a permit for access to any ALT reserve in the Kimberley. Thus, operators and visitors accessing ALT land during expedition cruises are doing so without permission and in legal terms are trespassing on those lands. According to a KLC representative, the KLC is enforcing a moratorium or block on the issuing of ALT access permits to operators until a user pays system has been put in place (T. Vigilante, pers. comm. 2007). This stalemate situation has resulted in a situation where even operators who engage with the relevant Traditional Owners of the area are reluctant to provide detailed information on their operations to Traditional Owners for fear of being at a disadvantage. For example, an operator engaging with the Traditional Owners may be requested not to access certain areas, while other operators who did not engage would be likely to still frequent the areas.

Thus one of the key issues highlighted by operators during this project was the need for agreed ways to meaningfully engage with the Traditional Owners, without being caught up in differences between the Traditional Owner groups involved.

Government agencies

The current focus of action by State-based government agencies was largely on compliance relating to visitor safety and environmental health as per the relevant acts they are administering and have resulted in current efforts to develop operational standards and guidelines for marine vessel operations and fuel storage. Other important issues relating to the management of the expedition cruise industry raised by government agencies were that of resource use conflict arising from multiple uses of the area, including

pearling, aquaculture and the minerals and oil industry.

Findings from this project indicate that the establishment of appropriate governance mechanisms is essential to the long-term sustainability of industry activities along the Kimberley coast. At current, much of the activities occur in State waters, where there are very limited controls in respect to cultural and environmental activities, while much of the land area is Aboriginal Reserve land. The key concerns raised by agencies during this project were the limited powers and uncertainties of responsibilities of the individual agencies, the limited resources to deal with an area so vast and remote and the difficulties encountered when attempting to exchange relevant information. Thus the development of appropriate statutory and non-statutory mechanisms and a central body that is sufficiently equipped to effectively oversee and drive the regional planning and development process, including the development of a coastal planning strategy, would be a way towards improving governance and avoiding conflicting developments by industries utilising overlapping areas.

A Way Forward

This chapter has highlighted a range of management tools, strategies and planning frameworks that are in use elsewhere. While several of them contain valuable components that could be applied to sustainable tourism planning on the Kimberley coast, none of them adequately consider the cultural and spiritual aspects related to the Indigenous custodianship of the area. Further, there is currently no overarching body or structure in place to oversee the implementation of a tourism planning framework. The below diagram (
Figure 46) suggests a potential pathway for future tourism planning. The key steps towards sustainable development along the Kimberley coast, revolve around a structure agreed upon by all parties for engagement between the Traditional Owners, industry stakeholders, the community and government. The role of the Traditional Owners in this process cannot be overemphasised in order to ensure that their custodianship is appropriately acknowledged and respected. Furthermore, the other stakeholders including industry, community and government need to have a high level of participation in this process to ensure that appropriate implementation, monitoring and funding of agreed measures eventuates. Once a framework for engagement and decision making has been agreed upon, a detailed tourism plan for the region, supported by good practice guidelines, operational standards and control measures should be developed.

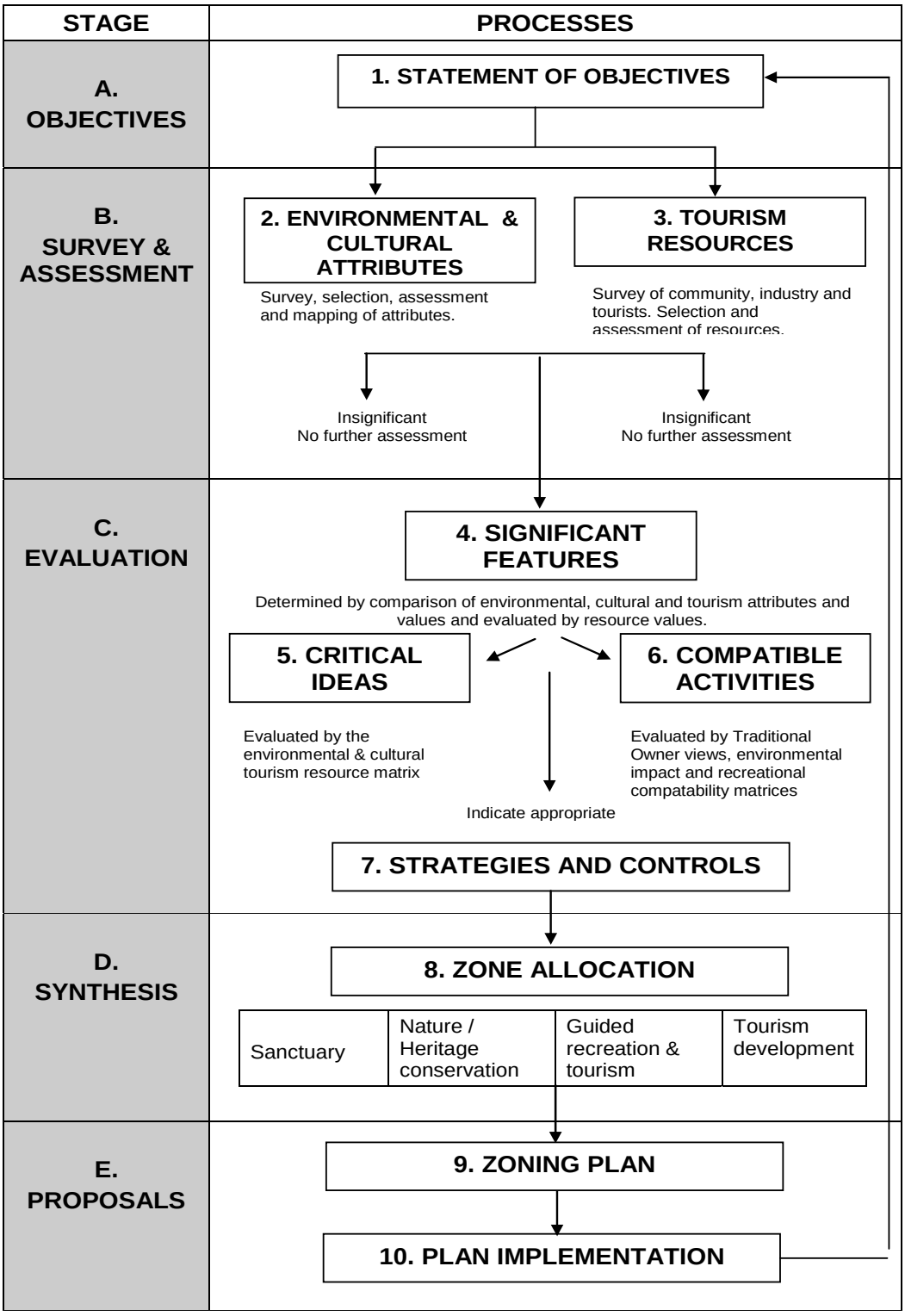

Figure 46: An environmentally and culturally based tourism planning model (adapted from (Dowling 1993)).

