

**SPECIALIST ACCOMMODATION OPERATIONS IN NORTH
QUEENSLAND: ENVIRONMENTAL MANAGEMENT,
ENVIRONMENTAL ATTITUDES AND ECOLOGICAL
SUSTAINABILITY**

Thesis submitted by

Julie Anne CARMODY

Assc. Dip. Business (Hospitality Management), UQ

B. Admin (Tourism) Honours, JCU

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James Cook University

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STATEMENT ON CONTRIBUTION OF OTHERS

The following contributions of others to the intellectual, physical and written work of this research higher degree thesis are gratefully acknowledged.

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DECLARATION ON ETHICS

The research presented and reported in this thesis was conducted within the guidelines for research ethics outlines in the *National Statement on Ethics Conduct in Research Involving Human* (1999), the *Joint NHMRC/AVCC Statement and Guidelines on Research Practice* (1997), the *James Cook University Policy on Experimentation Ethics. Standard Practices and Guidelines* (2001), and the *James Cook University Statement and Guidelines on Research Practice* (2001). The proposed research methodology received clearance from the James Cook University Experimentation Ethics Review Committee (approval number H1704).

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ABSTRACT

Specialist accommodation operations are a rapidly expanding nature-based accommodation sector contributing to the expansion of tourism in regional and rural areas near protected areas in Australia. Specialist accommodation operations are characterised by being owner-operated accommodation styles having a small room capacity, a high host-guest interaction, the location, features or services of the establishment provide a special opportunity for guests, and there are special activities offered to guests. The styles of accommodation included in the study were bed and breakfasts, farm stays, cabins, cottages, houseboats, licensed public hotels, backpacker hostels, ecolodges, retreats and spas, and guest houses. This thesis examines the implementation of environmental management practices and the environmental attitudes held by the owners of specialist accommodation establishments neighbouring or located within 50 kilometres of the Wet Tropics World Heritage Area in North Queensland. The study provides an understanding of how specialist accommodation operators located near protected areas contribute to the ecological sustainability of the natural environment.

A total of 101 specialist accommodation operators located on the Atherton Tablelands (n=50), in the Daintree region (n=32) and the Mission Beach region (n=19), completed a purposely designed postal survey investigating the characteristics of the accommodation business, demographic information about the owner-operators, perceptions of environmental certification and codes-of-conduct, the implementation of 43 environmental management practices for water conservation, energy conservation, liquid and solid waste management, sustainable design and other sustainable practices, and the environmental attitudes of the owner-operators were measured with the New Ecological Paradigm (NEP) (Dunlap, Mertig, O'Leary & Jones, 2000). Semi-structured interviews were held with 30 of the specialist accommodation operators in the sample, seven local Shire Council town planners and the Wet Tropics Management Authority. A brief one-page survey emailed or posted to tourism and accommodation associations asking of environmental policies and codes for members was returned by 14 associations.

All of the specialist accommodation operators surveyed are located within 50 kilometres of a protected area and 30.0% are neighbouring a protected area, mostly the WTWHA. Bed and breakfasts, cabins, cottages and caravan parks made up more than 60.0% of the sample. The mean number of rooms for an establishment is 5.8. Specialist accommodation operators are predominantly husband and wife teams aged over 40 years with tertiary or trade qualifications. More than 70.0% of these people have operated their specialist accommodation for less than eight years. The most dominant reason for operating a specialist accommodation is for a change of lifestyle. Approximately 95.0% of the operators are members of a tourism or accommodation association.

Environmental management practices readily adopted by specialist accommodation operations are dual flush toilets, purchasing local goods and services, bulk purchasing practices, the use of bio-degradable cleaning products, the use of ceiling fans not air conditioning, and the sustainable design techniques of maximizing natural ventilation and natural light, and their landscaping reflecting the natural environment. The implementation of alternative sustainable environmental management practices using wind, solar or water are minimal. Almost all of the operators had a personal concern for the environment with more than 50.0% of operators stating this was their reason for voluntarily adopting an environmental code-of-conduct; others followed a code for better environmental management. The achievement of environmental certification with Ecotourism Australia, Green Globe or AAA Tourism Green STARS is minor with most specialist accommodation operators believing certification is beneficial to their business or will benefit their marketing activities.

The New Ecological Paradigm showed operators are generally pro-environmental holding an ecological worldview to varying degrees. Three factor groups were found to exist – those who co-exist with nature, anthropocentrics and pro-environmentalists. Correlates of environmental concern indicators were found to be either non-existent, statistically insignificant or empirically weak. To understand the correlation between an owner-operator's environmental attitudes and an individual's intention to behave environmentally,

the Framework of Environmental Behaviour recognises situational, psychological and demographic factors which affect an individual's environmental behaviour intention. Barriers to implementing environmental management techniques included location, climate, knowledge, cost, time and the style of specialist accommodation.

Regulatory bodies interacting with the specialist accommodation sector in this study were the seven local Shire councils of Atherton, Mareeba, Eacham, Herberton, Douglas, Johnstone and Cardwell, the Wet Tropics Management Authority and 14 tourism and accommodation associations. In essence, research of the regulatory agencies focused on the existence of environmental policies, codes-of-conduct and guidelines for the specialist accommodation operators located near protected areas. Shire council planning schemes have the opportunity to provide advice on environmental best practice to new development applications assessed under recent relevant codes. There is no mechanism to encourage environmental best practice management to existing specialist accommodation operations. The Wet Tropics Management Authority recognises a cooperative approach between stakeholders of the Wet Tropics is imperative for the future sustainability of this world heritage listed bioregion. The benefits of working with the community have been previously recognised by WTMA with the encouragement of a landholders/ neighbours liaison group. WTMA also encourage and promote voluntary conservation agreements with private landowners within the Wet Tropics region particularly where cassowary habitat corridors are located. The most dominant purpose of tourism and accommodation associations is collective marketing. Environmental codes-of-conduct, recommendations for environmental best practice or environmental awards to encourage best practice techniques for their members is minimal.

This discussion of the study findings has provided further support to the proposition that specialist accommodation operations are more conscious of, and compatible with, the principles of ecologically sustainable tourism than traditional accommodation (Morrison et al., 1996). A personal concern for the environment was apparent and widespread. The majority of specialist accommodation operators are aware of the importance of their

environmental actions and the consequences of improper environmental management. There are internal and external factors impeding the implementation of some environmental management practices.

This study has provided an initial understanding of the specialist accommodation sector and their contribution to the future preservation of protected areas. Knowledge transfer is imperative for the future ecological sustainability of tourism operations located near or neighbouring protected areas in North Queensland. The results have proven specialist accommodation owner-operators are contributing to the protection and management of protected areas with ecological significance through a personal concern for the environment, the implementation of sustainable environmental management practices and principles, and guest education initiatives, all to the best of their knowledge and abilities.

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CHAPTER 1: INTRODUCTION

Structure of the Chapter

1.1 Introduction

1.2 The Research Problem

1.3 Justification for the Thesis

1.4 Definitions

1.5 Aims and Objectives of the Research

1.6 Scope of the Thesis

1.7 Overview of the Thesis Structure

1.8 Summary

1.1 Introduction

This thesis is about the implementation of environmental management practices and the environmental attitudes held by specialist accommodation operators near the Wet Tropics World Heritage Area (WTWHA) in North Queensland, Australia. Hence, the thesis is not focused on who visits and stays at specialist accommodation near protected areas, but rather who are the people operating these businesses and whether they act sustainably. This includes what environmental management practices and sustainable principles do they employ, what is their attitude towards the environment, and are there barriers (both internal and external) to a sustainable tourism operation? The existing interface between the specialist accommodation operators and environmental agencies, tourism associations and local government planning is also explored.

The definition of specialist accommodation adopted for this research is that developed by Morrison, Pearce, Moscardo, Nadkarni and O’Leary (1996). These styles of specialist accommodation have five key qualifying criteria:

- 1) a personal interaction between the guests and the owner-hosts;

- 2) a special opportunity or advantage to guests through location, features of the establishment, or services offered;
- 3) special activities offered to guests;
- 4) owner-operated; and
- 5) small guest accommodation capacity (generally less than 25 rooms).

The styles of specialist accommodation included in this study are bed and breakfasts (B&B), farm stays, cabins, cottages, guesthouses, caravan and camping parks, backpackers, houseboats and licensed public hotels in North Queensland. Beeton (1998) identifies a similar variety of accommodation styles implying they tend to reflect the character of the region, are small scale and locally owned, have a high guest-host interaction; there are local employment opportunities, and other community economic benefits including the purchasing of local goods and services.

A core component of the nature-based tourism sector is these various styles of specialist accommodation located near protected areas, which are conducive to the nature-based tourism industry of the North Queensland Wet Tropics World Heritage Area. Nature-based tourism involves a sustainable approach to tourism operations including accommodation, and encourages 'responsible tourism' both environmentally and socially. For this type of tourism to be ecologically sustainable, it must be appropriate to the specific location and produce no permanent environmental degradation. Newsome, Moore and Dowling (2002, p. 13) define nature-based tourism as tourism that "occurs in a natural setting but has the added emphasis of fostering understanding and conservation of the natural environment". Nature-based tourism is concerned with the direct enjoyment of some relatively undisturbed phenomenon of nature and is diverse in the activities and locations where it can take place (Valentine, 1992).

It is recognised that for the nature-based tourism industry to continue for future generations, environmental management practices and principles of ecological and social sustainability are the fundamental basis to enjoy the natural resources of an area through

conservation and protection of the natural environment. Many of these specialist accommodations located near National Parks and World Heritage Areas (WHA) are showcasing the natural environment to their guests whilst key nature-based attractions act as a backdrop to the operation. For these reasons, this research has focused on the environmental management techniques implemented by specialist accommodation operators and their future intentions if any, for:

- water management;
- energy management;
- liquid and solid waste management;
- sustainable design; and
- sustainable management practices of gardening practices; purchasing practices; community involvement; and fauna, flora and feral pest management.

The implementation, benefits and perceptions of environmental tourism certification and voluntary land agreements adopted by specialist accommodation operators near protected areas in North Queensland are also explored. The range of stakeholders considered to be involved in nature-based tourism of the Wet Tropics World Heritage region and included in the research is:

- specialist accommodation operators;
- tourism and accommodation associations;
- environmental protection agencies; and
- local government town planners.

The principles for ecologically sustainable management followed in this study are drawn from those core elements of the EcoCertification Program (formerly the Nature and Ecotourism Accreditation Program) developed by Ecotourism Australia (2003) and relevant literature identifying characteristics of ecologically sustainable accommodation, environmental management techniques, and sustainable design practices for tourism accommodation (for example, Ceballos-Lascurain & Mehta, 2002; Cock & Pfueller, 2000; Tourism Queensland, 2002a; Wight, 1997). In addition, the use of the New Ecological

Paradigm developed by Dunlap, Van Liere, Mertig and Jones (2000) is employed to measure the environmental attitudes held by the owner-operators of the specialist accommodations included in this study.

1.2 The Research Problem

Research of specialist accommodation operations and the owner-operators of these establishments are limited within the academic literature. The Australian Government's *Tourism White Paper* (2004) also recognises a key information gap in data about regional and local level tourism, small accommodation and caravan accommodation.

In 1992, Moscardo, Morrison and Pearce (1996) undertook an assessment of 176 specialist accommodation establishments to investigate state government policy options for the development of the specialist accommodation sector in two regions of Queensland – Toowoomba and the Golden West located west of Brisbane in southeast Queensland and around the Douglas Shire centres of Port Douglas and Daintree/ Cape Tribulation in North Queensland. The types of specialist accommodation included in the study were guesthouse, nature retreats, cottages, farm stays, bed and breakfasts and other styles, including hunting lodges and health farms. An assessment based on the key characteristics of ecologically sustainable practices of specialist accommodation in comparison to traditional accommodation (e.g. hotels and motels) by these authors proposed it was highly unlikely that any one accommodation type is clearly better on all dimensions of ecological sustainability. A more valuable and informative way to assess ecological sustainability may be to look at each different style of specialist accommodation (Moscardo, *et al*, 1996).

For these tourism operations to be sustainable, Harris and Leiper (1995) infer larger corporate enterprises should lead the way in implementing sustainable practices. However, the real “challenge is to raise concern for the environment among the smaller, more numerous establishments and achieve something of a ‘trickle down’ effect in the diffusion

of best practice environmental management at all levels of tourism activity” (Pigram, 1997, p. 187). Pigram (2000a, pp. 377-378) states the measures to achieve sustainable tourism are clear:

The key to achieving environmentally compatible forms of tourism and, ultimately, a sustainable tourist industry rests on recognition by the public sector of the need for environmentally sensitive policies and planning, and a positive response by private sector interests to the sustainability imperative. Increasing environmental awareness globally has contributed to progress toward environmentally compatible tourism. At different levels the tourism industry has reacted by entering into partnerships with environmental groups, and has consulted effectively with host communities and resource management agencies to support conservation objectives.

This thesis will fulfil the need to review the present and future implementation of environmental management practices and the environmental attitudes held by these specialist accommodation operators across the nature-based tourism sector in North Queensland who benefit from proximity to, and the use of, protected areas. A lack of understanding of the cumulative impact of environmental problems possibly caused by the operation of these accommodations and the uncertainty surrounding environmental changes due to the growth of this sector is necessary for the purposes of regional and destination tourism planning. According to Goodall and Stabler (1997, p. 281) unless existing tourism activity, and even if new tourism developments implement current best practice environmental management techniques, “further tourism growth will give rise to problems of accumulating incremental impacts on natural systems”. Consequently, this continued growth of tourism accommodation has the potential to affect the natural environment and change the ecological significance of a nature-based destination including protected areas.

1.3 Justification for the Thesis

Within Australia it is estimated there are 55,000 small tourism businesses and there is a small but real cumulative impact on the environment from the operations of many of these tourism businesses (Carter, Whiley & Knight, 2004; Wall, 1997; Cater, 1995). The tourism industry in Australia has witnessed a steady growth of specialist accommodation operations such as ecolodges and bed and breakfasts that pertain to be sustainable and eco-friendly. Ecotourism Australia (EA) estimates that Australia had over 2,935 nature tourism and ecotourism operators in 2001 with Queensland having 27% (794 operators) of the national total (Tourism Queensland, 2002b). Tourism is a key economic driver for the Australian economy. It directly employs almost six per cent of the workforce, contributes \$73 billion in expenditure per annum and is worth more than 11% of total exports. More than 80 per cent of tourism-related businesses employ fewer than 20 staff (Department of Industry, Tourism and Resources, 2002).

While there is clear acknowledgement of the need to take the environment into account in the planning and development stages of tourism, sector specific initiatives still leave a gap between theory and practice to make best practice environmental management operational, and even less guidance is available to existing tourism businesses seeking practical advice on how to be environmentally sustainable (Goodall & Stabler, 1997). Understanding how environmental concern is reflected in people's attitudes and value systems is important for the development of environmental management in tourism (La Trobe & Acott, 2000).

Monitoring of the uptake of sustainable tourism practices in Australia is a logical step to now take with the advent of codes of conduct and environmental certification processes that have been developed and proposed by regulatory bodies since the 1990s. These include protected area planning and management agencies (i.e. Environmental Protection Agency, Queensland Parks and Wildlife Services and Wet Tropics Management Authority), local government councils, tourism industry associations (e.g. Ecotourism Australia, Pacific Asia Tourism Association, Green Globe 21) and tourism accommodation associations (e.g. Bed & Breakfast & Farmstay Association of North Queensland, Caravan and Camping Associations) for the purpose of best environmental practice.

The research project was undertaken in North Queensland, Australia where there are two iconic world heritage listed sites of the Wet Tropics rainforests and the Great Barrier Reef Marine Park. These rainforests and surrounding natural landscapes are a significant drawcard for one of the largest industries in the region, nature-based tourism (Dredge & Humphreys, 2003). Large tracts of fragmented freehold land holdings are located next to protected areas of the Wet Tropics World Heritage listed rainforests. There are an estimated 2,500 adjoining property owners to the Wet Tropics World Heritage Area's (WTWHA) 3,000 kilometre boundary and approximately 300 separate parcels of privately owned land within the Wet Tropics WHA (Wet Tropics Management Authority, 2003).

Visitation to the main tourism hub of Cairns and its peripheral regions in North Queensland (i.e. Port Douglas, Daintree, Atherton Tablelands, Mission Beach) attracted over two million visitors in 2003 contributing to almost 14 million visitor nights in the Tropical North Queensland (TNQ) region (Tourism Research Australia, 2004). The Atherton Tablelands, Daintree Region and Mission Beach Region containing Wet Tropics World Heritage Listed rainforests, are all located within two hours driving distance of the popular tourist destination of Cairns. These nature-based areas are now encouraging and experiencing growth in the overnight and short-stay visitor market.