Chapter 7

CONCLUSIONS

The Kimberley coast is an area of unique and outstanding natural and cultural features and is rapidly gaining increasing recognition and popularity as a tourism destination. Tourism is one of several industries utilising the natural resources of the area. Other industries include the minerals and petroleum industry and the pearling, fishing and aquaculture industries. The expedition cruise industry currently forms the largest component of the area's coastal tourism activities. While this report focussed on tourism and in particular the expedition cruise industry, it is important to highlight that the industry should not be seen as an isolated entity and its management should be approached in the context of overall industry activities and development in the area. Because of the expedition cruise industry's strong focus on the area's natural, cultural and scenic amenities and its mobile nature, traversing the coast between Broome and Wyndham, coastal development, such as for example coastal gas and oil industry developments, may potentially have a very strong negative effect on the tourism product and experience. It further has the potential to increase independent free tourism activities such as by recreational activities from industry workers and by providing improved accessibility to the area. Nevertheless, even in the absence of growth and development by other industries, the growth in tourism activities in itself has the potential to negatively affect the tourism product and image as an increase in operations and the number of visitors may lead to issues of crowding and site deterioration and thus may have a detrimental effect on the product which is based on themes including 'untouched', 'pristine' and 'remote'. Visitors to remote coastal sites can largely be attributed to two broad groups of tourism:

- commercial tourism operations—made up largely of visitors on expedition cruise vessels and visitors to specific sites arriving by fly-in fly-out operations; and
- free independent travellers—made up largely of people visiting on private yachts touring the region, and recreational visitors from nearby mining, pearling or other operations.

The focus of this report is on expedition cruising which provides relatively easy access to this remote and relatively inaccessible area. There is currently no holistic approach to the management of tourism and/or the expedition cruise industry along the Kimberley coast. Factors such as the remoteness and size of the area, the cost and time to access the area, limited authority (geographically and/or in terms of responsibility) by land and water management agencies which have a presence in the area and lack of resources and coordination between government agencies have contributed to the 'ad hoc' development of the industry. However, the rapid growth of the industry as well as growing interests in the area by the minerals and petroleum industry and recreational users has resulted in increasing concerns by various stakeholders involved.

The following section provides a summary of the key issues identified in this report and suggested strategies to address them. There are a number of constraints that must be considered in relation to tourism and other development along the Kimberley coast. These include:

- the need to protect the rich Indigenous heritage and respect the Aboriginal custodianship, which may limit tourism activities in some areas
- the need to protect high conservation areas, which may limit tourism in some areas
- the need to prevent the introduction and spread of exotic flora and fauna
- the fragility of some of the ecosystems, particularly reefs, islands and important habitats
- the lack of supporting infrastructure
- the remote nature and vast size of the area
- the strong seasonal and tidal variations
- minimal governance
  and
- mineral and petroleum interests in the area.

Sustainable development needs to come from communication, negotiation and agreement between the Indigenous custodians and stakeholders of the area and requires a driving force that can lead and implement this process and any future planning strategy. The remoteness and vastness of the area and limited resources by the agencies responsible make policing and enforcement of implemented measures

difficult. Thus it is unlikely that a purely regulatory approach to managing activities in the area could be successful. Currently, expedition cruise operators are required to meet minimum safety standards under the Marine Act and its subsequent regulations, as administered by the Commercial Vessel Safety Branch of the Department for Planning and Infrastructure. Management of other aspects of the industry, such as environmental or cultural impacts, is fragmented, with individual government agencies managing different aspects of the industry under a range of legislative controls. There is scope for better alignment of management arrangements and legislative controls to improve cooperation in particular between government agencies.

Further, to ensure long-term sustainability of the activities, all operations should require consideration of their potential effects on natural and cultural heritage values and specifications on mechanisms proposed to minimise and manage potential effects. Findings from this study highlight the need for the development of operational standards and good practice guidelines for the expedition cruise industry as well as cultural and environmental management plans for sites accessed to ensure resource protection, client satisfaction and to support further promotion of a high quality tourism service industry. The tourism product of the Kimberley coast is strongly based on the enjoyment of pristine uncrowded environments. Unrestricted access to some areas and lack of appropriate operational standards in relation to environmental, cultural and visitor management aspects may adversely affect the quality of the tourism experience and may contribute to deterioration of the sites accessed. While results from this study indicate that at current, environmental impacts from expedition cruise activities at onshore sites appear to be small, there is considerable potential for impacts in particular with regards to reefs and isolated island environments and aspects such as the spread of exotic species. Further, there appears to be considerable ignorance and lack of understanding of impacts that visitor activities can have on cultural and spiritually significant sites by some operators as well as independent travellers. The key concern expressed by Traditional Owners during this project was the lack of consultation, respect and acknowledgement of custodianship. At the same time some operators raised concerns regarding ways of meaningfully engaging with the Traditional Owners.

At current, practices regarding onsite visitor management, activities conducted, environmental and cultural education and interpretation, visitor safety practices, and engagement with Traditional Owner groups vary considerably between operators, with some practices leaving considerable room for improvement, while others demonstrate good practice. Industry standards, once developed, should be monitored and enforced equitably. Measures to encourage good practice should be considered in licensing and permit arrangements.

There is also an urgent need for clarification and enforcement of site access arrangements, particularly with regards to sites of cultural significance. At the time of this research, no expedition cruise operator had been granted a permit for access to any ALT reserves in the Kimberley. Thus, operators are trespassing on many sites and are not respecting the wishes of the Traditional Owners (e.g. access only with Traditional Owner guide; Traditional Owner permission). The development of a zoning plan in consultation with the Traditional Owners and with regards to cultural and environmental values could assist the process negotiating access. Information such as collated by the Saltwater Country Project and this report could provide the building blocks for such a zoning system and the identification and documentation of cultural values, with environmental studies, such as the DEC biological survey of island environments which is currently in progress, informing the environmental aspects of a potential zoning system.

At present, information collected on current activities by the expedition cruise industry is not readily accessible and there is no monitoring of sites or activities for changes and potential impacts that may be attributed to visitor activities. Information on current and potential future activities is important to tourism planning along the Kimberley coast. Activities to be considered need to include commercial tourism activities and private visitors as well as those resulting from other industries operating in the area. Sustainable tourism planning should include a strong monitoring component to inform management decisions.

Probably the most important aspect of successful tourism planning and the development of a sustainable tourism plan is a means for consultation, cooperation and communication between the Traditional Owners and the main stakeholders such as expedition cruise operators and government agencies, as well as within individual stakeholder groups such as joint funding and data sharing arrangements between different government agencies in matters relating to the Kimberley coast. A potential scenario could involve a process championed by government, who would seek advice from a Kimberley coast management advisory committee. The committee with representatives of the Traditional Owners, the community, State and local government agencies and industry stakeholders would ensure a consultative process and ongoing involvement in the planning for and management of the Kimberley coast as well as on issues such as how to promote public understanding, knowledge and

appreciation of the natural and cultural resources of the Kimberley coast and ensure the conservation of the natural and cultural values of the area.

The following elements should be considered to underpin sustainable development for the Kimberley coast:

- appointment of a body to oversee and drive the regional planning and development process and ensuring adequate representation of and consultation with the indigenous custodians and other stakeholders
- development of a coastal planning strategy to prevent or minimise development that would negatively affect the pristine character of the coastline and has the potential to be detrimental to existing industries;
- agreement between government agencies to share information, streamline processes, legislative needs and changes, enforcement measures and funding as they relate to the management of the Kimberley coast area
- development of a tourism management plan to ensure environmentally and socially sustainable tourism which is consistent with the natural and cultural values of the Kimberley coast and which provides appropriate managed access to the area for members of the local community
- development and implementation of standards and good practice guidelines regarding tourism activities along the Kimberley coast, coupled with enforceable control measures and rewards for good practice
- reviewing and strengthening data collection on independent and commercial tourism activities and implementing a strategy for regular dissemination of findings
- development of zoning system based on cultural and environmental values and sensitivities
- collection of baseline data and implementation of monitoring programs to assess and evaluate current and potential impacts and changes
- minimal development of facilities in accordance with the image of pristine nature and remoteness of the area and with respect to Traditional Owner views
- exploration of a user pays system to help recover the cost of managing the area.

A potential tourism management plan should consider elements including:

- conservation—such as of cultural heritage values and ecosystems
- management—such as identification and implementation of appropriate management processes to facilitate planning, control, dispute resolution, consultation, information flow and resource funding and allocation, which takes into account legislation and statutory arrangements
- research and monitoring—to gain and disseminate the knowledge required to understand and manage the area
- community awareness and involvement—to raise awareness, appreciation and understanding of the unique values of the Kimberley coast and involve the community in the processes required to plan for and manage the area
- use and development—to enable multiple, equitable and sustainable use and development of the historical, social and economic attributes of the Kimberley coast
- implementation and resources— to provide a program for resourcing and implementation.

In conclusion, the Kimberley Region of Western Australia is a vast region of significant cultural and environmental values, with the potential to support a sustainably managed coastal tourism industry which potentially has a much lower ecological footprint than for example extractive industries. With the development of a suitable framework built by stakeholder consultation, the government should be able to manage the region's tourism development in a manner consistent with the values of the Kimberley Region and which provide benefits for the Traditional Owners, local community, conservation agencies, and industry operators. The following list summarises some of the key issues identified during this project and suggests specific strategies to address them and move towards a more sustainable and well managed expedition cruise industry along the Kimberley coast.

1. Governance issues

While issues of governance are beyond the scope of this project, project findings indicate that the establishment of appropriate governance mechanisms is essential to the long-term sustainability of industry activities along the Kimberley coast. At current, much of the activities occur in State waters where there are very limited controls in respect to cultural and environmental activities, while much of the land area is Aboriginal Reserve land. State government agencies, which have some management presence in the area, have limited control/authority and limited resources. The resulting piecemeal approach by agencies acting within their limited roles independent of a coordinated 'big-picture' approach, could potentially lead to the 'carving up' of the area and the loss of the pristine and remote 'wilderness' characteristics that makes the area a unique attraction.

Thus, findings from this report highlight the need to:

1.1 Develop appropriate statutory and non-statutory mechanisms for culturally and environmentally sustainable management;

1.2 Assign and equip a central body to oversee and drive the regional planning and development process, including the development of a coastal planning strategy, ensuring adequate representation of and consultation with the Indigenous custodians and stakeholders.

Some potential approaches that could provide a framework for sustainably managing activities along the Kimberley coast may include:

- Declaration of Indigenous Protected Areas (IPA) over ALT and UCL solely managed by Traditional Owners above the high water mark;
- A state agreement following informed consent by native title holders or claimants whose interests or potential interests may be affected;
- Establishment of a Sustainable Development Office (along the model of the Ningaloo Sustainable Development Office);
- Establishment of a marine protected area (declaration of a management area along the lines of the GBRMP) following informed consent by native title holders or claimants whose interests or potential interest may be affected;
- Self regulation (along the example of the Antarctic model by IAATO);
- Establishment of a government agency to co-manage the Kimberley area with the Traditional Owners.

All regulatory instruments should be approved by affected native title holders or claimants before being implemented in order to avoid extinguishment or infringement.

2. Management issues

Management issues revolved around the establishment, implementation and enforcement of standards and good practice, the need for data collection to inform decision makers, engagement with Traditional Owners and site management.

Minimum standards and good practice

2.1 Develop and implement minimum safety standards appropriate to activities in the Kimberley.

2.2 Develop good practice standards and visitor management guidelines for tourism operations addressing environmental, cultural and safety aspects of operations and at sites.

2.3 Develop guidelines for boat access to sites and communication and cooperation between operators to preserve the remote area 'feel', minimise crowding and minimise operator conflict. Guidelines developed should observe, respect and comply with native title interests over the relevant area.

Compliance

2.4 Strengthen accreditation system and establish control measures such as through linking licenses or permits to a demonstrated minimum standard.

2.5 Permits to be based on good practice.

2.6 Incorporate incentives for operators who demonstrate a high standard of operation including supporting local and Indigenous communities through systems such as awarding longer term permits.

2.7 Develop mechanisms and commit funding to enforce control measures in a fair and

representative way.

2.8 Ensure that all operations adhere to set minimum standards, no matter their origin or home port.

2.9 Regulatory measures, industry guidelines and all agreements (between industry, stakeholders, government, native title claimants and/or Traditional Owners) should include recognition of and seek to raise awareness of the fact that where native title has been claimed, those who act inconsistently with native title interests may be liable to pay compensation to native title claimants.