This study will establish the best practice environmental management techniques used by specialist accommodation operations near protected areas in the Wet Tropics WHA of North Queensland, Australia. A profile of the owner-operators of the specialist accommodation operators will provide an insight into the implementation of environmental practices for future sustainability by these entrepreneurs of the tourism industry in North Queensland. This is a relatively unexplored growing niche within the accommodation sector of the nature-based tourism industry. According to Barr (2004, p. 232), "there remains an issue relating to the reasons individuals do not partake in environmental actions that are readily activated or require little change in lifestyle or habit". The operator's perceptions of environmental certification, environmental management practices, support

from local government and other regulatory agencies will contribute to the understanding of the internal and external factors affecting the ecological sustainability of the specialist accommodation sector. Measurement of environmental attitudes of a particular group of people involved in nature-based tourism will contribute to the understanding of the reasons for the implementation of environmental management techniques used by a spectrum of specialist accommodation operations located near protected areas in Far North Queensland. This understanding will employ the New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000) and the Framework of Environmental Behaviour (Barr, 2004) to explore the relationship, if any, of environmental attitudes and the operator's intention to implement environmental management practices for the future sustainability of the Wet Tropics region, an area of ecological, economic and social significance.

It is envisaged the research will benefit policy and planning agencies regulating tourism near protected areas by providing an audit of environmental management techniques used by specialist accommodation operators. Indirectly, the research will provide a profile of the specialist accommodation operators and provide an understanding of the internal and external factors affecting the environmental practices of the specialist accommodation sector in Far North Queensland. Moreover, private landholders considering establishing or diversifying into an accommodation operation on their tenure may well benefit from knowledge of environmental best practices currently in use and promoted by environmental agencies, council town planners, tourism associations and existing specialist accommodation operations.

1.4 Definitions

The following definitions are provided to conceptualise the main aim of the thesis. This research is focused on the environmental attitudes and environmental practices of small owner-operated accommodations located near protected areas in Far North Queensland. Future growth of tourism in the Wet Tropics World Heritage Area naturally alludes to the question of future sustainability and conservation. The definitions provided are:

- Sustainable tourism
- Nature-based tourism
- Alternative tourism
- Ecotourism
- Rural tourism
- Specialist accommodation
- Wet Tropics World Heritage Area

The inherent similarities of alternative tourism, ecotourism and rural tourism are discussed within the realms of nature-based tourism, all encompassed under the sustainable tourism umbrella. The defining characteristics of specialist accommodation are also discussed.

1.4.1 Sustainable Tourism

Sustainable tourism has arisen from the concept of sustainable development and is tourism that aims for minimal impact on the environment and host community, and adheres to the principles of environmental, socio-cultural and economic sustainability (Weaver, 2001). These three principles ensure the triple bottom line approach for sustainability and must establish a suitable balance between them to guarantee long-term sustainability. Firstly, ecological sustainability demonstrates that development is compatible with the maintenance of essential ecological processes, biological diversity, and biological resources. Secondly, social and cultural sustainability suggests development increases people's control over their lives, is compatible with the culture and values of people affected by it, and maintains and strengthens community identity; and thirdly, economic sustainability ensures development is economically efficient and that resources are managed so that they can support future generations.

Recently, the World Tourism Organisation (2004, ¶ 3) indicated sustainable tourism should:

- ✓ Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- ✓ Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
- ✓ Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income earning opportunities and social services to host communities, and contributing to poverty alleviation.

Although both of these definitions for sustainable tourism are similar, it is reasoned that the earlier version put forward by Weaver (2001) is more aligned to an established tourism industry that is already within a developed country and where ecological processes and their protection are already considered of importance. This definition of sustainable tourism by Weaver (2001) supports the objectives of the present study, and the geographic areas of North Queensland where natural areas such as the Wet Tropics WHA are strongly protected by environmental legislation. Achieving sustainable tourism is a continuous process requiring constant monitoring of impacts, and introducing the necessary preventative and/or corrective measures whenever necessary (World Tourism Organisation, 2004).

In a more environmentally conscious world, tourism faces increasingly stringent conditions on development, reflecting a concern for sustainability and the long-term viability of the resources on which it depends. The dependence of tourism on the natural environment must be balanced with the preservation and conservation of the environment if the industry is to be viable in the long term for this and future generations (Dowling, 2000a). According to Pigram (2000a) the challenge for the tourism industry is to justify its claims on natural resources and the environment with a commitment to their sustainable management.

Sustainable tourism involves “using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future can be increased” (Department of Tourism, Small Business and Industry, 1997, p.42). Sustainable tourism development aims to meet the needs of present tourists and host regions while protecting and enhancing environmental, social and economic values for the future (Page & Dowling, 2002, cited in Cater, 2004, p. 485). Moscardo, Morrison and Pearce (1996) identified a list of key characteristics of ecologically sustainable accommodation based on the goals and characteristics of ecologically sustainable tourism as outlined by Lane (1991) and the Australian Government’s ESD Working Group Report for Tourism (1991). Table 1.1 lists these key characteristics of ecologically sustainable accommodation (Moscardo, Morrison & Pearce, 1996, p. 32), although not all of the characteristics need to be met by each establishment.

Table 1.1: Key Characteristics of Ecologically Sustainable Accommodation (Moscardo, Morrison & Pearce, 1996)

<ul style="list-style-type: none"> • Small scale. • Locally owned (to maximise local economic benefits). • Provides employment opportunities for the local community. • Provides other economic opportunities for the local community. • Is spread throughout a region rather than clustered near major attractions (this both spreads the benefits and impacts of tourism). • Has a character, either through design or activities offered, that reflects the region. • Encourages protection of the heritage of a region through the use of existing and/ or heritage buildings, through providing interpretative or educational opportunities for guests through encouraging guests to engage in sustainable activities by minimising adverse biophysical impacts. • Does not adversely impact on other industries or activities. • Provides a quality experience for guests. • Must be a successful business.

There has been much debate over the definitions and similarities of alternative tourism (Moscardo, 1996), ecotourism (Blamey, 1997; Diamantis & Ladkin, 1999; Orams, 2000; Weaver, 2001), and rural tourism (Page & Getz, 1997; Long & Lane, 2000), although it can be inferred that they are subsets of nature-based tourism and the wider realms of sustainable tourism. That is, the tourism operation is based on the surrounding natural environment, is often small-scale in size, and there is now a recognition to maintain the essential ecological processes for future generations. The nature-based tourism industry has nurtured and promoted the growth of the related niche markets of alternative tourism, ecotourism and rural tourism.

1.4.2 Nature-Based Tourism

Essentially, nature-based tourism involves the direct use of a destination's natural resources as either a setting or as an attraction. Valentine (1992) suggests there are three possible ways for the activity to interact with the natural environment: 1) activities that are dependent upon nature for the attraction and/or setting; 2) activities that are enhanced by nature; or 3) where the natural environment is incidental to the activity. Nature-based tourism businesses are typically small, regionally located businesses typified by the ideals of micro businesses and run by owner-operators who have few or no full time staff other than family members (Meredith, 1995 cited in McKercher, 1998).

Lawton and Weaver (2001) exemplify 3S (sun, sea, sand) tourism, adventure tourism, consumptive tourism (e.g. fishing and hunting), captive tourism (e.g. zoological gardens) and health tourism (e.g. spas and therapeutic mud) as all activities qualified under the banner of nature-based tourism. Each of these activities has to some extent, a dependent, enhanced or incidental relationship with the natural environment. With similar results, a recent conceptualisation of the multiple origins of nature-based tourism by Meyer-Arendt (2004) identify the Romanticism era, the springs tradition, the seaside tradition, nature in religion, exploration, the parks and recreation movement, hunting and fishing, curiosity about animals and the search for the perfect climate have all contributed to the development and expansion of tourism in natural settings.

According to Meyer-Arendt (2004), the Romantics painted natural landscapes giving nature a spiritual property, wholeness and wellness, as did the romanticism of the pastoral and rural areas with the countryside providing the setting to hike and bicycle ride. Similarly, religious pilgrimages often treated the natural environment as sacred. 'Taking of the waters' at natural springs is believed to have been considered therapeutic and have spiritual value. This tradition still exists today and perhaps is increasing in popularity, albeit in structured pools and spas. Seaside bathing in earlier times and the general attraction to water by humans for fishing may also be labelled as nature-based tourism. The first National Parks of Yellowstone, Yosemite and the Grand Canyon in the United States

presented new forms of nature-based tourism, including exploration and the continuous appreciation of protected areas for recreational pursuits. Even climate has a nature-based tourist attraction with many people following warmer climates seasonally (for example winter snowbirds and grey nomads). Lastly, there is a natural curiosity about wildlife in their natural environments.

Following the release of the *Tourism White Paper* (Department of Industry, Tourism and Resources, 2004) a survey of 800 residents of Australia, points out 44% – 46% were interested in nature resorts, lake retreats and holiday houses described to them at the beginning of an interview. A nature resort was described as a secluded luxurious resort blending into the natural environment offering massages, beauty treatments, bushwalking or horse-riding. The holiday house was described as a secluded scenic place with all amenities provided, would offer opportunities to take walks, view birdlife and wildlife in the surrounding bushland and allow a drive to small local town to shop or eat. The lake retreat was described as a cabin by a lake or waterway in a secluded bush setting providing basic facilities like hot water and a kitchenette and would provide the opportunity for walks, picnics or fishing. Approximately 70% of these respondents would prefer to stay at one of these accommodation styles in their own state for more than three days. Of those who would prefer to go to another state or territory for this nature-based experience, approximately 35% would prefer to go to Queensland (Department of Industry, Tourism and Resources, 2004).

The contribution of nature-based tourism and protected areas to the quality of life in rural and regional areas of Australia (Bushell, Staiff & Conner, 2002) suggest nature-based tourism can act as a vehicle for conservation by aiding the process for political and community support into regional and rural development strategies. Bushell, Staiff and Conner (2002, p. 28) argue nature-based tourism “can play a role in fostering the notion of stewardship by making Australians more appreciative of nature, more attuned to the increasing loss of open space, and more aware of the impacts of contemporary consumer lifestyles on the natural environment”. Tourism can enhance environmental awareness and

appreciation of the natural environment and in some instances, provide funds for conservation (Huybers & Bennett, 2002). It is important to recognise that tourism activities can have detrimental environmental effects and the quality of the tourist experience is directly related to the quality of the natural environment and, by implication, to the degree of environmental management techniques implemented.

The interchanging of the terms nature-based tourism and ecotourism in the past is an indication of the similarities of these two styles of tourism, however it is advocated here that nature-based tourism encompasses ecotourism, alternative tourism and rural tourism. Differences are found in the levels of education and interpretation offered to the visitor, the local community benefits and the actual environment that stages the nature-based tourism experience. These three subsets of nature-based tourism are briefly explained.

1.4.3 Alternative Tourism

Pearce (1992) points out that Deroi (1981) initially defined alternative tourism by accommodation type and later strengthened this definition in consideration of other features distinguishable from conventional or commercial tourism. Deroi (1988, p. 89) states “alternative tourism (AT) or community based tourism (CBT) is a privately offered set of hospitality services (and features), extended to visitors, by individuals, families, or a local community. A prime aim of AT/CBT is to establish direct personal/ cultural communication and understanding between host and guest”. These new forms of alternative tourism identified between 1970 and the early 1980s were usually small scale, low key in nature and involved a high degree of local population participation (Pearce, 1992). De Kadt (1992) provides a summary of the themes seemingly present as the central issues of alternative development and consequently, alternative tourism. It is put forward that firstly, alternative tourism is ecologically sound, does not damage the environment and lessens the negative impacts associated with large-scale developments. Second, it consists of smaller developments or attractions set in and organised by villages or communities. Thirdly, the benefits of tourism flow to local residents and communities, and lastly, there is

an emphasis on cultural sustainability. It can be said that these traits of alternative tourism are in fact the traits of sustainable tourism.

In contrast to mass tourism, alternative tourism has been described as a small-scale, locally controlled type of nature-based tourism that complements the local economy and blends into the local cultural landscape (Weaver, 2001). There is direct contact between the hosts and guests, and local control over development. It is perceived as having a small-scale emphasis and provides an active experience for the tourists (Moscardo et al. 1996). Weaver and Oppermann (2000) add that the character of alternative tourism attractions is 'authentic' not 'contrived' and is seen to complement existing tourism activity, not dominate the local economy. Alternative tourism can provide a greater range of opportunities for visitors, and can demonstrate the value and practicality of techniques designed to minimise visitor impacts (Moscardo et al. 1996). Alternative tourism emphasises the well-being of the natural environment, while concurrently recognising the importance of host communities. Community development and progress should recognise the significance of sustainability and take into account the need to balance the environmental, social and economic need of that community (Brown 1997 cited in Bushell et al. 2002).

Jafari's (1989) four platforms of tourism growth also alluded to the concept of alternative tourism in his third platform. Beginning with the end of World War II and the first platform of 'advocacy', tourism was regarded as an ideal activity having few, if any negative consequences capable of generating significant economic growth. Next, the 'cautionary' platform, of the late 1960s through the 1970s and into the early 1980s argued a *laissez-faire* approach to tourism growth would "result in a variety of negative consequences for destinations unless careful regulations were put into place" (Weaver, 2001, p. 3). The third platform, 'adaptancy', of the 1980's, maintained the principles of the previous platform but is distinguished by its efforts to propose and implement positive tourism options. These options grouped under the banner of alternative tourism, were conceived as opposite to mass tourism and could be considered sustainable.

Table 1.2 illustrates the polar opposites of mass and alternative tourism. Although Jafari did not itemise alternative tourism as being nature-based, subsequent reiterations of the term by Moscardo et al. (1996) and Weaver (2001) have alluded to this style of a nature-based environmental setting characterising alternative tourism. Jafari's fourth platform, 'knowledge-based' dominant since the early 1990s, is characterised by a preference for objective, scientific methods to obtain knowledge about the tourism sector. The advent of the knowledge-based platform coincided with the emergence of sustainable tourism in academic literature and the release of the World Commission Environment and Development (WCED) Brundtland Report (1988) which developed guiding principles for sustainable development.

Table 1.2: Ideals of Alternative Tourism and Mass Tourism– The Adaptancy Platform

CHARACTERISTICS	ALTERNATIVE TOURISM	MASS TOURISM
<i>Accommodation</i>		
Size	Small scale	Large scale
Spatial pattern	Dispersed throughout area	Concentrated in 'tourist areas'
Density	Low	High
Architecture	Vernacular style; unobtrusive; complementary	'International' style; obtrusive; non-sympathetic
Ownership	Local, small businesses	Non-local, large corporations
<i>Markets</i>		
Segment	Allocentric-midcentric	Psychocentric-midcentric
Volume and Mode	Low; individual arrangements	High; package tours
Seasonality	No distinct seasonality	Dsitinct high and low seasons
Origins	No dominant markets	A few dominant markets
<i>Attractions</i>		
Emphasis	Moderately commercialised	Highly commercialised
Character	Area specific, 'authentic'	Generic, 'contrived'
Orientation	Tourists and locals	Tourists only or mainly
<i>Economic Status</i>		
Role of tourism	Complements existing activity	Dominates local economy
Linkages	Mainly internal	Mainly external
Leakages	Minimal	Extensive
Multiplier Effect	High	Low
<i>Regulation</i>		
Control	Local 'community'	Non-local private sector
Amount	Extensive, to minimise local negative impacts	Minimal; to facilitate private sector
Ideology	Public intervention	Free market forces
Emphasis	Community stability and well-being; integrated; holistic	Economic growth; profits; sector specific
Time frame	Long term	Short term

Source: Weaver and Opperman (2000)

An examination of the characteristics of alternative tourism as defined by Jafari (1989), reiterate the alternatives to mass tourism. The style portrayed of the accommodation characteristics are similar to the specialist accommodation operations described by Morrison, Pearce, Moscardo, Nadkarni and O’Leary (1996). These are small scale with a vernacular appearance conducive to the nature-based setting. This style of accommodation is owner-operated having a high host-guest interaction and is interspersed throughout a region. They are not clustered around attractions rather the natural environment acts as a backdrop to the tourism experience. There is a focus on the local community through support of other businesses, and the transfer of a local community ‘attitude’ of ecological and social sustainability that will often endear the specialist accommodation visitor experience. It can be noted here the absence of educational and interpretative components at this earlier stage of the conceptualisation of alternative tourism. The characteristics and concepts of alternative tourism, the subsequent desire for knowledge about the tourism sector and the realisation of environmental and social impacts from the tourism industry, have in part led to the emergence of ecotourism and rural tourism.

1.4.4 Ecotourism

The term ecotourism was originally coined and defined by Ceballos-Lascurain in 1983. Since these first concepts of ecotourism, numerous academics, government bodies and organisations globally have launched a myriad of definitions and explanations in the search for an operational clarification of ecotourism (for example Valentine, 1992; Allcock, 1994; Goodwin, 1996; Tourism Queensland, 1997; Fennell, 1999; Ecotourism Association of Australia, 2000). Ecotourism Australia (2000, p. 4) succinctly defines ecotourism as “ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation”.