Knowledge of activities

2.10 Commercial and visitor activities along the Kimberley coast should be documented and data should be made accessible to identify existing and potential problem areas and highlight concentration of use.

2.11 Coordinate the collection and analysis of tourism data for commercial vessels and activities.

2.12 Collect and analyse data on the number of private vessels.

2.13 Collect and analyse data from operators on sites visited and visitor numbers at individual sites.

Meaningful engagement with Traditional Owners

2.14 Development/strengthening of a platform for engagement of all stakeholders with the Traditional Owner groups. The Saltwater Country Steering Committee is currently providing a platform and avenue for a coordinated approach to such consultation and a government commitment to ensure long-term support for such a platform should be made.

2.15 Develop interim agreement until appropriate management structure has been put in place between Traditional Owners and expedition cruise operators regarding access to Aboriginal lands, with an agreed timeline for the development of access management structures.

2.16 Formal arrangement such as a memorandum of understanding and/or code of conduct between Traditional Owners and charter operators, mining companies and pearling companies.

2.17 Joint management: Aboriginal management of Aboriginal country in partnership with government agencies.

2.18 Engagement of the Traditional Owners on activities affecting and relating to Aboriginal lands.

2.19 Funding and implementation of cultural training for government departments.

2.20 Possible arrangement with operators to provide in-kind trips to Traditional Owner groups for opportunities to access country. This could be negotiated as part of permit conditions and, spread over the industry, cost to individual operators would be low.

Improve agency cooperation / sharing of resources

2.21 Government agencies to commit to interagency cooperation and funding of control measures.

Site management

2.22 Develop a zoning plan in negotiation with Traditional Owners according to appropriate activities and access.

2.23 Identify areas off-bounds to public access and close tracks to restricted areas upon advice of Traditional Owners.

2.24 Develop and implement management plans for sites for which access has been agreed to and which are regularly visited (e.g. Raft Point, King George River, Montgomery Reef).

Management tools

2.25 Implement a framework outlining processes and strategies for Traditional Owner and stakeholder engagement, regulatory measures such as licensing and zoning, control measures, user fees, funding and monitoring.

2.26 Self-regulation supported by enforcement and follow up of reported breaches of standards, accreditation with a high baseline of environmental and operational standards, regular compliance checks and mechanisms to penalize non-compliance.

2.27 Regulation of visitor access in the form of a permit or user pays system. Enforcement of control measures.

2.28 Establish a platform for tourism planning with representatives from all relevant stakeholder groups and clear communication guidelines.

3. Conservation and sustainability issues

Resource allocation

3.1 Support and integration of natural resource management (NRM) and other projects into management of area.
3.2 Commitment to funding of monitoring programs and enforcement of control measures.
3.3 Commitment to funding of a communication and planning platform linking stakeholders.
3.4 Consider access fees and cost recovery measures.

Growth of industry

3.5 Implementation of a moratorium on the number of approved operations until appropriate planning and management structures are in place to assess and review potential impacts of further growth.

Integration with management of other sectors and independent visitation

3.6 Consideration of tourism activities in planning and development approval decisions relating to activities from other industries, including gas and oil, mining and pearling, particularly in terms of risks, costs, benefits and opportunities.
3.7 Review and consideration of impacts by other industries on the tourism industry.
3.8 Develop strategy to ensure employees from industry in the region i.e. pearl farms, mine sites, gas/oil platforms, aquaculture are also following appropriate cultural protocols and also apply for access to areas where they recreate.
3.9 Improve integration of tourism activities with those of other sectors.
3.10 Negotiations between Traditional Owners and squatters and/or implementation of control measures.

4. Environmental issues

4.1 Develop guidelines and implement a strategy to address the introduction of exotic species, particularly with regards to lands occupied by squatters.
4.2 Develop, implement and monitor the effectiveness of environmental guidelines and standards (as per 2.2).
4.3 Implement guidelines on fuel handling and storage.
4.4 Management of tracks and trails to ensure they are sustainable and not a network of braided trails. Where such tracks and trails affect declared or claimed native title interests, approval of management systems should be obtained from native title holders or claimants.
4.5 Minimising impact through leave-no-trace principles, including mechanisms to prevent littering.
4.6 Collect baseline data and commence monitoring at priority sites of biophysical environmental factors potentially affected by visitor activities.

5. Cultural issues

5.1 Develop guidelines and training, where culturally appropriate, for operators and visitors in regard to respecting country and understanding Aboriginal culture and lands. This should include appropriate interpretation of sites that would inform and educate about physical and spiritual dangers and appropriate protocols when visiting a site. This would include aspects of leaving areas in a natural state, ensuring safety of visitors, suitable location of trails and restriction to appropriate zones and sites e.g. avoidance of burial sites.
5.2 Collect baseline data and establish, in close collaboration with Traditional Owners, a monitoring program of cultural sites accessed by visitors.
5.3 Develop, implement and monitor the effectiveness of cultural guidelines and standards (as per 2.2).
5.4 Aboriginal heritage to be represented appropriately in marketing of the region, with consideration given to the Indigenous aspects of the Kimberley coast in addition to the natural and scenic aspects. The frequently used term ‘wilderness’ by definition implies an absence of prior human presence and thus misrepresents the Kimberley region’s Aboriginal history.
5.5 Agreements with Traditional Owners on the use of images of Aboriginal rock art and

Indigenous heritage sites, respecting intellectual property rights.

5.6 Acknowledgement and awareness that Traditional Owner groups responsible for different areas may have different levels of interest and capacity to engage in tourism related activities.

6. Social issues

Industry image

6.1 Preserve the feel of entering a pristine and remote environment on a unique 'once-in-a-lifetime' journey by limiting the number of operators/visitors at sites and facilitating coordination between operators on itineraries.

6.2 Focus on quality not quantity through offering a low impact and high quality ecotourism product which is based on uncompromised environmentally and culturally sound principles and understanding of local issues.

APPENDIX A: Legislative Review

Department of Environment and Conservation

The Department of Conservation and Land Management (CALM) and the Department of Environment (DoE) merged on 1 July 2006 to form the Department of Environment and Conservation (DEC). CALM brings a number of responsibilities to this new Department. Under the *Conservation and Land Management Act* 1984 (WA) (CALM Act) CALM is responsible for managing land, which includes terrestrial and marine areas, vested in the Conservation Commission and the Marine Parks Authority. CALM is also charged with conserving and preserving fauna and flora and maintaining biodiversity, as derived from the CALM Act and the *Wildlife Conservation Act* 1950 (WA) (WC Act).

In fulfilling these roles, DEC has implemented a number of systems. One of these systems is commercial tour operator licensing. The licences are used to manage and monitor commercial tour operators when operators enter DEC managed land and water. The Executive Director, with Ministerial approval, derives power to approve commercial tour operator licences from Sections 97A and 101 of the CALM Act and Part 7 of the *Conservation and Land Management Regulations* 2002 (WA).

Commercial tour operators are required to obtain a commercial operator's licence prior to operating on land or in water managed by DEC[22]. There are two types of operator licences: T Class licences and E Class licences.

The T Class licence is for general use. The majority of tour operators apply for this licence to operate in DEC managed areas. The licences are unrestricted, meaning that an unlimited number of T Class licences are available. The T Class licence must be renewed annually, unless specific levels of accreditation have been obtained extending the licence to either three or five years.

Licence applications are lodged with the Department. If the application is for an approved activity, the Executive Director can grant the licence; if for an unapproved activity the application must go to the Conservation Commission or the Marine Parks Authority for approval.

The second type of licence is an E Class licence. The E Class licence is restricted based on environmental, management and/or safety criteria. This means that a limited number of licences are available for application.

The E Class licence is granted through an Expression of Interest (EOI) process. If successful, the applicant is granted a licence for five years. At the end of the five years, the licence can be renewed for an additional five year period. After the ten-year period, the licence is put out for application through an EOI process.

The E Class licence is not transferable, similar to the T Class licence in that the licence can not be sold with the business. However, with E Class licences, buyers can apply for a replacement E Class licence, which replace the original E Class licence. If granted, the new E Class licence is dated to expire on the date of the original licence.

The DEC is also responsible for implementation of the *Environmental Protection Act* 1986 (EP Act) and the *Environmental Protection (Unauthorised Discharges) Regulations* 2004 (EPUD Regulations). Part V, Division 1 of EP Act identifies the circumstances under which pollution and environmental harm offences occur. An offence may occur when tour boats discharge waste into the ocean. The EPUD Regulations further explores the implications of discharging waste. The Regulations indicate it is an offence to discharge into the environment a material listed in Schedule 1 during business or commercial activity. Schedule 1 includes detergent, food waste, laundry waste, organic solvent and sewage, among other things.

Department of Fisheries

The Department of Fisheries (DoF) are defined in the *Fish Resources Management Act* 1994 (WA) (FRM Act). DoF is responsible for the conservation, development and sharing of fish and fish habitats in WA waters. This includes conserving and protecting fish while seeking optimum economic and social benefits in managing: fishing, aquaculture and associated industries, and aquatic eco-tourism and other tourism reliant on fishing. Here 'fish' does not include: 'aquatic mammals, aquatic reptiles, aquatic birds, amphibians or … pearl oysters' (s4 FRM Act), many of these fall to the DEC for management.

[22] Sections 97A and 101 of the CALM Act and Part 7 of the *Conservation and Land Management Regulations* 2002 provide for a tourism licensing regime.

DoF manages tour operators through a licensing and management framework, as outlined in the *Fish Resources Management Regulations* 1995. The framework does not apply to tour operations that occur wholly with DEC marine reserves, all other tour operations that may impact on the aquatic environment are required to be licensed by the DoF. There are three types of licences:

- fishing tour operator licence
- restricted fishing tour operator licence
- aquatic eco-tour operator licence.

The fishing tour operator licence enables the tour operator's clients to fishing during the tour and to take home their catch. The number of available licences was capped on 12 September 1997. No additional licences will be available, except under extraordinary circumstances.

The restricted fishing tour operator licence provides clients the opportunity to catch fish during a tour. However, the fish must be consumed while still on tour. The licence is focused on eco-type activities, such as snorkelling or scuba diving.

The aquatic eco-tour operator licence enables clients to observe or feed fish in their natural habitat. The licence does not allow the 'taking' of fish while on tour.

Clients taking part in fishing tour or restricted fishing tour operations are considered recreational fishers. As such, clients are subject to the same rules as recreational fishers (e.g., bag and size limits). Operators are required to record the number of fish caught during each tour. This information is recorded in tour log books, which are submitted monthly to the DoF's Research Division.

To help in accessing applications for restricted fishing tour operator and eco-tour operator licences Ministerial Policy Guidelines (Fisheries WA 2000) have been developed. The Guidelines identify the criteria that must be met prior to approval of a licence. These criteria require operators to submit a business plan, identify operator resources and operation history, and identify the operator's compatibility with DoF management objectives and environmental standards. Under the FRM Regulations, the Executive Director has the power to grant licences. Licences are renewed annually, if an operator has not contravened the FRM Act or the FRM Regulations.

All licences are transferable. In order to cover the costs of transferring a licence, the new operator must pay DoF an administration fee.

The DoF's licensing powers take effect within Western Australian waters. In addition the DoF undertakes compliance activities in the Australian Fishing Zone (AFZ) waters adjacent to Western Australia on behalf of the Commonwealth. This power is found in the *Fisheries Management Act* 1991 (Cth). The AFZ extends 200 nautical miles from Western Australia's coastal baselines[23].

Department for Planning and Infrastructure

The Department for Planning and Infrastructure has a role in licensing transportation involved in the tourism industry, in particular tour buses. Under Part III Division 2 *Transport Co-ordination Act* 1966 (WA) (Transport Act) the DPI has the responsibility to license omnibuses. Omnibus, as defined by s4 is 'a motor vehicle used or intended to be used as a passenger vehicle to carry passengers for hire or reward … but does not include a vehicle operating as a taxi'.

The omnibus licences are approved by the Minister. Under the Transport Act the Minister has the power to attach conditions to such licences, including route, timetable and fares. The licences can be granted for up to a seven- year period, as defined in s30. The licences are not transferable unless a transfer is approved by the Minister.

Under the Road Traffic (Inspection of Vehicles) Notice 1997, which amends the Road Traffic Act 1974 (WA), omnibus operators are required to have their vehicles examined. The examinations are to occur on an annual basis at an Examination Centre or Approved Inspection Station. Although part of the DPI's legislative responsibility this does not appear to have much application to the Kimberley region.

The DPI also plays a role in licensing marine transportation. Under Part III Division 4A of the

[23] WA jurisdiction includes the area from the low water mark out to three nautical miles. The area from the low water mark out 200 nautical miles is the exclusive economic zone. The Commonwealth has jurisdiction from the three nautical mile mark out to 200 nautical miles. However, the State and the Commonwealth share responsibility with the Commonwealth waters. In some cases there are clear guidelines (and jurisdiction) over specific fisheries. For example, the State is responsible for managing all boney fish and shark and the Commonwealth is responsible for managing the Northern Prawn fishery.