Although ecotourism is considered a subset of nature-based tourism and sustainable tourism, the predominant difference between ecotourism and other types of nature-based tourism is the educational element; the ethical stand of supporting and encouraging ongoing conservation; and direct community benefits from tourism (Beeton, 1998). Honey and

Stewart (2002) postulate that ecotourism is not simply another niche market; rather it is a philosophy, a set of principles and practices that will lead to the transformation and future sustainability of various tourism sectors. Page and Dowling (2002 p.86) agree “ecotourism is more than a specific form of tourism – it is an ethic, a philosophy, an ideal”. Ecotourism is a sustainable development tool where conserving the environment can make a difference environmentally, socially and economically (Epler Wood, 2002).

In essence, there are four agreed notable elements of ecotourism (Beeton, 1998; Beaumont, 1998; Weaver, 2001; Page & Dowling, 2002):

1. It is nature-based and occurs in a natural setting;
2. There is an educational and/or interpretative component. Tourists are now more socially and environmentally aware.
3. Environmental, social and cultural impacts are to be managed sustainably.
4. Provides conservation and community benefits.

The objective of ecotourism management strategies according to Orams (2000) should be to move ecotourists from a passive role of recreation simply based on the natural environment, to a more active role where their activities actually contribute to the conservation of the environment and hopefully a behaviour lifestyle change for the ecotourist. This ecotourism continuum has received further attention by Weaver and Lawton (2001) who classified ecotourists into ‘harder’, ‘softer’ and ‘structured’. The ‘harder’ ecotourist has a strong environmental commitment, has an emphasis on the personal experience and achieves this through physically active and longer trips. These type of ecotourist will actively participate in the conservation and preservation of the nature-based tourism destination. Examples of active participation in conservation are tree planting, wildlife monitoring and land rehabilitation.

The 'softer' ecotourist however, is one who has a moderate environmental commitment, and has an emphasis on interpretation with shorter, multi-purpose trips. The 'soft' ecotourist is similar to those consumers who participate in nature-based tourism activities. Weaver (2006) infer soft ecotourism is facilitated in less natural settings, for example, wildlife parks, scenic lookouts and signed hiking trails. Positioned between the hard and soft ecotourist is the 'structured' ecotourist, who has a strong environmental commitment, enjoys multi-purpose trips with an emphasis on interpretation. These ecotourists are similar to the harder ecotourist although expect services, interpretation and social interaction during the experience (Weaver & Lawton, 2001). Specialist accommodation operations predominantly attract softer ecotourists, those wanting a short break within a nature-based environment. Specialist accommodation "tends to be small-scale facilities that adhere to unobtrusive vernacular standards and are dispersed at a low density throughout the destination" (Weaver, 2006, p. 42).

1.4.5 Rural Tourism

The *National Rural Tourism Strategy* in Australia states "rural tourism is a multifaceted activity that takes place in an environment outside heavily urbanised areas". This is an "industry sector characterised by small scale tourism businesses, set in areas where land use is dominated by agriculture, forestry or natural areas" (Commonwealth Department of Tourism, 1994, p. 3). Rural attractions, rural resorts, farm stays and other styles of country accommodation, country festivals and events, and agricultural education may all be included under the banner of rural tourism.

Lane (1994) defines rural tourism as being characterised by its location in rural or remote areas. It is "functionally based on the countryside's unique selling points of small-scale enterprise, open space, contact with closeness to nature, and heritage based on 'traditional' societies and working practices" (Long & Lane, 2000, p. 301) and it is rural in scale, that is, small scale, slow growing and connected with family enterprises. Long (1998) perceives rural as "a place of safety, with solid values, surrounded by open space and natural beauty, where one is treated respectfully and friendly" (cited in Long & Lane, 2000, p. 301). These

characteristics of rural tourism are similar to those of nature-based tourism, alternative tourism and ecotourism. There is a closeness to nature in rural areas, it is often an educational experience for tourists who are not familiar with the social fabric of a rural area, and it is now realised the triple bottom line must be managed in a sustainable manner for the future protection of rural areas.

The Commonwealth Department of Tourism in Australia (1994, p. 3) recognises rural tourism as:

Relaxing, sightseeing, camping, visiting friends and relatives, discovering historic towns, travelling to heritage sights of cultural and social significance, visiting museums and art galleries, shopping for local arts, crafts and produce, wining and dining, and attending festivals, rodeos, country shows and local sporting events as examples of rural tourism products and activities. Visitors may also participate in sport (golf, fishing, and local cricket games), hiking in national parks, rafting, skiing, abseiling and caving. Holidays can involve farms, either through agribusiness tours or farm stays. Other visitors may elect to stay in caravan parks, country motels or hotels, bed and breakfasts or backpacker accommodation. Tours can be taken to scenic areas, wildlife reserves, wineries and factories, either for pleasure or educational purposes.

The development of rural tourism has been an evolutionary process on a global scale. In parts of Europe, rural tourism has spread geographically and thematically since the 1980s (Long & Lane, 2000). The increasing demand for adventure and special interest holidays coupled with the rise of the free and independent traveller has enabled an opportunity for many rural regions to attract tourism business. Rural tourism has expanded with a substantial increase in consumer interest in the offerings and benefits of the rural tourism experience and a significant influence of technology that has narrowed the gap between urban and rural tourism marketing and promotion (Long & Lane, 2000). Additionally, tourism as a catalyst in rural change has increased in acceptance by both policy makers and host communities.

It is estimated there are over 1,100 farm tourism properties in Australia, ranging from small farms to large outback remote area properties (Tonge, 2002). There are four main styles of specialist accommodation suitable for the rural tourism sector and include camping grounds, cottages and cabins (self-catering) and farm house accommodation with meals (full board or bed and breakfast style). There are four trends recognised by Long and Lane (2000) as important in the expansion of rural tourism:

1. A trend away from traditional resort destinations – the demand now for mild adventure and special interest holidays coupled with the advent of the ‘free and independent traveller’ in the 1980s has opened opportunities for rural regions to enter the business of tourism.
2. New rural tourism market opportunities – In 1994 the Organisation for Economic Cooperation and Development (OECD) listed current and emerging positive key factors for rural tourism. These included increasing levels of education encouraging exploration and outdoor learning; interest in heritage, tradition, authenticity and rural life; the search for personal contact in a world of mass travel; a positive appeal to rural lifestyle and values such as fresh air for the health conscious; a growing interest in traditional country cooking and specialty foods; the search for solitude and relaxation in natural places; and an ageing but active population travelling well in retirement.
3. Enabling technologies – accessibility to and from rural areas has been transformed with the technology of fax, email, websites, telephone and services
4. Acceptance of tourism in rural change – it is now an accepted practice to diversify the farm product, often with tourism helping to compensate the traditional farm activities. As well, tourism can help justify and fund conservation of the natural and human heritage of an area.

Farm tourism can be considered a sub-sector of rural tourism and has been developed primarily for its economic benefits and represents a symbiotic relationship for areas where neither farming nor tourism could be independently justified (Inskeep, 1991 cited in Busby & Rendle, 2000). Sustainable development of the natural, built and cultural heritage of a rural community’s tourism economy is necessary to frame any potential tourism product diversification. The future growth of the rural tourism sector is certain and there is reason to believe that this will in the future be implemented in a more sustainable manner than the various tourism sectors of the past.

1.4.6 The Nature-Based Tourism Nexus

Alternative tourism, ecotourism and rural tourism can all be classed under the banner of nature-based tourism and as subsets of sustainable tourism (Cater, 2004). There are common elements between these styles of nature-based tourism and the styles of accommodation. The specialist accommodation sector within these three styles of tourism are characterised by being small scale, and based on the natural environment as the setting and backdrop to the visitor experience. There is an understanding that these styles of accommodation need to maintain an ecologically sustainable approach in order to provide an authentic nature-based experience now and in the future.

Tourism is Queensland's fastest growing industry contributing an estimated \$6.3 billion to the Gross State Product (Office of Economic and Statistical Research, 2002). The Queensland Government has recognised the potential benefits that nature-based tourism, rural tourism and ecotourism can offer to the tourism industry, the environment and destination communities. It is this recognition that lead to Queensland producing the first Ecotourism Plan (1997, revised in 2002) and Rural Tourism Strategy (1994) in any state in Australia. However, MacMillan and McInnes (2004) indicate only one in five international visitors is motivated to travel to a destination specifically for an ecotourism experience. Tourism Research Australia (2005b) indicates over 60% of domestic and international travellers within Australia participate in nature-based activities whilst holidaying. For these reasons it can be generalised that more travellers are interested in nature-based tourism, alternative tourism and rural tourism rather than ecotourism as a niche market.

1.4.7 Specialist Accommodation Operations

A number of authors have attempted to define styles of accommodation that are conducive to the nature-based tourism sector (Morrison, et al, 1996; Wight, 1997; Beeton, 1998). Beeton (1998) although focusing on the ecotourism sector, asserts that nature-based accommodations tend to reflect the character of the region, are small scale and locally owned, they have a high guest-host interaction, do not need to be clustered around major attractions, there are local employment opportunities, and other economic benefits for the

local community including the purchasing of local goods and services. The definition of a 'specialist accommodation' operation as developed by Morrison, et al (1996, p. 29) has five key qualifying criteria that distinguish this style of specialist accommodation from mass tourism accommodation styles. These are:

1. A personal interaction between the guests and the owner hosts;
2. A special opportunity or advantage to guests is offered through location, features of the establishment, or services;
3. Special activities are offered to guests;
4. Owner-operated; and
5. Small guest accommodation capacity (generally less than 25 rooms).

Specialist accommodation has also been referred to as boutique accommodation (McIntosh & Siggs, 2005), small or micro-business accommodation (Vernon, Essex, Pinder & Curry, 2003). The term specialist accommodation has the advantage of being "a generic, non-elitist, and integrating expression" and indicates a set of unique styles and types of accommodation that reflects in part, specific segments of the travel market that have "unique motivations, needs, expectations and vacation activity preference" (Morrison, Pearce and Moscardo, 1996, p.20). An examination of the hosts and guests experience of boutique accommodation establishments in Nelson on the South Island of New Zealand revealed five key dimensions including "unique character, personalised, homely, quality and value added" (McIntosh & Siggs, 2005). Similarly, Wight (1997) emphasises it is the nature-based experience which determines the consumer's accommodation choice - tourists choose the environment they want to experience, and then they choose the type of specialist accommodation and price range. Guests will choose their specialist accommodation based on several criteria including location, the quest for something unique or personal, limited accommodation choices, the hospitality or service provided that the guest has heard about through word-of-mouth, and the price (Dickman & Maddock, 2000).

Specialist accommodation is not a new phenomenon in many global destinations. Certain types of specialist accommodation have operated for centuries and as early as the 1700s and 1800s in the United States and Europe (Warnick & Klar, 1991; Buchanan & Espeseth, 1991). The industry is much younger in Australia with the farm stay sector only evolving since the 1970s (Hall, 2007). Getz, Carlsen and Morrison (2004) recognise that a family tourism business venture applies to micro-businesses such as B&B and farm stay establishments. McKercher (1998) brings attention to the fact that small businesses predominate in the nature-based tourism sector and most of these are run by owner-operators and families.

Previous research of small business and micro-business operators classify many of these people as entrepreneurs often with motivations for a desired lifestyle (Morrison, et al, 1996; Ateljevic & Doorne, 2000). Many of these operators will limit the scale and scope of their business in order to balance environmental sustainability with economic performance (Ateljevic & Doorne, 2000). The investigation of owner-operated businesses in rural areas of Western Australia (WA) by Getz and Carlson (2000) identified farm stays (25.1%), campground/ resort/ self-catering (22.6%) and bed and breakfast operations (21.4%) as the three main accommodation styles commencing operations in the last ten years in the Margaret River region of WA. Their research suggests owner-operators of these small mostly farm-based family businesses were mainly middle-aged business people possibly with rural roots or connections. A study of 317 small tourism businesses in New Zealand supports previous knowledge of the prominence of this size of business with over a third of the sample being small predominantly home-based accommodation (Ateljevic, 2007 forthcoming). These home-based accommodations include bed and breakfast, farm/ home stays, cottages and other self-contained accommodation. Operators employed three people or fewer, had high levels of formal education, and 90% had operated for ten years or less (Ateljevic, 2007 forthcoming).

It is difficult to estimate the size and scope of the specialist accommodation sector within Australia or Queensland. Only establishments with more than 15 rooms or units are

reported by the Australian Bureau of Statistics (ABS) every three years for “holiday flats, units and houses of letting entities with 15 or more rooms, caravan parks with 40 or more powered sites and visitor hostels with 25 or more bed spaces” (ABS, 2005b). In 2007, there were 1,689 caravan parks across Australia with 40 or more powered sites and cabins, flats, units and villas. In total, caravan parks had 32,540 cabins, flats units and villas on these properties (ABS, 2007). Licensed hotels are classed as establishments with five or more rooms and licensed to operate a public bar. Figures from the ABS (2007) indicate there are 1,269 licensed hotels across Australia with five or more rooms to let; 3,615 motels and guesthouses with 5 or more rooms; and 426 visitor hostels with 25 or more bed spaces. Data for other styles of specialist accommodation are not identified or collected at all by the ABS. Home-based small businesses defined as a small business operating at home or from home with less than 20 employees also do not extract small tourism accommodation, however in 2004 there were 268,000 home-based small businesses operated at home, the majority being non-employing businesses (68.8%) and over 70% had been in operation less than ten years (ABS, 2004).

In Queensland, an establishment with less than three rooms is only required by local government to register the business with the council health and safety department for an annual inspection and approval to operate. The Australian Bed & Breakfast Council (ABBC) estimates there are more than 5,000 B&B establishments across Australia, with more than 80% located outside capital cities (cited in Hossain, 2004). There is other evidence of increased bed & breakfast and other specialist accommodation through membership listings of tourism and accommodation associations within Australia. These suggest a rapid development and diffusion of various styles of specialist accommodation within the past two decades.

With beginnings in Tasmania for its restored historic homes and South Australia to support the development of wine regions, specialist accommodation businesses have now spread throughout many regional and rural areas of Australia. These smaller, more specialist forms of accommodation can influence a guest’s experience of the region in a wider spatial

and temporal sense. Many specialist accommodation establishments tend to be located in small towns, rural landscapes, or historical settings where having 'local' or 'hosts' insight is invaluable (Mitchell, Hall & McIntosh, 2000; Warnick & Klar, 1991 cited in McIntosh & Siggs, 2005). The styles of accommodation identifiable within the specialist accommodation sector are bed and breakfasts (B&B), guesthouses and tourist homes, country inns, stately homes and mansions, country cottages and cabins, farm stays, dude ranches, wilderness and nature retreats, boutique inns and hotels, houseboats and health farms, ecolodges, retreats and spas, backpacker hostels, caravan and camping sites, yachts and cruising vessels (Morrison *et al*, 1996; Beeton, 1998). Specialist accommodation tends to be more interactive where there is a larger range of activities for guests such as rainforest walks, swimming and wildlife viewing to attract a nature enthusiast, whereas traditional accommodation provides more static facilities and infrastructure, for example golf courses, gymnasiums and tennis courts (Beeton, 1998).

Wight (1997) initially distinguishes an ecotourism accommodation style in the form of non-fixed roof (hammocks and tent camps) or fixed roof, and then clarifies the accommodation style as either resource situated or non-resource situated. The accommodation is then rated from a primitive to luxury experience. Figure 1.1 illustrates the accommodation spectrum adapted from the works of Wight (1997). The focus of this research is comparable to the resource situated styles of fixed roof accommodation. These include the primitive, rustic and comfortable accommodation styles conducive to the specialist accommodation sector as defined by Morrison, *et al* (1996); Pearce and Moscardo (1992); Moscardo, Morrison and Pearce (1996); and Beeton (1998).

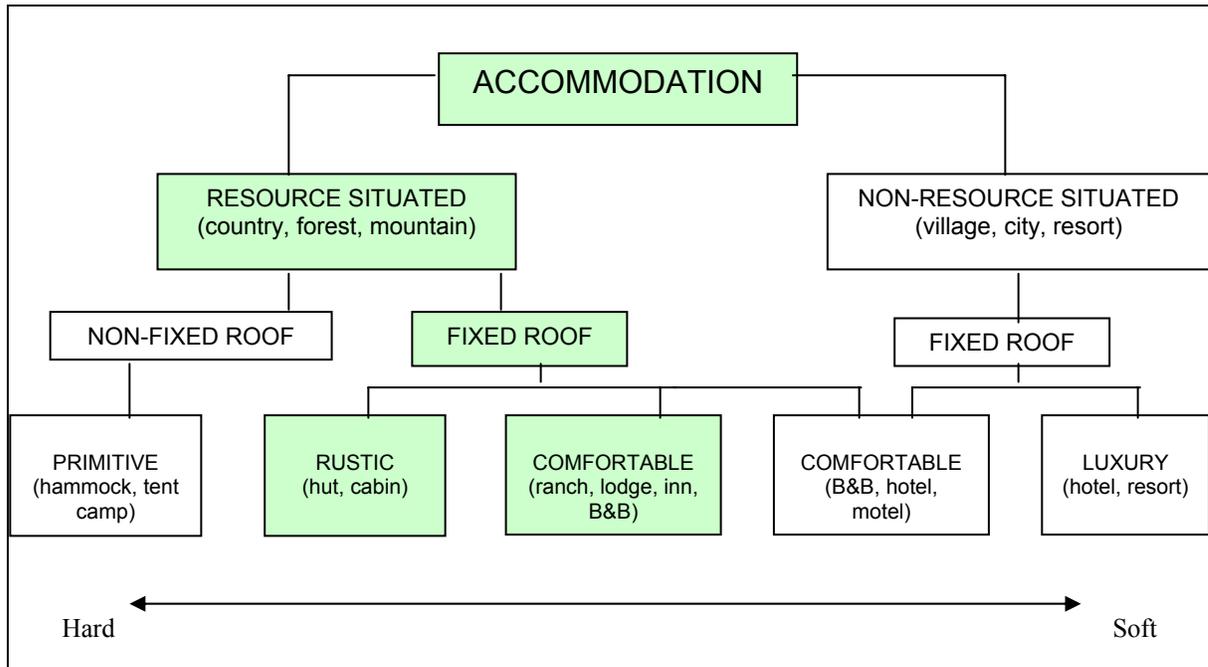


Figure 1.1: Ecotourism Accommodation Spectrum (Wight, 1997)

The accommodation operations examined and discussed in this study are ecolodges; spas and retreats; bed and breakfasts; farm stays; cottages and cabins, guesthouses and home stays; caravan, cabin and camping accommodation; backpacker hostels; houseboats and public licensed hotels. Public licensed hotels are included in the study due to these establishments generally being small-scale (less than 25 rooms), they reflect the character of the region and their proximity to protected areas and budget pricing may entice a nature-based tourist to choose this form of accommodation in order to experience the natural attractions of an area. Motel, hotel and resort accommodations typical of the mass tourism market were not included in this research study.

Table 1.3 provides a brief summary of the key defining characteristics of specialist accommodation operations and identifies previous notable research undertaken for each style. A detailed discussion of the nature and purpose of these accommodation styles assembled from previous research, includes a synopsis of the distinguishing features and

target markets of this nature-based and ecotourism accommodation sector is provided at Appendix A.

Table 1.3: Definitions of Specialist Accommodation Styles*

Category	Characteristics	Previous Key Research
Ecolodge	Nature-dependent lodge that meets the philosophy and principles of ecotourism; local materials used in construction; sustainable environmental and social practices employed; vernacular appearance of accommodation blends with environment.	Mehta, Baez & O'Loughlin (2002); Osland & Mackoy (2004); Russell, Bottrill & Meredith (1995)
Health Spas & Nature Retreats	Small scale; intimate; designed to put people back in touch with nature; emphasis on relaxation and rejuvenation.	Douglas, N. (2001); Pearce & Moscardo (1992)
Bed and Breakfast (B&B)	Small scale (generally less than ten rooms), privately owned, resident host, personal contact and hospitality skills of operator important; serve breakfast only and included in the room rate. Various styles of B&B accommodation attached and unattached to the host accommodation.	Nuntsu, Tassiopoulos & Haydam (2004); Miciak, Kirkland & Ritchie (2001); Dickman & Maddock (2000); Lanier, Caples & Cook (2000); Australian Bed and Breakfast Council (1997); Pearce & Moscardo (1992)
Farm Stay	Accommodation on working farm in main homestead or separate renovated working quarters; small scale; resident hosts; opportunity for guests to participate in farm activities.	Nilsson (2002); Busby & Rendle (2002); Pearce (1990); Oppermann (1998); Slaughter (2004)
Caravan & Camping Parks	Affordable forms of accommodation for free & independent self-drive travellers; may provide powered and unpowered caravan and camping sites and/ or on-site cabins (villas); separate amenities blocks, often used as base to explore area.	Mings (1997)
Cottages and Cabins	Small scale self-contained individual accommodation; often catering for the couples market, some family market; breakfast may or may not be included in the tariff; breakfast hampers often given to the guest on arrival.	Pearce & Moscardo (1992); Morrison, Pearce, Moscardo, Nadkarni & O'Leary (1996)
Backpacker Hostels	Budget accommodation for backpacker travellers on extended holidays; emphasis on fun and friendly environment;	Pearce (1990); Loker-Murphy & Pearce (1995); Loker-Murphy (1996)
Houseboats	Individual vessels suitable for calm water cruising with accommodation, amenities and cooking facilities aboard; emphasis on water-based activities	Kokkranikal & Morrison (2002)
Licensed Public Hotels	Small to medium scale; generally more than fifty years old; typically the Australian 'country pub'; location, distinctiveness and value for money are key attributes; historical character	Pearce & Moscardo (1992); Morrison (1996)

*Adapted and modified from Pearce and Moscardo (1992)

1.4.8 The Wet Tropics World Heritage Area

Within Australia, protected areas include World Heritage Areas, national parks, nature reserves, state recreation areas, marine parks, Ramsar wetlands and other sites of ecological significance. A protected area is defined by the International Union for Conservation and Nature (IUCN) as “an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means” (IUCN, 1994, p.7). To manage protected areas effectively requires a defined set of policies operating under various management organisations. The international guidelines for protected areas delineated by the IUCN, state the protected area categories should be defined by the objectives of management rather than the title of an area or the effectiveness of management in meeting those objectives (Worboys, *et al.*, 2001). Seven IUCN Protected Area Management Categories are identified in Table 1.4. The majority of the Wet Tropics World Heritage Area (WTWHA) contains National Park (IUCN Category II) protected areas.

Table 1.4: IUCN Protected Area Management Categories

Category Ia	Strict Nature Reserve: protected area managed mainly for science
Category Ib	Wilderness Area: protected area managed mainly for wilderness protection
Category II	National Park: protected area managed mainly for ecosystem protection and recreation
Category III	Natural Monument: protected area managed mainly for conservation of specific natural features
Category IV	Habitat/ Species Management Area: protected area managed mainly for conservation through management intervention
Category V	Protected Landscape/ Seascape: protected area managed mainly for landscape/ seascape conservation and recreation.
Category VI	Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems.

Source: IUCN (1994)

World Heritage areas designated by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) encourage the protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity (UNESCO, 2005). Globally there are over 800 designated World Heritage listed sites of significance.

Within Australia there are 16 World Heritage Areas (WHA) with five of these located in Queensland. This research is focused on specialist accommodations located near the Wet Tropics World Heritage rainforests of North Queensland.

The Wet Tropics World Heritage Area (WTWHA) of North Queensland covers 894,420 hectares of tropical rainforest and extends from Townsville in the south to Cooktown in the north and west across the Atherton Tablelands to Ravenshoe. The rainforests of the Wet Tropics were inscribed to the World Heritage List in 1988. There are approximately 2,500 adjoining property owners to the Wet Tropics World Heritage Area's 3,000 kilometre boundary and approximately 300 separate parcels of privately owned land within the Wet Tropics WHA (Wet Tropics Management Authority, 2003). While 80% of the Wet Tropics are managed by the Queensland Parks and Wildlife Service (QPWS), another 300 landholders own or manage 800 square kilometres of the WTWHA. These tenure arrangements require a public/ private partnership to ensure management of the area is successfully undertaken. To maintain this partnership, WTMA support three stakeholder liaison groups: the Conservation Sector Liaison Group (CSLG), the Tourism Industry Liaison Group (TILG) and the Landholders and Neighbours Liaison Group (LNLG). As well, a network of trained volunteers coordinated by the Queensland Parks and Wildlife Service (QPWS), provide assistance with bird counts, revegetation, cleanups, walking track maintenance, interpretative displays, children's activities and public assistance (Wet Tropics Management Authority, 2004a).

Key National Parks included in the Wet Tropics World Heritage Area (WTWHA) are Daintree National Park from Cape Tribulation to Mossman Gorge, Crater Lakes National Park, Lake Barrine National Park, Mount Hypipamee National Park, and Millstream Falls National Park on the Atherton Tablelands; Wooroonooran National Park, south of Cairns; and Black Mountain National Park and Cedar Bay National Park south of Cooktown (Environmental Protection Agency, 2003). State Forests also included in the Wet Tropics are Tam O'Shanter State Forest and Clump Point State Forest near Mission Beach and Danbulla State Forest on the Atherton Tablelands.

Protected areas, and especially national parks and World Heritage Areas, are important destinations for national and international nature-based tourists. Worboys, *et al* (2001) estimate protected areas throughout Australia receive more than 60 million visitors per year with most visiting for recreational purposes. According to Hatch (1998) the prime motivations for visitors to protected areas are to see sites of natural beauty, to see wildlife in a natural setting, and to be close to nature. The conservation of both natural and cultural resources plays an important role in humanity's well being (Worboys, Lockwood & De Lacy, 2001). Protected area agencies for each Australian state are responsible for the ecological integrity of national parks and other areas of faunal and floral significance. Responsibilities for the protection and conservation of natural and cultural sites also extend to commercial tourist operations and free and independent travellers (FIT). Visitation to the Wet Tropics World Heritage Area is estimated at 4.4 million visits per year with 70% of these visitors going to WTWHA sites north of Cairns (Bentrupperbäumer, 2002). Approximately 350,000 people live within 50 kilometres of the World Heritage boundary and recent estimates of visitation to the region are two million people per year (Bentrupperbäumer, 2002).

Strategies have been put in place to help manage the WTWHA with its various and diverse stakeholders. The *Wet Tropics Management Plan* (1997) is an intergovernmental agreement plan recognising the ecological, cultural and social importance of the Wet Tropics area. This plan briefly explains that specialist rainforest-focused accommodation on private lands may be proposed by land holders within the WTWHA, specifying that accommodation should be sympathetic to the values of the Area, with preference being for this style of visitor infrastructure to be located on land neighbouring the WTWHA. Following the *Wet Tropics Management Plan*, the *Wet Tropics Nature Based Tourism Strategy* (WTMA, 2000) was produced to guide the development and management of nature-based tourism within the WTWHA. At the time, tourism was estimated to generate over \$750 million each year in the area (Driml, 1997) and again recognised the importance of tourism stakeholders and defined the various areas of tourism visitation within the WTWHA. It is recognised that while the Strategy principally addresses nature-based tourism on public lands, the presentation of World Heritage values is encouraged by private

landholders (WTMA, 2000, p. 6). This *Nature Based Tourism Strategy* is principally concerned with the impacts of tour operators accessing visitor sites within the Wet Tropics boundaries. The *Wet Tropics Walking Strategy* (2001) also highlights the cooperation needed by stakeholders (i.e. WTMA, land managers, walkers, Aboriginal people and the tourism industry) to manage the diverse range of walking tracks in the WTWHA including responsible tourism use.

Most recently, the *Wet Tropics Conservation Strategy* (2004) evaluates the major threats to the WTWHA and how landholders, the community and WTMA can help address these threats. This Conservation Strategy outlines actions to achieve the conservation, rehabilitation and transmission to future generations of the environmental, social and cultural values of the WTWHA. Of relevance to private landholders providing tourism accommodation and neighbouring the WTWHA is the objective to conserve and promote the environmental and social values of the area to the visiting public. Recommendations appear to address the issue of environmental management and conservation however they fail to specifically detail how to achieve best practice in a practical manner.

A range of academic tourism studies have been previously undertaken in the Wet Tropics World Heritage Area (WTWHA) of North Queensland that concentrate on the growth and future management of tourism (Chester, 1995; Carmody, 1999); the economic value of the WTWHA (Driml, 1997); and the perceptions and future sustainability of the area from various stakeholder perspectives (Bentrupperbäumer & Reser, 2000; Hardy & Beeton, 2001a & 2001b; Dredge & Humphreys, 2003). Most of these studies have predominantly examined the northern section of Daintree National Park in the Wet Tropics World Heritage Area, an area of environmental significance from the access point at the Daintree River north to the Bloomfield River, including Cape Tribulation. This is a unique area of high ecological value, having numerous landholders with a variety of tenures and significant increases in visitor numbers.

Bentrupperbäumer and Reser (2000) present to date the most comprehensive research undertaken within the Wet Tropics World Heritage Area to understand the community's values and visitor attitudes of this ecological phenomenon. The research comprised of a visitor survey of 2,500 visitors at ten key visitor sites from 2001-2002, and a community survey of 788 residents living in 70 regional towns and suburbs from 2002-2003. The results indicate there is a strong recognition of the environmental and social benefits from the location and protection of the WTWHA including contributing to quality of life as an integral part of the landscape, lifestyle and community. Strongest concern from the community related to the current standard of feral pest management and management of human activities both within and outside the WTWHA boundaries.

There is a paucity of research about the specialist accommodation sector of North Queensland within and surrounding the WTWHA. Of particular interest is the lack of research concerned with detailed environmental management practices implemented by tourism accommodation operators in consideration of the high biodiversity and ecological values of the WTWHA. Lee (2002) examined the environmental management practices of three ecotourism certified accommodation facilities in and near the WTWHA. Positive visitor reactions to these practices being in place were significantly associated with the visitor's evaluation of the influence these environmental management practices have on their enjoyment. Lee (2002) also found an awareness and participation in environmental management practices by visitors to be considerably related to their environmental attitudes and behavioural intentions.

The three geographical areas for the research are the Daintree region (Douglas Shire), Atherton Tablelands (Atherton, Eacham, Mareeba and Herberton Shires) and Mission Beach region (Johnstone and Cardwell Shires) of the Wet Tropics World Heritage Area (Figure 1.2). These three areas of the WTWHA are all regions that have experienced growth of the nature-based tourism industry and to support this growth, there has been a noticeable increase in the availability of specialist accommodation operations available to

the free and independent traveller since the 1990s. Individual maps of each of local Council Shires depicting the WTWHA are provided at Appendix E.

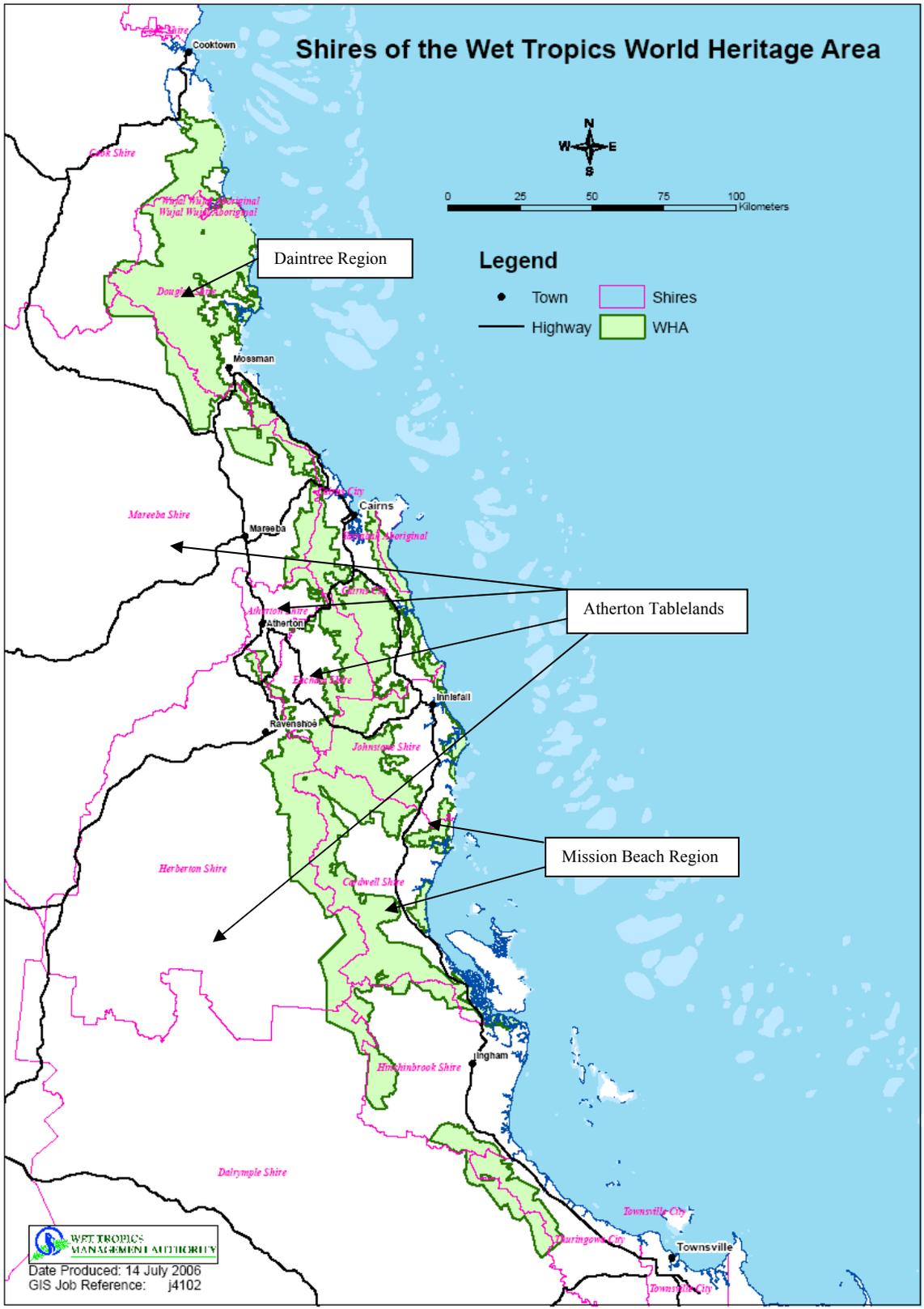


Figure 1.2: Map of Wet Tropics World Heritage Area (WTWHA), Council Shires and Regional Areas of Research

1.5 Aims and Objectives of the Thesis

The aim of the research project is to examine the environmental management techniques presently used by the specialist accommodation sector, specifically those operations located near the WTWHA and other protected areas in North Queensland. In particular, the ecologically sustainable practices implemented by the operators of these establishments and the environmental attitudes of the specialist accommodation operators are investigated. The key research question guiding this thesis is:

How do specialist accommodation operators located near protected areas manage and protect the environment?