Transport Act the DPI has the responsibility for licensing ferries. Ferries are defined by s3 of the Transport Act as vessels that carry passengers for 'hire or reward', including vessels 'used by or on behalf of the Crown'. Vessels exempt from the definition of 'ferry' include: vessels with a carrying capacity of 30 passengers or less, vessels organizing charter trips, and vessels organizing fishing/underwater diving expeditions, and vessels used in emergency operations.

The ferry licenses are granted by the Minister. When granting a license the Minister may attach conditions to the license, as outlined in s47AF(1) of the Transport Act. Such conditions may include the route, timetable or fares of a ferry or require specific records to be kept.

Ferry licenses are granted for a duration of one year, as outlined in s47AA(2) of the Transport Act. All ferry licenses expire 30 September each year.

In addition to licensing ferries, the DPI has a role in ensuring commercial vessel safety. The Commercial Vessel Safety Branch conducts vessel safety survey during construction and throughout the life of the vessel. The surveys review vessels according to pre-set standards including safety equipment (including fire safety), construction and stability. The DEC requires the completion of a survey prior to granting of a license, for those tour operations that require a marine vessel.

Much of the responsibility placed upon the Commercial Vessel Safety Branch is outlined in the Western Australia Marine Act 1982 (WA) (WA Marine Act), and its subsequent regulations. The majority of regulations are constructed based on the WA Marine Act and Uniform Shipping Laws (USL) Code. The USL Code has been taken up by the Australian Transport Council. The purpose of the Code is to provide legislative uniformity among the Commonwealth, States and the Northern Territory with regards to commercial vessel operation, which includes vessel surveys.

Aboriginal Lands Trust

The Aboriginal Lands Trust (ALT) was created under section 20 of the *Aboriginal Affairs Planning Authority Act* 1971 (WA) (AAPA Act). The functions of the ALT are outlined in s23. These functions include:

- to acquire and manage land for the benefit of Aboriginal people and their descendants
- to ensure that management of the land is in accordance with the wishes of the Aboriginal inhabitants of the area, to consult
- contract or undertake projects as necessary or desirable for the development of the land and
- to take or support action to ensure the most beneficial use of the land.

Functions delegated to the ALT are utilised in managing Aboriginal reserves[24] on behalf of Aboriginal people. ALT is provided the authority to manage such reserves via Management Orders[25]. In many instances, these reserves are leased by ALT to Aboriginal community corporations. When a reserve is leased to an Aboriginal corporation, the corporation takes on the responsibilities had by the ALT, in terms of managing and caring for the land. The lessees are required to meet the statutory and management costs related to the lease. The ALT is currently in the process of transferring the lands to the Aboriginal communities. The land will be transferred to legal Aboriginal organisations and in some instances to individuals. The land will continue to be protected for benefit of Indigenous people. The ALT is working with Native Title Representative Bodies in the transfer process. The ALT will endeavour to facilitate support from Government and non-Government organisations for the land transferee.

Some of the Aboriginal reserves are afforded additional protection under the AAPA Act. If proclaimed under the Act, permits are required for entry to the reserves, as outlined in Part III. These permits are issued by the Minister for Indigenous Affairs in consultation with the ALT. There are two types of permits: transit permits and mining access permits. The transit permits are issued under the following circumstances (Department of Indigenous Affairs 2006):

- visitors wishing to visit the reserves for tourism or recreation purposes

[24] Aboriginal reserves are land vested in the Crown for the use and benefit of Aboriginal people, as identified under Part IV of the *Land Administration Act* 1997 (WA). The reserves managed by the ATL are also proclaimed under s25(1)(a) of the AAPA Act. Once proclaimed under the AAPA Act, the protection afforded to the reserves can only be changed by approval of both Houses of Parliament.

[25] Management Orders are issued by the Minister for Land Information. These powers are outlined under s46(1) and 59(1) of the Land Administration Act 1997 (WA). The orders identify the body responsible for the care, control and management of a reserve.

- visitors wanting to travel through the reserves for tourism, recreation or business purposes (except for mining purposes)
- visitors wanting to visit art centres or cultural centres, and
- visitors conducting business with communities, e.g. consultation.

If a visitor is of Aboriginal descent, a member of either House of Parliament (State or Commonwealth), exercising a function of the AAPA Act or authorised under the AAPA Act regulations, the visitor is not required to obtain a transit permit before entering a reserve.

The mining access permit is required for the following (Department of Indigenous Affairs 2006):

- any mining activating, e.g. surveying or fossicking
- travelling through reserves in order to access mining tenements that lay outside of the reserve.

The permitting system has been put in place to protect the privacy of Aboriginal communities, preserve Aboriginal culture, protect the natural environment and encourage visitor safety.

There is no charge for obtaining a permit. However, some Aboriginal communities require the payment of fees for activities, entry and camping on a reserve. For example, tourists in the Kimberley Region are sometimes required to pay a fee in order to stay on reserves to undertake fishing activities.

In addition, under s28 (Part III) of the AAPA Act, the ALT may subject to the approval of the Treasurer receive 'rental, royalty, share of profit or other revenue that may be negotiated or prescribed in relation to the use of the land or the natural resources', referring to Aboriginal reserves proclaimed under Part III of the AAPA Act. Such revenue can be received as long as it is for the benefit of people of Aboriginal descent.

Additional Protection of Aboriginal Land

Aboriginal communities

Aboriginal communities[26] are given the power to make bylaws for community lands under the *Aboriginal Communities Act* 1979 (WA). These bylaws enable communities to prohibit and regulate entry and prohibit and regulate behaviour of people on their land. To date, there are a limited number of areas proclaimed as Aboriginal communities.

Department of Indigenous Affairs

Under the *Aboriginal Heritage Act 1972* (WA) s38 a register of Aboriginal heritage sites was created called the Aboriginal Site Register. The register houses the names and descriptions of Aboriginal sites, including a site description, the site type, the site informants and a map showing the site boundaries. The register is maintained by the Department of Indigenous Affairs. According to the Act it is an offence to excavate, destroy, damage, conceal or alter these sites, unless authorised by the Registrar of Aboriginal Sites or the Minister for Aboriginal Affairs.