Specifically, the objectives of the research are to:

1. Identify the environmental management techniques used by specialist accommodation operations near protected areas in North Queensland.
2. Assess the environmental attitudes of specialist accommodation operators to understand their level of environmental concern.
3. Review environmental guidelines currently recommended by regulatory bodies (i.e. protected area management agencies, local councils, tourism and accommodation associations) for specialist accommodation operations near protected areas.
4. Recommend best practice environmental management techniques for regulatory bodies and specialist accommodation operations near protected areas.

A number of research questions were developed to further define the key research objectives of this study.

Objective One – Environmental Management Techniques

- a) What environmental management techniques do specialist accommodation operators implement?
- b) Are there differences in environmental management techniques used by the various styles of specialist accommodation operations?
- c) Is environmental monitoring of the surrounding area undertaken by specialist accommodation operators?
- d) Is environmental education and interpretation provided to guests by specialist accommodation operators?

Objective Two – Environmental Attitudes

- a) Are specialist accommodation operators located near protected areas pro-environmental?

Objective Three – Environmental Certification

- a) Do specialist accommodation operators have environmental certification? Why/why not?

Objective Four – Regulatory Agencies

- a) How do environmental management agencies of protected areas interact with the specialist accommodation sector located near protected areas?
- b) Are local councils supportive of environmental management techniques and do they provide assistance with environmental guidance for the specialist accommodation sector in their shire?
- c) Do tourism and accommodation associations encourage best practice environmental management techniques to specialist accommodation operations?

1.6 Scope of the Thesis

The scope of this thesis can be defined by the geographical location of the research in the Wet Tropics WHA, the seven local council shires of the study area, the environmental management techniques investigated, the style of specialist accommodation examined, and

the measurement of environmental concern held by the operators of these accommodations using the New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000). This study is primarily an exploratory study of the specialist accommodation sector in Far North Queensland and their contribution to the conservation and protection of the Wet Tropics World Heritage rainforests and other protected areas.

Specialist accommodation operations neighbouring or located within 50 kilometres of the Wet Tropics WHA in Far North Queensland are focused upon in three regional locations surrounding Cairns - the Atherton Tablelands, the Daintree and Mission Beach areas. These geographical areas of research will be referred to as the Atherton Tablelands, Daintree region and Mission Beach region throughout the remainder of this thesis. These sub-regions are managed by the seven local council shires of Atherton, Herberton, Eacham, and Mareeba on the Atherton Tablelands; Douglas in the Daintree region; and Johnstone and Cardwell shires in the Mission Beach region. Town planners from the local council shires were selected for their assumed knowledge of the planning requirements and probable interaction with the specialist accommodation operators.

The number of specialist accommodation operations within these geographical areas, although a rapidly emerging sector of the region, is limited. The styles of specialist accommodation included in the research are bed and breakfasts (B&B), farm stays, guest houses, licensed public hotels, ecolodges, retreats, houseboats, cabins, cottages, and caravan parks.

The environmental management techniques implemented by the specialist accommodation operators are based on the environmental certification standards proposed by Ecotourism Australia, Green Globe 21 and AAA Tourism. Previous literature investigating specific environmental management techniques in tourism accommodations were also consulted (Boele, 1996; Buckley & Araujo, 1997; Carlsen, Getz & Ali-Knight, 1998; Firth & Hing, 1999). The environmental management techniques are grouped under water management, energy management, liquid waste and solid waste management, sustainable design and

other sustainable practices. The suitability of voluntary land agreements and environmental certification for specialist accommodation are also explored within the research. The thesis is concerned with environmental management techniques, environmental attitudes and ecological sustainability. Socio-cultural sustainability is beyond the scope of this thesis.

1.7 Overview of the Thesis Structure

This chapter has provided an introduction to the research topic. In particular, sustainable tourism and nature-based tourism are considered as an umbrella for the subsets of alternative tourism, ecotourism and rural tourism. The similarities between these tourism styles are followed by an introduction to the specialist accommodation sector. The various styles of specialist accommodation operations conducive to the nature-based tourism sector are defined and key characteristics of the accommodation styles explained. The research is geographically located around the Wet Tropics World Heritage rainforests of North Queensland and an overview of its significance and the environmental authorities responsible for the protection and conservation of an area of such high ecological value were explained. A more recent form of environmental management initiatives are voluntary land agreements undertaken by private freehold land owners in cooperation with regulatory agencies.

The second chapter of the thesis provides a literature review of the key focus areas of the research. Best practice environmental management techniques recommended for small-scale tourism accommodation operations are discussed. The second main focus of the research is the environmental attitudes held by the owner-operators of the specialist accommodation operations. The New Ecological Paradigm developed by Van Liere, Dunlap, Mertig and Jones (2000) is discussed and subsequently used to measure the ecological worldview held by specialist accommodation operators in the study. In order to encapsulate the link between environmental management behaviours and environmental attitudes, the Framework of Environmental Behaviour (Barr, 2004) is presented and tested.

The third chapter presents the methodology employed to investigate the specialist accommodation sector of Far North Queensland. A multi-method approach was taken, involving self-administered surveys of specialist accommodation operators and tourism associations. Personal interviews were conducted with a sample of owner-operators of the surveyed specialist accommodation establishments, local government town planners and planning staff at environmental regulatory agencies. The limitations to the research strategies employed are discussed. The quantitative and qualitative methods of data analysis employed are explained.

The results of the research are presented in chapters four and five. Using the New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000) and the Framework of Environmental Behaviour (Barr, 2004) the attitude-behaviour correlation of specialist accommodation operations located near protected areas in North Queensland are measured. Barr's (2004) model identifies demographic, psychological and situational factors which accordingly impact upon the sustainability of specialist accommodation operations.

Chapter Four provides both the quantitative and qualitative results gathered from the specialist accommodation operators included in the research sample. In particular, the implementation of environmental management practices, characteristics of the operation and operators, perceptions of environmental certification programs, and the environmental attitudes of the specialist accommodation operators located near protected areas of North Queensland are presented. Measurement of the environmental attitudes was undertaken with the New Ecological Paradigm as developed by Dunlap, Van Liere, Mertig and Jones (2000).

Chapter Five is concerned with the regulatory bodies and agencies affecting the specialist accommodation operations near protected areas in North Queensland. Results are presented from qualitative interviews conducted with the relevant local shire council town

planners and the Wet Tropics Management Authority (WTMA). Tourism and accommodation associations are also deemed a regulatory stakeholder within the specialist accommodation sector and the results of a quantitative survey enquiring about the environmental policies and codes of these associations are presented.

A discussion of the results from Chapters Four and Five are presented in Chapter Six. It discusses the results as defined by the objectives of the research in order to answer the key research question of this thesis, “How do specialist accommodation operators located near protected areas manage and protect the environment?” The mixed method approach of quantitative and qualitative data collection and analysis techniques with the owner-operators of specialist accommodation, staff at environmental regulatory agencies and local council town planners elicited a range of internal and external barriers to sustainable practices that should be taken into consideration for the future planning and regulation of the specialist accommodation tourism sector near protected areas.

Chapter Seven concludes the thesis, presenting a summary of the research. The significance and contribution of the thesis are discussed followed by the implications for future research, theory and practical policy applications of environmental management techniques for specialist accommodation operations located near protected areas to maintain ecological sustainability.

1.8 Summary

There are several reasons why this present study explores the environmental management techniques in use by specialist accommodation operators in North Queensland. Specialist accommodation operations are a rapidly expanding nature-based tourism sector within Australia. These styles of accommodation are contributing to the expansion of tourism in regional and rural areas and by demand are providing educational opportunities for tourists to experience areas of high ecological importance.

There is a limited understanding of the specialist accommodation sector and their contribution to ecological, social and economic sustainability within a community. Although environmental codes of practice and certification have become synonymous with sustainability and the future protection of natural areas, the reasons for the uptake of these codes and the implementation of environmental management techniques is relatively unexplored. Previous research (Tourism Research Australia, 2005) has shown nature-based tourists are interested in enjoying the natural attractions of an area for extended periods of time rather than brief encounters. The specialist accommodation sector helps meet these needs. These visitors are motivated by rest and relaxation and the opportunity to experience nature in pristine environments. How these specialist accommodation operators are contributing to the protection and conservation of these natural areas and their perceptions of sustainable environmental management is explored.

CHAPTER 2: ENVIRONMENTAL MANAGEMENT TECHNIQUES & ENVIRONMENTAL ATTITUDES

Structure of the Chapter

2.1 Introduction

2.2 Environmental Management

2.3 Case Studies of Best Practice Environmental Management

2.4 Regulation of Environmental Management

2.5 Environmental Attitudes

2.6 The Environmental Attitude-Behaviour Correlation

2.7 Summary

2.1 Introduction

For nature-based tourism operations to progress towards sustainability, the reasons for the implementation of environmental management techniques and an understanding of the environmental attitudes held by the owner-operators of tourism businesses located near protected areas are fundamental. This chapter reviews the published literature on environmental management techniques adopted within the small to medium size accommodation sector and examines the attitude-behaviour correlation deemed necessary for the transmittal of environmental concern into the implementation of actual environmental behaviours. The New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000) is an appropriate measurement instrument to examine an individual's ecological worldview. The nexus between environmental management behaviour and the environmental attitude held by an individual are also explained with the Framework of Environmental Behaviour (Barr, 2004).

2.2 Environmental Management

The term 'best practice' originated through business organization theory in the manufacturing industry, followed by the services sector, natural resource management and

most recently, the tourism industry. Pigram (1997a) stipulates ‘best practice environmental management’ is a means of achieving sustainable growth through different organizational structures and attitudes, bringing about continuous improvement in a firm’s environmental performance. The concept of sustainability within the tourism sector implies meeting current uses and demands without impairing natural and cultural heritage systems or future opportunities for their collective enjoyment. Environmental excellence is fostered by management practices which incorporate new, cleaner technologies, and has an emphasis on resource conservation, recycling, reuse and recovery, in continuous progress towards sustainability (Pigram, 2000b).

Tourism can act as a “vehicle for promoting environmentally and socially responsible attitudes and behaviour” (Hawkes & Williams, 1993, p. vii). Four principles should be recognised at the tourism planning and development stages (Goodall & Stabler, 1997) enabling future activities to sustainably interact with the environment:

1. Treat the environment as natural capital
2. Exercise the precautionary principle in the absence of conclusive scientific evidence
3. Use resources wisely to retain environmental quality
4. Employ a ‘polluter must pay’ principle (for past or existing activity)

There is a suite of environmental management techniques suitable for the greening of the specialist accommodation sector to achieve ecological sustainability. Within the development stage of a specialist accommodation facility, sustainable design and sustainable use and disposal of water, energy, and waste need to be considered. Once the facility is operational, the implementation of environmental codes of conduct or voluntary environmental practices is highly recommended. Environmental education and interpretation offered to the guest, as part of the tourism experience, will further encourage the conservation and preservation of nature-based destinations (Beaumont, 1998; Crabtree & Newson, 2000). The evaluation of environmental management techniques in place and the continuous monitoring of flora, fauna, feral pest and human impacts should become a

routine exercise that ensures minimal impact on the natural environment and protected areas.

The key principle of environmental management is to minimize negative impacts and maximise positive benefits. If nature-based tourism accommodation operators are intending to express a conservation ethic and concern for the environment, a close examination of internal practices such as environmentally sensitive infrastructure development, efficient use and conservation of natural resources, waste disposal and management, recycling, air quality and emissions, green purchasing policies, and locally produced foods and goods should be considered (Wight, 1993). Similarly, Tourism Queensland (2002) identify energy and water conservation, solid and liquid waste management, litter, erosion, noise minimisation, natural light, fuel and chemical storage, vegetation damage, weeds and feral animals, and appropriate visitation to national parks as environmental management techniques that should be of concern to tourism operators.

Carlsen, Getz and Ali-Knight (1998) studied the environmental management techniques for family owned rural tourism operations in Western Australia. All of the members of the Augusta-Margaret River Tourist Association were surveyed during 1997. A response of 198 useable surveys found more than 90% of the operations were family businesses and three-quarters of these operated predominantly farm stays, bed and breakfast operations and campground/ self catering styles of accommodation on their property. The environmental practices examined were water conservation procedures, recycling of materials, guest education on conservation matters, the elimination of non-organic chemicals, targets for waste reduction and energy conservation and the use of alternative non-polluting energy sources. The results indicated water conservation (although reflecting dry conditions and restrictions prevalent in Western Australia), recycling of materials and educating guests on conservation matters were rated most highly as improving the environmental performance of their business operation by the tourism operators. These authors also speculate a test of commitment to green practices is membership in conservation groups and found 31% of businesses had membership, mainly with local conservation groups.

The environmental management performance of 580 accommodation providers on the Gold Coast in Queensland, where accommodation is predominantly concentrated along a narrow coastal strip of 25 kilometres was examined by Buckley and Araujo (1997). Actual practices of energy and water conservation, recycling and the use of disposable, refillable and reusable items by the accommodation provider were explored. Resorts and holiday clubs, hotels, motels, motor inns, apartments, holiday units, hostels and backpacker accommodation, caravan parks and campgrounds with overnight cabins and houseboats were targeted for the study. There were 31 hotels, 38 motels and 125 apartment complexes that completed an anonymous return mail survey resulting in a 42% response rate, but of interest are the results suggesting the use of recycling programs (65% of respondents), energy-efficient light-bulbs (84%) and water-saving shower heads (65%) are commonly adopted. Buckley and Araujo (1997) conclude environmental performance measures are adopted principally to cut costs at hotels, motels and apartments, rather than increase gross revenues by targeting environmentally concerned customers. Similarly, Knowles, MacMillan, Palmer, Grabowski and Hashimoto (1999) suggest London hotel managers although recognising the need for environmental management, are more likely to only advance their environmental performance actions in order to satisfy the company objectives.

A study by Firth and Hing (1999) of all six backpacker hostels located in Byron Bay, New South Wales found basic and easy to implement eco-friendly practices were actioned. Face-to-face interviews with a manager from each of the six hostels investigated 30 practices related to water conservation, energy efficiency, transportation, eco-friendly shopping, recycling and environmental philosophy. The provision of low flow showerheads, energy efficient light bulbs, microwave ovens, recycling bins, and free public transport for guests were implemented the most. Insightfully, only one quarter of the 60 backpackers interviewed indicated they would select an eco-friendly hostel if this was advertised in brochures and backpacker magazines and only one hostel had advertised itself as eco-friendly aiming to set a good example for its guests (Firth & Hing, 1999). However, Buckley and Araujo (1997) suggest advertising environmental performance could well prove fruitful.

To the best of the author's knowledge, comparisons of environmental management practices being implemented in small to medium accommodations across countries are not available. Previous studies of this type have concentrated on Australia however the following sections do elaborate on the adoption and rejection of environmental management practices by hospitality businesses internationally.

2.2.1 The Adoption of Environmental Management Practices in Tourism

When considering the dynamics of the tourism industry, Carter, Whiley and Knight, (2004) deem voluntary approaches to environmental management practices as more appropriate for small businesses than command-and-control mechanisms due to legislative and policy complications and the small but cumulative nature of tourism impacts from this size of business. Likewise, Vernon, Essex, Pinder and Curry (2003) indicate many of these smaller tourism operations tend to have a limited realisation of their individual and collective impacts on the environment, and where environmental measures had been implemented, financial and altruistic factors were important considerations in adopting environmental best practice. However, issues such as a lack of knowledge and resources, compliance obligations and consumer recognition can have a significant impact on the extent to which environmental management systems and practices are effectively implemented in the small tourism business (Carter, et al, 2004). To voluntarily adopt environmental best practice techniques "can be reduced to two, not necessarily exclusive extremes: motives driven by economic" reasons and motives driven by an individual's personal ethics (Carter, et al 2004, p. 54).