Native title

The *Native Title Act* 1993 (Cth) outlines the native title framework. Native title is granted by the Australian court system—Federal Court, High Court or state and territory courts, not by the government. In order for native title to be granted the Indigenous claimants have to prove since European settlement:

- that they have had a continuing connection with the area, and
- that traditional laws and traditional customs have been acknowledged and observed.

Acts on land subject to a native title claim which are inconsistent with asserted native title rights may be invalid ('invalid future acts' as defined by the *Native Title Act* 1993 (Cth)) and therefore prohibited. Such acts may attract a right to compensation.

When native title is recognised, claimants are entitled to the 'bundle of rights', rather than land title, which formed a part of their original claim for native title. These rights include: the right to hunt, the right to take water, the right to conduct ceremonies etc. Rights which formed a part of the claim can be extinguished during consideration of the claim if the right is inconsistent with the enjoyment of non-

[26] Under s4(b) of the *Aboriginal Communities Act* 1979 (WA) Aboriginal communities are those declared to be Aboriginal communities by the Governor based on the advice of the Minister.

Indigenous rights.

These rights exist alongside the rights of other people. For example, pastoral leaseholders are able to continue under the rights afforded to them by their lease.

Native title can be extinguished, meaning that recognition is refused, over certain areas. Extinguishment results from the government doing or allowing activities or of any private parties doing activities inconsistent with native title. Extinguishment is often identified when a native title claim is determined. For example, freehold land extinguishes native title.

Department of Consumer and Employment Protection

The DOCEP is responsible for implementing the *Explosives and Dangerous Goods Act* 1961 (WA) (EDGA). The EDGA is considered to be outdated (DOCEP 2006). The DOCEP has undertaken a lengthy consultation process to develop the new *Dangerous Goods Act* 2004 (WA) (DGA). It is anticipated that the DGA will be proclaimed by the end of 2006, enabling it to take effect. The DGA provides the DOCEP licensing and approval powers in relation to dangerous goods. The DGA covers several areas: storing and handling non-explosives, major hazard facilities, security risk substances, explosives, road and rail transport of non-explosives, dangerous cargoes in ports and general.

The issues most applicable to the tourism industry are the storage, transport and handling of dangerous goods. Locations along the coastline used as refuelling stops for cruise ships will need to abide by the storage and handling requirements outlined in the DGA.

The DGA is supported by a set of Dangerous Goods Safety Regulations (DGSR). The DGSR outline the administrative procedures necessary to implement the DGA.

Department of Environment and Heritage

The Department of Environment and Heritage (DEH) is the Commonwealth agency responsible for protecting and conserving Australia's natural environment and cultural heritage. Much of this power is found under the *Environmental Protection and Biodiversity Conservation Act* 1999 (Cth). Under the Act the DEH has jurisdiction to manage and protect the natural and cultural environment in several areas of Western Australia.

There are three areas WA of particular importance to tour operators—Ashmore Reef National Nature Reserve, Cartier Island Marine Reserve, and Mermaid Reef Marine National Nature Reserve. The three locations are identified as Commonwealth marine protected areas (MPAs). The DEH maintains a management plan for each of the locations. The management plans outline the activities that can and cannot occur in each area. Ashmore Reef and Cartier Island fall fully under the jurisdiction of the DEH, where as Mermaid Reef/Rowley Shoals is managed in part by the DEH and in part by CALM.

Ashmore Reef Marine National Nature Reserve and Cartier Island Marine Reserve are managed under the same plan. The area is remote and because of this receives few visitors 'other than traditional Indonesian, recreational yachts and Australian government vessels' (DEH 2002a). Much of the reserve is closed to public access, with limited access to the main lagoon and a small portion of the West Island. Commercial tour operators must apply to the DEH for a permit to operate in the area. The permits are considered on a case-by-case basis.

Mermaid Reef Marine National Nature Reserve is part of a group of reefs known as Rowley Shoals. Mermaid Reef is cooperatively managed by the DEH, DEC and DoF (DEH n.d.). In order to operate in the Reserve, commercial tour operators must obtain a permit from DEH. Operators are allowed to anchor in designated areas but are prohibited from fishing, feeding or removing wildlife and from disposing of waste or bilge water in the Reserve. The remaining Rowley Shoals reef system, known as Rowley Shoals Marine Park, is managed by DEC. An E-Class licence is required to operator in the Rowley Shoals Marine Park, which can be obtained through an expression of interest (EOI) application process. The EOI application for Rowley Shoals includes both a DEC licence and a DEH licence.

The DEH has two other permits that are required in Commonwealth controlled marine areas—a cetacean permit and a whale watching permit. These are required by commercial tour operators for appropriate activities. A permit is not required if: the action is authorised under a different permit (such as an incident permit), the action is outlined in a recovery plan for the specie, an emergency involving serious threat to life or property arises, or action is needed to relieve suffering of the animal. If found illegally killing, injuring, taking, trading, keeping, moving, interfering with or treating a cetacean in the Australian Whale Sanctuary, there are penalties up to $110,000 and/or up to two years' imprisonment.

APPENDIX B: Protocol for Engaging with Aboriginal West Australians

General Tips	▪ **Understand that Aboriginal people do not belong to one homogenous group. In Western Australia, there is a diversity of Aboriginal populations from a geographic, demographic, cultural, linguistic, political and economic perspective.**
	▪ Identify community, regional or other Indigenous umbrella organisations.
	▪ Get to know the community you wish to contact. Each community will have their own protocols that need to be understood and followed.
	▪ Aboriginal people have a unique relationship to land and waters of their country which requires them to look after the spiritual and environmental well-being of country. Respect the land and the people who have this connection to country just as you respect someone's home you visit.
	▪ Elders are important people within communities so listen to their advice. Remember that the term 'Elders' is a term of respect and does not necessarily reflect age.
	▪ Respect should be shown for indigenous knowledge systems and processes and the cultural property rights of indigenous peoples in relation to knowledge, ideas, cultural expressions and cultural ideas.
Project Engagement	▪ In preliminary stages identify appropriate persons who are responsible for the knowledge sought. Contact a community office or a community member who can inform you as to who may need to be spoken to, when and how meetings might occur etc. [Assistance may be accessed via Department of Indigenous Affairs (DIA) and Aboriginal and Torres Strait Island Services (ATSIS)]
	▪ Follow up preliminary contact with phone or letters in case other committees or community members need to be consulted.
	▪ Be prepared to establish a pay structure to cover participant's time and for knowledge provided.
	▪ Informed consent must be gained from those whose knowledge is being sought.
	▪ Community members have the right to choose time and place for meeting.
	▪ Face-to-face meetings are beneficial in building trust. Take cues from hosts as to how to behave at a meeting, e.g. sitting vs. standing.
	▪ Be aware that time has a different meaning and processes may take longer than anticipated. This does not mean that those who you wish to engage are not interested in the project, consultation etc.
	▪ Determine if interpreters are required, and if so, ensure that they know the dialect of the person with whom you wish to talk. Respect Aboriginal languages and speak clearly if English is not first language.
	▪ Understand the region and some of the issues affecting Aboriginal people prior to meeting.
	▪ Engagement must be based on mutual respect and reciprocity.
	▪ Be clear about what type of participation from individuals or community members is sought.
	▪ Clearly define and explain the purpose of the study or project.
	▪ Identify and set realistic and achievable goals and objectives. It is important to follow an open process from the beginning.
	▪ In the initial stages, allow opportunities for communities to acquire information – do not move too quickly.
	▪ Explain the potential benefits of the study or project without overstating the benefits.
	▪ Always listen carefully and actively.
	▪ Ensure clear and open dialogue and avoid the use of jargon.
	▪ Allow time for discussion, planning and organisation of meetings.