A number of arguments have been proposed for the adoption of environmental management practices. It is suggested small scale tourism firms tend to adopt a green approach for one or more reasons. The results presented by Carlsen et al (1998), Buckley and Araujo (1997) and Firth and Hing (1999) identify easy-to-implement and less-costly environmental management practices are implemented predominantly for the purpose of reducing costs by various accommodation sectors of the tourism industry within Australia.

Tzschentke, Kirk and Lynch (2004, p. 118) found owner-managers in the small serviced accommodation establishments of Scotland primarily adopted sustainable measures to be economical and supported the idea of “reducing costs by increasing levels of operational efficiency”. The use of energy saving devices such as low energy bulbs and extra insulation was implemented due to the inability to exert control over a guest’s use of energy. Social responsibility or ethics were also a prime reason behind the adoption of sustainable practices by the tourism sector albeit, “the responsible thing to do” (Tzschentke, et al 2004; Donovan & McElligot, 2000; Horobin & Long, 1996).

Implementing voluntary initiatives for environmental sustainability relies largely on whether participants believe the benefits will outweigh the costs. Peters and Turner (2004, p. 462) found in their study of waste minimisation for 60 small to medium businesses in two United Kingdom industrial estates that village based businesses were more interested in their contribution to the “well-being of the local community and the quality of the ambient environment”, but industrial estate businesses had a greater interest in “potential cost savings and efficiency advantages”. Similarly, a study of attitudes to environmental management by 85 independent and consortium hotel managers in Edinburgh indicated strongest support for the improvement of public relations and their relationship with the local community. Additionally, hotels with a written environmental policy were more likely to link environmental management with increased profitability and advantages for marketing their hotel as well (Kirk, 1998). Often these are chain hotels having a corporate environmental policy and action plans with the availability of more financial resources enable this style of business to pursue environmental management practices more readily (Bohdanowicz, 2005).

Schaper and Carlsen (2004, p. 207) determined “the simplest environmental improvement programs, and those with the greatest obvious financial return, are more likely to be undertaken than more complex measures whose benefits are hard to quantify”. Others have indicated compliance with licensing or regulation, external pressures from consumers and the general community, and meeting compliance guidelines or codes of conduct are reasons

for the adoption of environmental management practices in the tourism industry (Middleton & Hawkins, 1998; Schaper & Carlsen, 2004).

The desire to conserve natural assets and resources is cited by Carlson, et al (2001) and Middleton and Hawkins (1998). This is often the reason for many small family businesses in rural areas establishing a tourism accommodation venture and indicatively these operators have a strong personal interest in heritage and nature conservation. “It is in the long-term self interest of business proprietors to extend and sustain renewable resources before such depletion damages their own survival” (Schaper & Carlsen, 2004, p. 199)

It appears from previous research there are four main motivations for the adoption of environmental management practices. Firstly, to reduce costs (Buckley & Araujo, 1997; Firth & Hing, 1999) particularly implementing basic and easy to install techniques. Secondly, there is a desire to conserve natural resources (Middleton & Hawkins, 1998; Carlsen et al, 2001) and it is hypothesised this is directly related to the level of environmental concern held by the specialist accommodation operator. Thirdly, compliance with legislative requirements or association codes of conduct may dictate the implementation of environmental management techniques (Middleton & Hawkins, 1998; Schaper & Carlsen, 2004). Lastly, there is a desire to “act as good neighbours” (Tzschentke, et al, 2004, p. 114), that is, having a social responsibility or ethics towards the sustainability of the environment (Donovan & McElligott, 2000; Middleton & Hawkins, 1998).

2.2.2 The Rejection of Environmental Management Practices in Tourism

Various reasons have been proffered for a slow, minimal or zero adoption of environmental management practices in the tourism industry. There is often a genuine concern for the environment from individuals, but there remains an issue as to why some individuals do not adopt easy to implement environmental actions or those that require little change in lifestyle and habit (Barr, 2004). For the small home-based tourism business sector, the

adoption and operationalisation of environmental management techniques may appear difficult. Limited resources, knowledge and expertise are indicated as impeding the improvement of environmental practice implementation by many small businesses (Vernon, et al, 2003; Donovan & McElligott, 2000). Related to a lack of knowledge, there is complacency and perceptions that any improvements might have minimal environmental effects (Barr, 2004; Hillary, 2000). The benefits of improved environmental performance in the form of potential financial gains, marketing advantages, or other benefits may also not be easily identifiable for many small firms (Hillary, 2000). The perceived costs of changes may act as a disincentive, and operators may genuinely be unable to raise the capital necessary to fund any change in environmental practices (Barr, 2004; Donovan & McElligott, 2000; Wei & Ruys, 1999). There may be those too who are willing to accept some environmental damage in order to increase their personal income (Dewhurst & Thomas, 2003).

Others speculate there are many small tourism operators who establish tourism ventures to support their lifestyle goals. If there is a conflict between the maintenance of lifestyle or environmental management practices for conservation, the lifestyle will often win (Carlsen et al, 2001). Furthermore, a lack of membership with a tourism or trade association may result in many small tourism operations remaining unaware of current best practice environmental management options (Stabler & Goodall, 1997). Donovan and McElligott (2000) also identified in the Irish hotel sector, operators who deemed the implementation of an environmental management program to be time consuming, displayed a lack of interest or had the perceptions of reduced service quality.

The above are all internal factors which may affect the improvement or implementation of environmental management techniques; however, there are two external factors also considered to impede the adoption of environmental management practices by tourism accommodation operations. Firstly, climatic conditions and geographical location will affect the type and extent of environmental management practices that can be installed

(Buckley, 2003; Barr, 2004). Secondly, the availability and access to municipal waste and water infrastructure needs must be considered (Buckley, 2003; Barr, 2004).

Why small tourism firms often fail to adopt best practice environmental performance, or even simply improve their performance beyond the current levels has been explained by predominantly internal and external factors. Costs, knowledge, personal perceptions and external factors have explained various reasons for the limited implementation of environmental management practices by small tourism operations. Reviews of specific environmental management techniques for water conservation, energy management, sustainable design, waste management, and other sustainable practices are provided in Sections 2.2.3 to 2.2.7. Voluntary land agreements are also discussed as a method for future environmental sustainability.

2.2.3 Waste Management Hierarchy

Waste minimisation is the use of management methods for systematically reducing waste emissions to land, water and air (Environmental Technology Best Practice Programme, 1996a cited in Bates & Phillips, 1999, p. 582). The control of wastes is essential for a sustainable society and the future preservation of natural resources. Australia has a relatively high production of solid waste amongst OECD countries, second only to America in per capita production of municipal waste (Healey, 1999). The best approach to waste management is to avoid producing waste in the first place and therefore cleaner production, reuse and recycling are the key to minimising resource consumption and landfill demand (Scott and Watt, 2001, cited in De Lacy, Battig, Moore and Noakes, 2002).

A waste management hierarchy (Healey, 1999) sets out clear priorities for sustainable resource use and waste management, with the emphasis placed strongly on reducing the amount of raw material used. The hierarchy (Healey, 1999; Allen, 1994, cited in Bates & Phillips, 1999) can be summarised from most desirable to least desirable options:

AVOID – the most effective way to minimise waste.

REDUCE – the main priority for sustainable waste management involves the reduction or minimisation of waste at source. For example, purchasing goods in bulk reduces packaging waste and replacing disposable products with durable options.

REUSE – this involves putting objects back into use so they do not enter the waste stream. Examples include refillable drink and food containers, exchanging of clothes, furniture and other goods. Reuse is differentiated from recycling because products and materials are not reprocessed in a manufacturing cycle.

RECYCLE – involves the use of secondary materials in the production of new items. Examples include composting, worm farms and the separation of recyclable items (e.g. glass, aluminium, paper) for collection.

RECOVERY – involves the recovery of energy from waste materials, incorporates material recycling, composting and the recovery of heat energy from the process.

DISPOSAL – this is the least attractive waste management option, usually landfill or incineration. This option has rising financial and environmental costs particularly in destinations where landfill space is limited.

The environmental benefits of waste minimisation are conservation of resources, reduced pollution, improved amenity of the natural environment, increased community awareness and education, and decreased risks of public health concerns. The cumulative effect of these benefits will lead to increased conservation of the environment for future generations (Healey, 1999).

Thompson and Mooney (1998) explored and compared the incentives and impediments to waste minimisation in nine backpacker hostels and fifteen hotel establishments in Rotorua, New Zealand. Waste minimisation encompassed the reduction in solid waste output, and the conservation of water and energy. Incentives identified by the backpacker accommodation and hotel managers to encourage waste minimisation were the provision of additional council collection and recycling services, financial incentives and local government pressure on businesses. Managers from both sectors agreed personal ethics

and the promotion of a positive company image were motivating factors for reducing or recycling waste.

2.2.4 Energy Conservation Management

Energy conservation management measures generally fall into two categories (Dale & Kluga, 1992). Operations and maintenance procedures can be incorporated to reduce energy use often at a low or no cost and usually have a payback period of one year or less. Secondly, energy conservation measures include installing, replacing or modifying energy systems and have a payback time of two to seven years (Dale & Kluga, 1992). Energy conservation management practices may appear along a continuum from easy to implement and less costly techniques to innovative technologies using alternative sources. Examples of easy to implement alternatives include energy efficient light bulbs, the installation of ceiling fans only without air conditioning, and guest education in the benefits of turning off lights when they are not in use. Technology and innovation has contributed to smart tag energy systems (similar to a room-light master switch), solar energy for heating and power, co-generation, wind and water generated energy techniques. Cogeneration is the process of combined heat and power generation where heat produced during the generation of electricity is used to provide heating of space or water or can energise absorption chillers. There are examples of those using heat generated from motors for the heating of swimming pools and hot water systems, therefore reusing surplus energy.

Within smaller accommodation facilities, energy efficiency can be influenced by a variety of methods. The selection of energy efficient appliances, insulation and double-glazed windows minimise heat flows, and natural shade from trees will assist cooling, energy sources other than mains electricity (preferably solar), and the encouragement of guests to walk or cycle where possible will help reduce greenhouse gas emissions (Crabtree & Newson, 2000). Many of these specialist accommodation operations are comparable to the size of an average household within Australia, often having similar appliances and room

size. Household energy consumption accounts for nearly 12% of the final energy consumed within Australia (ABS, 2005a).

A study by Curtis (2002) of 52 tourist hotel and resort managers in the Cairns region, Queensland, examined perceptions of environmental performance, energy efficiency techniques implemented, renewable energy installations, waste management practices, environmental management practices and interpretation of the natural environment in terms of assessing carbon dioxide emissions. Curtis (2002) ranked energy techniques from excellent to poor as shown in Table 2.1 and found only an ‘average’ environmental performance within the hotel and resort sector (based on a descriptive statistics of the scores); emphasising minimal attempts at energy efficiency measures by the large hotel sector.

Table 2.1: Energy Efficient Technique Rankings

	Energy Efficiency Technique
Excellent	Automated system; central controls on lighting and air conditioning; some renewables; cogeneration
Better than Most	Energy savers; limited air conditioning; limited appliances and luxury items
Average	Minimal attempts at efficiency
Below average	No energy savers; fully air conditioned; spas
Poor	High energy users; no efficiency measures taken

Source: Curtis (2002)

Research by Becken, Frampton and Simmons (2001) of energy consumption by various tourism accommodation styles (e.g. hotel, B&B, motel, backpacker hostel and campground accommodation) shows hotels are the largest energy consumers in the accommodation sector in New Zealand. B&Bs, backpacker hostels and campgrounds consumed the least energy although the ‘comfort-oriented accommodation’ of B&Bs consumed “approximately three times the amount of energy per visitor-night than more basic alternatives” (Becken et al., 2001, p. 382).

Energy efficiency of both Ecotourism Australia eco-certified and non-certified hotels, eco-resorts and caravan parks located at the Gold Coast, Sunshine Coast and Cairns in Queensland were investigated by Warnken, Bradley and Guilding (2005). From a sample of 31 properties, energy efficient techniques in order of implementation were gas hot water systems (45%), energy efficient lighting (35%), demand driven energy use control systems (26%), energy efficient appliances (16%) and solar hot water (6%). Importantly, Warnken, et al (2005) note the determination of environmental best practice is not always straight forward. There is a need to consider the general mode of accommodation operation, the type of product provided to the guest, existing infrastructure and local climatic conditions in combination with each other. For example, building layout and geographical location will influence the types of energy efficient techniques that can be put into place.

Recent research of renewable energy systems within the Australian tourism industry (Baldock, Tomkins, Dalton, Skyliss-Kazacos & Kazacos, 2006) explored consumer/ community attitudes towards renewable energy and the factors influencing operational viability. Responses from 40 accommodation establishments with a minimum of three to 470 rooms were received from remote areas of Australia. 17% reported certification with Ecotourism Australia; none were affiliated, benchmarked or certified with Green Globe. Hotels, motels and stations comprised the majority of the sample, with solar/ genset power systems being the most common method of stand alone power generation. The study by Baldock, et al. (2006) shows motels, stations and tourist operators located in ranges/ downs/ tablelands regions have higher levels of interest in renewable energy supply systems. This is often based on long term cost savings and ethical reasons rather than marketing benefits. No interest in the installation of renewable energy systems were cost related, particularly the initial purchase and installation costs. Lloyd, Lowe and Wilson (2000 cited in Baldock, et al., 2006, p. 40) have previously recognised, a “lack of knowledge informing the most appropriate power source based on renewable energy for a location and its availability” are considered to hinder the uptake and adoption of renewable energy in remote areas.

2.2.5 Water Conservation and Management

Previous research of best practice water conservation management techniques for small and medium tourism accommodations is scant. However, some information can be gleaned from previous research of water efficiency in larger hotel and resort establishments. The conservation of water is becoming a necessity within Australia and many other global destinations. Beeton (1998) speculates one third of all water consumed within accommodation establishments is for the purpose of toilet flushing. To reduce water consumption the use of dual flush toilets, reduced flush toilets or dry composting toilets are possible water management techniques. Others recommend water efficient devices to lessen water usage such as front loading washing machines, low flow shower heads, tap aerators, or the installation of flow control washers (Kavanagh, 2000; Bells, 1997). Wei and Ruys (1999) indicate large Australian hotels with more than 200 rooms have implemented measures for water conservation by monitoring usage of water through control fittings, water flow equipment and by increasing staff awareness of the need to minimise water consumption. However, there are many guests who do not appreciate the use of water saving shower heads or requests to remove air conditioning room key tags whilst the room is vacant, particularly if they have higher expectations related to the room price (Turner, 1997).

The successful implementation and practical usage of some water conservation techniques will be dependent on site-specific locations, whether a site is already established or whether it is at the design stage, and the expectations of the guest (Kavanagh, 2000). Recommendations for water management in remote destinations to be sustainable include rainwater collection and use; grey water separation; dry composting toilets; cleaner water use practices; and water reuse (Kavanagh, 2000). Kavanagh (2000, p. 32) suggests the combination of dry composting toilets and grey water treatment and reuse, is the ultimate sustainable practice because “treatment requirements are minimised and water, nutrients and biodegradable materials are reused”. The regular maintenance of tap washers is highly recommended, as is the planting of native plants that require minimal watering.

Recently the provision of recycled water for urban residential purposes has been explored by Hurlimann and McKay (2006). Their research has focused on an “innovative greenfields development” located at Mawson Lakes, South Australia. The reclaimed water is used for toilet flushing and garden irrigation. However, the acceptance of this practice depends largely on the attitudes of the communities involved (Hurlimann & McKay, 2004), specifically trust in the water authority and knowledge of the dual water supply system contribute to community acceptance (Hurlimann & McKay, 2004). Grey water includes waste water from all non-toilet sources (i.e. laundry, bathroom and kitchen). Reuse of grey water directly onto gardens and lawns for irrigation is a growing common household practice particularly where drought conditions are being experienced in Australia. Recommendations are for the use of biodegradable washing detergents to be used in combination with this practice, where grey water separation and storage is not implemented. A recommendation for the sustainable reuse of grey water for irrigation is that it occurs only in warm dry weather (Environmental Protection Agency, 2001, cited South East Water, 2006).

2.2.6 Sustainable Design

Sustainable design is the art of designing physical objects to comply with the principles of economic, social and ecological sustainability (Ji & Plainiotis, 2006). Sustainable building design or passive design goes further than minimising adverse environmental impacts; it should bring authentic natural and cultural experiences into the built environment (Bells, 1997). Hyde and Law (n.d.) point out environmentally sustainable design involves an awareness of sustainability in the context of the geographic location, based on prevailing conditions that guide design outcomes. To ensure harmony between tourism development and environmental protection, a holistic approach to ecologically and socially conscious planning and site design, design of infrastructure and landscaping, is indispensable (De Lacy, Battig, Moore & Noakes, 2002). A sustainable building design should be guided by climate where natural systems can provide for human comfort and less consumptive lifestyles (Bells, 1997). However, the application of environmentally sustainable design will often require large financial resources and where budget constraints exist, competent

design professionals are rarely involved (Hyde & Law, n.d.). This is the case for most owner-operators of small specialist accommodation operations (Andersen, 1993).