	▪ Allow time for information to filter to other community members.
	▪ Give appropriate and immediate feedback and follow-up on feedback reports.
	▪ Make provision for a final report meeting to consider results and obtain invitation to report on results.
Visiting Protocols	▪ Always seek and gain permission to enter an Aboriginal community. If entering Aboriginal Reserve land obtain an entry permit. (The Aboriginal Lands Trust – http://www.dia.wa.gov.au/Land/Permits)
	▪ Be aware that Aboriginal people cannot speak about (or represent) another persons *'country'* unless given permission by Traditional Owners.
	▪ As a visitor, only go where you are invited or are given permission to go.
	▪ Respect confidentiality about issues relating to other communities.
	▪ Always be courteous when dealing with community members.
	▪ Introduce yourself on arrival at a community.
	▪ Always ask for permission when taking photos of people and places.
	▪ Respect Indigenous peoples' right to maintain secrecy of Indigenous knowledge and practices.
	▪ Do not presume that the view of a group or individual represents the collective view of the community.
	▪ Do not apply stereotypes to communities and individuals when undertaking a project.
	▪ Be aware that some places are closed to visitors because of their cultural significance.

Sources: (Central Coast Aboriginal Interagency Network n.d; Department of the Environment and Heritage 2004; Forrest & Sherwood 1988; The Australian Institute of Aboriginal and Torres Islander Studies 2000; West Australian Government 2005).

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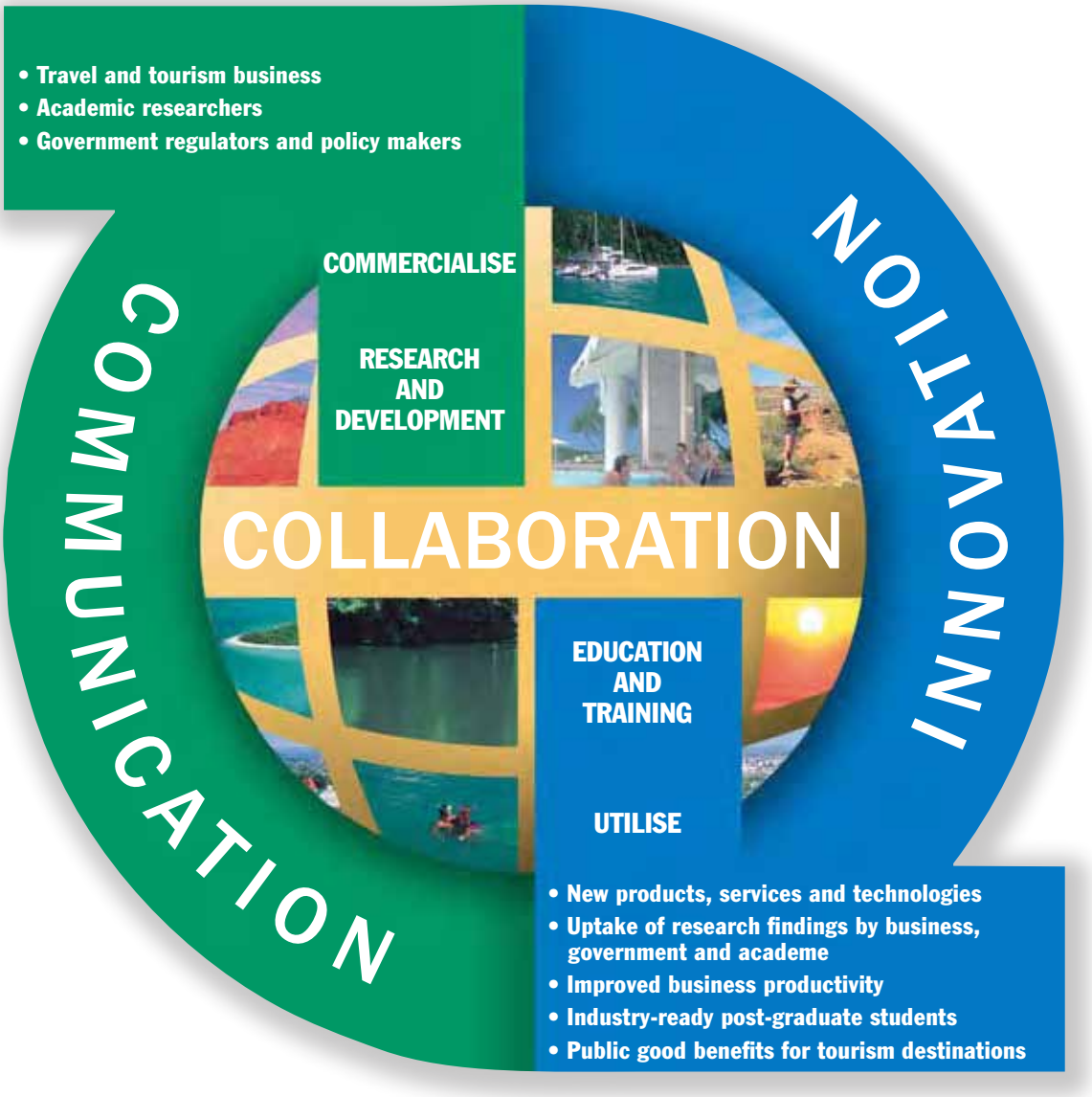

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The STCRC was established in July 2003 under the Commonwealth Government's CRC program and is an extension of the previous Tourism CRC, which operated from 1997 to 2003.

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

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STCRC's objectives are to enhance:

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