The accommodation and facilities of a nature-based tourism operation are an integral part of the backdrop and stage for the guest experience. These aspects should be harmonious with the cultural and natural landscape of the environment (Gardner, 2001). Andersen (1993) suggests the natural setting is the best inspiration source for the environmentally sensitive design of facilities. Therefore site-specific building design will support the guest experience and awareness of the environment, gaining and appreciation of the environmental values of an area. A good building design will use minimum energy, produce minimal waste and cause minimal site disturbance (Cock & Pfueller, 2000).

Careful planning of site location and aspect for buildings should take advantage of the climatic conditions of the area (Gardner, 2001). Passive solar design is when the siting of a building takes advantage of natural sunlight and airflows for a comfortable environment (Boele, 1996). Energy generated by solar, wind and water will provide ecological and economic benefits to the operator and the environment. An observation of the behaviour of natural animals on a site should be undertaken to plan a facility without disturbing the habitat and behavioural patterns (Andersen, 1993). Water is one of our most precious resources and as such methods of water conservation and recycling are necessary for future generations. Reducing, reusing and recycling waste are also necessary to reduce the amenity impact on the physical setting. Table 2.2 offers sustainable alternative options for energy, water and waste management which should be considered in the design of a specialist accommodation establishment.

Buildings designed on ecological principles will have shape and colour in harmony with the natural surrounds and consideration should be given to site aspect for the capacity to store and protect from heat. Ventilation needs to be controlled by appropriate placing and the style of openings rather than air conditioning, and natural light should be used where

possible for illumination (Cock & Pfueller, 2000). In addition, building supplies should be purchased locally, adding authenticity to the structure and by promoting local employment.

Table 2.2: Alternative Accommodation Infrastructure Options

Energy	Passive and active solar, wind, water, geothermal, tidal, building siting to take advantage of prevailing wind climates
Water	Non-potable flushing, grey water collection, reverse osmosis supply, roof collection, sewage treatment recycling and reduction in consumption
Waste Management	Composting toilets, biological treatment, greenhouse filtration, recycling, glass and aluminium crushing, commercial collection of raw materials (glass, aluminium, paper and cardboard)

Source: Gardner (2001)

Sustainable building design minimises adverse environmental impacts whilst bringing authentic natural and cultural experiences into the built environment. There should be a connection to the surrounding environment through the design, materials, location and openness and should demonstrate a design appropriate for the local climate and involve natural systems that provide for human comfort and less consumptive lifestyles (Bells, 1997).

2.2.7 Sustainable Practices

The implementation of sustainable practices within the tourism accommodation sector has received some attention in recent years (Stabler & Goodall, 1997; Buckley & Araujo, 1997; Crabtree & Newson, 2000; Epler Wood, 2002; Dewhurst & Thomas, 2003; Warnken et al, 2005). For the scope of this thesis, other sustainable practices include: purchasing policies; gardening and conservation practices; guest education; cleaning practices; the monitoring of feral pests and weeds; employment of local residents; and the use of local goods and services. These practices have been sourced from Ecotourism Australia’s EcoCertification Program and AAA Tourism’s Green STAR programs.

Many sustainable practices will complement existing sustainable methods of water, energy and waste conservation. Guest education and interpretation is generally considered paramount to ensuring a guest understands the value of the environment and will hopefully take home something learnt and implement or follow environmental sustainability in their own area of residence (Beaumont, 1998; Moscardo, 1999; Crabtree & Newson, 2000). Guest education materials can be provided in a number of ways at small accommodation establishments. For example, signage in bathrooms requesting less towel and linen changes can help conserve water and energy, the provision of native flora and fauna books for guest reading, and labelling of botanical species on purpose created forest walks. Possibly having the most impact though, is conversations held between hosts and guests about sustainable practices.

Gardening and conservation practices often have the dual purpose of water conservation (for example mulching of gardens in combination with drip irrigation rather than sprinklers will reduce water loss through evaporation by wind and sun). Other examples include revegetation of areas with native species which will require less watering, reduce erosion, increase native habitats and stem weed invasion. Composting as a waste management strategy will have the dual purpose of recycling biodegradable waste and creating garden fertiliser. There is also recognition of the benefits of using biodegradable cleaning products, particularly in environmentally sensitive areas, reducing the potential for toxic cleaning residues entering natural water courses and threatening native wildlife and flora. The monitoring of feral weeds and pests by accommodation operators in conjunction with environmental authorities should aid in the control of devastating potential environmental impacts that may occur within an area. As postulated by ecotourism principles and environmental certification agencies (e.g. Ecotourism Australia; Green Globe 21; The International Ecotourism Society; Epler Wood, 2002) the employment of local people and the purchasing of local goods and services will contribute to economic and social sustainability of a community.

2.2.8 Voluntary Land Agreements

Within Australia, private landholders wishing to protect all or part of their land for endemic species and habitat conservation can undertake voluntary land agreements. In the past, voluntary land agreements have been coordinated and operationalised by environmental protection agencies, local government shire councils and are now under the guidance of Greening Australia in some states. There are various voluntary land agreements available to landowners for consideration including Commonwealth Management Agreements, Conservation Management Agreements, Land for Wildlife, Nature Refuges and Conservation Covenants. Recently, the state government and local government councils in Queensland are encouraging voluntary land agreements to their constituents as a way of further protecting natural resources and key habitats on private land. More than 95 landholders across Queensland manage nature refuges on their properties and 24 of these properties were within the Wet Tropics World Heritage Area protecting 5679 hectares of ecologically significant land (Environmental Protection Agency, 2004).

The promotion of local community ‘ownership’ and direct involvement in the protection and enhancement of biodiversity may help arrest the decline of social and ecological conditions in rural areas and encourage more sustainable activities (Bushell, Staiff and Conner, 2002, p. 33). Bushell *et al* (2002) postulate these styles of voluntary community involvement in land conservation mechanisms through stewardship and public/local partnerships will increase the prevalence of environmental and cultural values and key habitats necessary for successful nature-based tourism. The three most accepted voluntary land agreements (i.e. Nature Refuges, Land for Wildlife and Cooperative Management Agreements) available to private landowners in Australia, and particularly Queensland are discussed in detail and provided in Appendix B.

In North Queensland there is an increasing incidence, albeit slow to adopt, for specialist accommodation operations to protect part or all of their land under a voluntary conservation agreement. Private landholders can play a vital role in providing and maintaining native

wildlife habitat on their properties. This benefits the tourism consumer as well where the protection of native habitats encourages wildlife to use the area and consequently allows the observation of wildlife in a natural setting. An exploratory study of environmental management techniques used by tourism operators in Douglas Shire, North Queensland by Carmody and Zeppel (2004), revealed approximately 15% of the Douglas Shire is protected by voluntary land agreements on private lands (for example, Land for Wildlife and Nature Refuges). This equates to 152 hectares of protected private land of high ecological significance in the Wet Tropics World Heritage Area. Only three Nature Refuge land holders used their land for tourism purposes in the Douglas Shire. There are private landholders in North Queensland protecting tree kangaroo and cassowary corridors, platypus habitats and raptor breeding sites. The benefits of a voluntary land conservation agreement to the individual can carry incentives by way of land tax rebates, fencing if required and professional information regarding the faunal and floral requirements for the type of habitat. Generally the voluntary land agreement will be attached to the land title deed, which in effect if the property is sold, subsequent owners can not destroy or further develop the land in question by way of clearing or environmental degradation.

In Wisconsin, United States of America, Forshay, Morzaria-Luna, Hale and Predick (2005) elaborate on the success and landholder satisfaction with a Wetlands Reserve Program that has converted 80,000 hectares of agricultural land to wetlands. This federally funded program allows farmers to “retire marginal land from agriculture by establishing conservation easements on their property in exchange for financial incentives” (Forshay, et al, 2005, p. 248). The realisation that the loss of freshwater wetlands to agriculture had caused widespread ecological devastation and loss of social value led to the establishment of the Wetlands Reserve Program. Three easement options are available to the farmer based on the US Department of Agriculture (USDA) paying a percentage of the agricultural value of the land and undertaking the cost of restoring the wetlands and uplands based on involvement from the farmer. The options can be permanent, 30-year or 10-year agreements with the farmer retaining private ownership of the land. Forshay, et al, (2005, p. 254) found landowners were motivated to enrol in this program to “protect the environment, economic incentives and recreational opportunities” and that new landowners

(that is, those who bought land with a WRP attached) were influenced to purchase the land for recreational opportunities and environmental concerns.

Voluntary land agreements for conservation are beneficial to the environment, native wildlife, and to the private landholder providing specialist accommodation facilities on their property. Apart from some economic benefits, the conservation of wildlife corridors and natural habitat for native species preserves not only the present environmental values of the area but also future benefits within the life of a voluntary land agreement. Voluntary conservation mechanisms rather than environmental regulation will often achieve better and more equitable conservation outcomes (WTMA, 2004a).

2.3 Case Studies of Best Practice Environmental Management

Since the late 1980s, the implementation of best practice environmental management has become evident in the tourism industry. Beginning with the identification of ecolodges and their contribution to sustainability followed by the release of best practice guides and eco-certification, there are a number of case studies highlighting environmental management practices deemed suitable for future sustainability in nature-based tourism. Selected case studies are reviewed to illustrate various environmental management techniques adopted for water, energy, waste, sustainable design and other sustainable practices. Acknowledgement of environmental certification standards attained is also provided for each case study. The four Australian case studies evaluated are Couran Cove Resort, Daintree Wilderness Lodge, Jemby-Rinjah Lodge and Kingfisher Bay Resort. Although Couran Cove Resort and Kingfisher Bay Resort located in Queensland, and Jemby-Rinjah Lodge located in the Blue Mountains, New South Wales are not specialist accommodation (i.e. they have more than 25 rooms and not owner-operated), these case studies provide examples of sustainable environmental management practices and principles of sustainability in use. The Daintree Wilderness Lodge in North Queensland has ten cabins raised above the rainforest floor connected by aerial walkways and is an example of a sustainable specialist accommodation.

2.3.1 Couran Cove Resort

Couran Cove Resort on South Stradbroke Island located off the coast of south-east Queensland is an example of a large purpose built sustainable accommodation facility. Opening in December 1997, the planning initiatives took into account the style of accommodation most suitable to the climate and fragility of the natural environment resulting in the construction of eco-cabins designed to blend in with the surroundings. The island is a naturally occurring sand island with a large range of plant communities including rare *Livistona* rainforest.

Couran Cove is a large ecotourism resort covering 151 hectares, consisting of 192 marine apartments, 50 beach lodges, 25 broadwater villas and 300 eco-cabins. Extensive consultation with state and local government ensured the developers of Couran Cove Resort gave consideration to energy and water supply, the disposal of liquid and solid waste, pest management, environmental education and community involvement (Department of the Environment and Heritage, 1997; Lim & McAleer, 2005).

Table 2.3: Environmental Management Techniques at Couran Cove Resort

	Environmental Management Techniques
Energy management	Gas power supplemented by wind turbine; heat from generator for heating pool and hot water in cabins;
Water management	Fresh groundwater charged by rainfall via bore; off site laundry;
Waste management	Waste management hierarchy implemented; bulk purchasing (less packaging); organic waste to on site worm farm (becomes fertiliser); tertiary treatment of sewage (used for irrigation); guests encouraged to separate waste; extensive recycling; all waste to mainland;
Other sustainable practices	Extensive revegetation & rehabilitation program; environmental education of guests; native tree planting;
Environmental Certification	Advanced Ecotourism (Ecotourism Australia)

Source: Lim & McAleer (2005)

The conservation initiatives implemented at Couran Cove Resort have had a secondary purpose of raising community awareness, whilst the two energy techniques of liquid

petroleum gas (LPG)-power and wind turbine are estimated to “have reduced greenhouse emissions by 70% of diesel-equivalent generation methods” (Lim & McAleer, 2005, p. 1434). Guests are encouraged to monitor their energy and water consumption at their eco-cabin and are rewarded with prizes (e.g free return trip to the resort) for low usage levels based on benchmark standards. The benefits of environmental education in tourism have been espoused by a number of authorities (Epler Wood, 2002; Crabtree & Newson, 2000; Moscardo, 1999). Couran Cove has enlisted a range of environmental and cultural initiatives, focused around an interpretative centre and guest incentives (e.g. native tree planting). Initiatives include “guided nocturnal and rainforest walks, interpretative beach walks and astronomy tours” (Lim & McAleer, 2005, p. 1435). The interpretative centre provides education officers and complements resort signage to increase guest knowledge of the impacts of wildlife feeding, the island’s indigenous history, maritime history and environmental significance (Lim & McAleer, 2005).

2.3.2 Daintree Wilderness Lodge

The Daintree Wilderness Lodge near Cape Tribulations is on eight hectares of freehold land surrounded by the World Heritage listed rainforests of North Queensland. The Lodge has ten bungalow style cabins linked by walkways raised above the rainforest canopy floor to minimise environmental impacts (CRC Tourism, 2004). Table 2.4 summarises the sustainable environmental management features adopted by the Daintree Wilderness Lodge.

Table 2.4: Environmental Management Techniques at Daintree Wilderness Lodge

	Environmental Management Techniques
Energy management	Fluorescent not incandescent lighting; light building material colours & minimal sun exposure to surfaces; ceiling fans only; wool insulation;
Water management	Spring water via bore; grey water treated in BioCycle (irrigation use); small sinks; low flow shower heads; tap aerators; low flush toilets; guest education on water conservation;
Waste management	Bulk purchasing; use of recyclable packaging; glass & aluminium separated and taken to depot; disposable products avoided; food waste composted;
Other Sustainable practices	Indigenous seeds collected from site for revegetation; regular maintenance

	program; only biodegradable cleaning products free of petrochemicals or phosphates used; cold water laundry on-site; local craft, food & beverages for guests to purchase; interaction with local school, environmental groups and environmental agencies; environmental education provided to guests through guided interpretative walks and information folders; local staff employed.
Environmental Certification	Advanced Ecotourism (Ecotourism Australia)

Source: CRC Tourism (2004.)

Daintree Wilderness Lodge is an example of a sustainable specialist accommodation operation located near a protected area of ecological significance. The owner-operators of this establishment considered from the beginning the importance of minimal impact on the rainforest environment.

2.3.3 Jemby-Rinjah Lodge

Jemby-Rinjah Lodge is located in the World Heritage listed Blue Mountains west of Sydney, Australia. Established on nine hectares of private property, careful consideration was given to minimal impact on the environment. Completed in three stages (Stages 1 & 2 from 1985-1990; stage 3 completed in 1993), Jemby-Rinjah Lodge has nine cabins, three eco-lodges, a main lodge and a conference centre (100 person capacity). The maximum number of guests that can be accommodated is 136 in cabins and 54 in the eco-lodges. Harris and Varga (1995) summarise the environmental management techniques implemented by the developer and operator. The design of the buildings gave consideration to the use of maximum sunlight and natural ventilation and the building materials were selected for durability, aesthetics and environmental impact (Harris & Varga, 1995). Table 2.5 provides a summary of the environmental management techniques used at Jemby-Rinjah Lodge where pole frame structures have a minimal impact on natural ground water movement.

Table 2.5: Environmental Management Techniques at Jemby-Rinjah Lodge

	Environmental Management Techniques
Energy management	Low-energy bulbs; energy-efficient combustion stoves; gas heating for space & water; touch-pad water temperature controls
Water management	Low-flow shower heads; no irrigation due to native plant gardens; treated grey water with evaporation method and underground seepage trench;
Waste management	Self-contained composting toilets; grease trap collection, separation & removal; recyclable waste separation; composting biodegradable waste (used for garden fertiliser); recycled paper products purchased; recyclable ecoglobe light bulbs;
Other Sustainable practices	Biodegradable washing & cleaning products; off-site laundry; disposable guest shampoos not used; purchase local & Australian made products; bulk purchasing (less packaging); local organically grown produce purchased; no pesticides or fertilisers used; recycled timber used in buildings and furniture; local employment and local service contractors used;
Environmental Certification	Advanced Ecotourism (Ecotourism Australia)

Source: Harris & Varga (1995)

Jemby-Rinjah Lodge is an example of an accommodation establishment that has developed in harmony with the surrounding natural environment. The “green living” philosophy subscribed to at Jemby-Rinjah has exposed guests to alternative technologies and practices, consequently educating visitors in sustainable waste and energy management techniques.

2.3.4 Kingfisher Bay Resort

Kingfisher Bay Resort on Fraser Island, Queensland opened in 1992 in the same year as the island was given World Heritage status (Charters, 1996). Fraser Island is the largest sand island in the world, famous for its freshwater lakes, heathlands, woodlands, open eucalypt forests and rainforests. Kingfisher Bay Resort includes a “152 room hotel, 75 residential villas, a 120 bed wilderness lodge” and facilities for day visitors (Charters, 1996, p. 114). Covering 65 hectares of land, the natural environment was the key focus for the Kingfisher Bay Resort developer, Queensland Tourism Industries Limited. The architecture, interior building design and landscaping is all totally integrated into the natural landscape of Fraser Island. Infrastructure all contained within the Kingfisher Bay Resort site includes a power station, sewage plant, waste transfer station, water treatment plant and holding tanks (Charters, 1996). The diesel fuelled generators for the power station were recently replaced

with an underwater power cable from the mainland to abate noise and air pollution levels (Peace, 2005). As a model ecotourism resort, various environmental management techniques were implemented for ecological sustainability (Table 2.6).

Table 2.6: Environmental Management Techniques at Kingfisher Bay Resort

	Environmental Management Techniques
Energy Management	No air conditioning; low energy light bulbs; room key shut-off systems; natural ventilation;
Water Management	Runoff from roads & roofs diverted into lakes; promote water conservation to guests through room tags (i.e. limit laundering of towels);
Waste Management	All solid waste compacted & transported to the mainland; separation of recyclables (paper, glass, aluminium, tin & plastics) transported to mainland;
Other Sustainable Practices	Continuous monitoring of sewage outfall, walking trails, roads, small mammals & other wildlife; local goods & services purchased; local employment; guided & self-guided interpretation walks, 4WD tours & marine tours; green purchasing & green product programs; on-site worm farm;
Environmental Certification	Advanced Ecotourism (Ecotourism Australia)

Sources: Charters (1996); Kingfisher Bay Resort – Fraser Island, Queensland, Australia (n.d.).

Kingfisher Bay Resort was created to provide a nature-based tourism experience and is characterised as a world-first ecotourism resort of its size. Peace (2005, p. 330) suggests the environmental discourse provided to guests is “an exercise in modern myth making” in three ways. First, claims of the ecological sustainable practices in use are derived from traditional indigenous populations is beyond dispute. Second, claims of not transforming the environment during the development stage are refutable. Although the resort is said to ‘sit lightly on the sand’ and ‘integrate harmoniously with it’, the fact is 1600 wooden pylons were sunken 16 metres deep for the foundations of the resort and the landscape bulldozed, rearranged, replanted and reorganised. Third, there is a question of the boundaries of pastoral care and environmental responsibility within the confines of the resort or for the entire island. However, their dedication to environmental tourism has been recognised with the achievement of 35 Australian and international awards for environmentally sensitive development, architecture and environmental tourism (Kingfisher Bay Resort, n.d.).

The four Australian case studies presented indicate a wide range of environmental management practices implemented for ecological sustainability. Although only the Daintree Wilderness Lodge is comparable in size to the specialist accommodation sector, the principles of environmental sustainability from each accommodation are transferable. Consideration must always be given to water conservation, energy management, waste management and other sustainable practices which minimise impacts on the surrounding natural environments.

2.4 Regulation of Environmental Management

There are generally three types of environmental management regulation within the tourism industry. Business self-regulation and industry self-regulation are related to private incentives at the level of the individual business. Government regulation is related to environmental compliance externally imposed by government agencies (Huybers & Bennett (2002). Voluntary self-regulation at the business level can be related to the supply side and demand side of the operation. The supply side pertains to a reduction in costs associated with environmental protection, for example in the areas of energy and water usage and waste management. On the demand side, tourism firms have an incentive to undertake voluntary environmental protection in order to enhance tourism experiences and market green products for increasingly environmentally aware tourists (Huybers & Bennett, 2002). However, the existence of an appropriate individual or corporate ethic is a critical factor in eliciting a proactive response to environmental concerns and the adoption of environmental best practice measures (Carter, Whiley & Knight, 2004; Whiley & Carter, 2002).

Carter, Whiley and Knight, (2004) deem voluntary approaches as more appropriate to the tourism industry than command-and-control mechanisms due to legislative and policy complications and the small but cumulative nature of tourism impacts for small businesses.

According to Carter et al. (2004), within Australia waste generating industries are governed by environmental protection legislation, whereas the service industries such as tourism tend to be characterised by self-regulation. Failure to recognise the heterogeneity of small tourism firms by regulatory bodies will impede the understanding of the business behaviour. Many small tourism firms do not necessarily aspire to maximise economic benefits (Thomas, 2000). It is 'lifestyle' factors and other non-financial factors such as individuals moving to an area for its social and environmental amenities that are often the inspiration for the commencement of small tourism businesses (Thomas, 2000). Beneficially though, an individual in a position of control will have greater opportunities to ensure the sustained adoption of environmental best practice (Carter et al, 2004).

The implication for policy makers from all levels of government is for more explicit support of environmental management processes which contribute to sustainable tourism. Pigram (2000a) states the following:

Agreement on standards and environmental codes of practice, encouragement of environmental audits, and education and awareness programmes, are all part of the role of the public sector in striking a balance between regulation and self-regulation to reinforce the trend toward sustainable tourism development (p. 381).

The environmental performance processes advocated for tourism operations are promoted as beneficial to business by responding to a perceived consumer demand and in remedying operational inefficiencies. Some tourist operations that are resource-dependent and ethically driven possibly react to this perceived demand of community environmental values and will express their adopted environmental ethic through addressing waste, energy and water issues (Carter et al. 2004).

There is evidence of tourism stakeholders increasing commitment to sustainable tourism put forward by tourism associations and academia in the forms of codes of conduct and best practice environmental management standards globally (e.g. World Tourism Organisation; Green Globe), nationally (e.g. Ecotourism Australia, Wildlife Tourism Australia) and

regionally (e.g. Caribbean Alliance for Sustainable Tourism, PATA). Initiatives such as these have resulted in the production of best practice environmental guidelines with many such as Green Globe and Ecotourism Australia offering benchmarking standards and environmental certification of the tourism product. These all recognise environmental commitment, a need to improve environmental performance and the responsibility of environmental stewardship for tourism businesses, especially those businesses that are nature-based (Carter et al. 2004).

2.4.1 Codes of Conduct

Codes of conduct in tourism are generally voluntary self-regulatory benchmarking standards desirable for the future protection and conservation of the natural environment, wildlife or community values. Codes represent a formal recognition that all forms of tourism impact the environment and an acknowledgement that the industry should play a significant role in monitoring and mitigation of environmental impacts. A code of ethics or environmental code of ethics is similar to a code of conduct, being a standard of acceptable performance that ensures adequate protection during the planning, development, or management of tourism (Upchurch, 2000; Dowling, 2000b). There are three issues identified as having a bearing on the adoption of self-regulatory sustainable practices: (1) knowledge of appropriate practices and technologies; (2) a perception that some benefit will arise; and (3) the existence of effective sanctions to ensure an appropriate level of environmental performance is maintained (Griffin & De Lacy, 2002).

Many codes have a relatively broad scope to the cultural, social and environmental dimensions for protection and conservation of the destination targeting individual travellers, tourism association members, host communities and specific sectors of the tourism industry (Williams, 1993). Examples of voluntary environmental tourism codes are the *South African Responsible Tourism Handbook* (2003) and the *Practical Guide to Good Practice: Managing Environmental and Social Issues in the Accommodations Sector* (Sweeting & Rosenfeld-Sweeting, n.d.). Technical advisory codes tend to be specific to industry-sectors setting out how tourism businesses can develop and maintain

environmentally friendly products, operations and activities (Goodall & Stabler, 1997). Examples are the Sustainable Tourism Cooperative Research Centre's guidelines for scuba diving, wildlife interaction, whale viewing, and penguin watching (Buckley, Rainbow & Lawrence, 2002; Rainbow, Warnken & Buckley, 2002).

Codes of conduct seek to create an awareness of the importance of sound environmental policies and management practices. Further, the development of codes of conduct by the tourism industry often delays the imposition of stronger forms of environmental regulation often imposed by government agencies. Goodall and Stabler (1997, p. 295) declare the principles in many environmental codes concentrate on urging the tourism industry to:

- ✓ Use resources sustainably
- ✓ Reduce environmental impacts
- ✓ Reduce waste and over-consumption, for example, by improved water management and recycling of glass, metals and paper
- ✓ Maintain natural and cultural diversity through sensitivity to conservation and respect for local heritage and culture
- ✓ Integrate tourism development into land use planning
- ✓ Adopt internal management strategies and systems, eg environmental auditing
- ✓ Support and involve local economies and host communities
- ✓ Market tourism responsibly

Codes have also been criticised as 'statements of ideals' (Mason & Mowforth, 1995, p. 53), often failing to give practical advice on how to implement best practice at the individual tourism business level (Goodall & Stabler, 2000). Thomas (2000) argues the size of 'small tourism firms' is subjective and should be considered in the focus of environmental tourism policy initiatives based on the number of employees or the number of rooms in an accommodation establishment. Best practice codes should distinguish between the sizes of the tourism business for which it is intended. For example, an owner-operated specialist accommodation business will be influenced by different internal and

external relations than a larger resort, hotel or other tourism business. Williams (1993) states that as public awareness increases for the nature-based tourism industry to conduct its activities environmentally, there is a greater need for tourism associations and individual operators to adopt initiatives directed at creating a sustainable industry.

Criticisms of voluntary codes of conduct are summarised by Shaw and Williams (2002). Firstly, codes have often been implemented merely as a marketing ploy rather than as a genuine attempt to develop sustainable practices (Mowforth & Munt, 1998; Forsyth, 1997). Secondly, there are problems with evaluating and monitoring voluntary codes based on self-regulation (Mowforth & Munt, 1998). Thirdly, due to codes focusing on principles rather than the application of environmental practices, there are limitations in their use (Stabler & Goodall, 1996).

Fundamentally, voluntary codes of conduct should realise that the tourism industry is mostly dependent on the natural environment and to remain sustainable requires setting limits to growth or level of use by stakeholders. Similarly, the tourism industry must realise it is community-based requiring attention be given to the socio-cultural and environmental costs of tourism, and lastly, recognition must be given to the fact that the tourism industry is service-oriented and therefore requires the ethical treatment of customers and employees (Payne & Dimanche, 1996). Williams (1993) proposes the recent development and adoption of codes of conduct particularly in developed countries may represent a shift in community and individual attitudes towards business practice and the environment.

2.4.2 Certification Schemes

Certification is defined as a voluntary procedure that assesses and gives a written assurance that a facility, product, process or service management system conforms to specific standards. A marketable seal or logo is awarded for meeting or exceeding baseline standards (Honey, 2002). Also referred to as eco-labelling (Kozak & Nield, 2004),

certification “aims to encourage businesses to benchmark their product against nominated industry standards, to provide a high standard of interpretation, to encourage the provision of high quality ecotourism experiences and to strive for best practice environmental management” (Issaverdis, 2001, p. 584).

Certification and accreditation are two terms that require definition. Although often used interchangeably, Toth (2002) explains certification is the process of providing a documented assurance that a product measures up to a benchmarked standard. Third-party certification is most common in the tourism industry where the claim of conforming to standards is validated by an organisation not controlled or influenced by the tourism business being certified. The process of certifying the certifier is accreditation. This section refers to certification of tourism businesses.

Honey and Stewart (2002) point out green tourism certification programs can be divided into two methodologies:

1. Process-based using environmental management systems
2. Performance-based using environmental, socio-cultural and economic criteria or benchmarks.

Process-based certification programs are all variations of environmental management systems (EMS) conforming to specifications verified by an audit process (Honey & Stewart, 2002). The best-known EMS standard for “green” hotel or business certification is ISO14001 (Honey, 2003b). The purpose of process-based schemes is to have an acceptable process for developing and revising an EMS, and to set up a system for continuously monitoring and improving environmental performance. Honey and Stewart (2002) conclude ISO14001 and other process-based systems are insufficient by themselves to generate sustainable tourism practices.

Where process-based certification programs set up an EMS for monitoring and improving performance, performance-based programs include a set of benchmarks against which a business is measured (Honey, 2003b). Performance-based certification programs tend to be less costly, allow comparisons among businesses, and are often easier to implement as they do not require the setting up of complex and costly environmental management systems (Honey, 2003b). There are a number of advantages to performance-based certification programs such as the EcoCertification Program (formerly Nature and Ecotourism Accreditation Program) by Ecotourism Australia and Costa Rica's Certification for Sustainable Tourism (CST). According to Honey and Stewart (2002) the advantages of performance-based certification over process-based certification programs are:

- ✓ They measure achievement, not intent, and therefore can promote sustainable development;
- ✓ They are less expensive and more applicable to small and medium size businesses;
- ✓ They include easily intelligible checklists for both businesses and consumers;
- ✓ They allow a comparison among businesses or products;
- ✓ Typically involve a range of stakeholders;
- ✓ Better to meet consumer demand because they can measure performance inside and outside the business and include social, cultural and economic as well as environmental criteria;
- ✓ They offer different levels and encourage competition and continual improvement.

An ecolabel scheme should incorporate four essential components (Buckley, 2001). Firstly, an ecolabel needs global brand recognition, audit procedures and local implementation. Secondly, detailed criteria for different types and scales of tourism industry sectors need to be considered. Third, there should be at least two levels of ecolabel – a base standard and an advanced level; and fourth, the ecolabel needs transparent criteria and procedures detailed and readily available to the consumer. Ecolabel schemes require effective assessment and audit procedures, penalties for non-compliance and clearly defined accreditation criteria. However, within Australia, submissions to the

Commonwealth Government's *Green Paper for Tourism* (2003) regarding accreditation, have pointed out a "lack of consumer awareness about the benefits of accreditation and that operators see no clear incentive to become accredited, especially when there is an annual cost and input of time required for the application process" (Department of Industry, Tourism & Resources, 2003, p. 34).

In their study of owner-managers of small serviced accommodations in Scotland, Tzschentke, Kirk and Lynch (2004) investigated the reasons for seeking environmental certification. All of the interviewees were members of the Green Tourism Business Scheme. Three main considerations evident were the prospect of an added competitive advantage for the business, recognition of their environmental commitment and the respondent's fundamental agreement with the principles of the scheme. Importantly, this was supported by the claim that most operators "shared a concern for the environment and had been environmentally active long before joining the scheme" (Tzschentke, 2004, p. 121). However, linking the licensing of nature-based tourism operations to environmental certification may be perceived as a threat by some small tourism operators who believe the cost of certification will outweigh the marketing or environmental benefits (Issaverdis, 2001).

In summary, process-based certification programs help managers of tourism businesses conduct baseline studies and award a logo based on the creation of systems for ongoing monitoring of environmental targets, whereas performance-based schemes award logos based on the achievement of a set of specific environmental, social and economic equity criteria, benchmarks or standards against which all applicants are measured (Honey, 2002). Honey (2003b) states that tourism companies are increasingly realising voluntary certification programs are a way to ensure they follow best practices in the industry, give them market advantage with consumers, and raise standards within the industry. According to a World Tourism Organisation (WTO) (2001) report (cited in Honey, 2003b), there were 59 comprehensive tourism certification schemes globally, the majority (68%) being for

accommodation. Public or private voluntary ecolabel schemes are relatively uncommon in Australia in any industry sector other than tourism (Buckley, 2001).

Environmental certification schemes benchmarking accommodation in Australia are conducted by Green Globe, Ecotourism Australia and AAA Tourism Green Stars. These three notable environmental certification schemes operating within Australia beginning with Ecotourism Australia's EcoCertification program set up in 1996 have made tourism operators and regulatory agencies mindful of the benefits of implementing good environmental best practice. Table 2.7 provides a summary of three main tourism environmental certification programs operating within Australia. Following Table 2.7 is a more detailed discussion of the requirements for environmental certification in the EcoCertification Program, Green Globe Program and AAA Tourism Green STARS.

Table 2.7: Summary of Environmental Certification Programs

Ecotourism Australia			Green Globe Company Standard*	AAA Tourism Green STARS
	Nature Tourism	Ecotourism/ Advanced Ecotourism	SECTION 1: ENVIRONMENTAL & SOCIAL SUSTAINABILITY POLICY	BEDROOM – Energy efficiency; signage; optional newspaper; printed material on recycled paper; natural ventilation; background lighting; glassware; no change linen option
Business management & operational planning	√	√	SECTION 2: LEGISLATIVE FRAMEWORK	BATHROOM – water saving fittings; recycled paper products; no leaking taps or cistern; ; no change towel option
Business ethics	√	√	SECTION 3: ENVIRONMENTAL AND SOCIAL SUSTAINABILITY PERFORMANCE	RECEPTION – guests informed of environmental incentives; exit surveys; recycled/ unbleached paper products; paper and printer cartridge recycling program;
Responsible marketing	√	√	Key Performance Areas: <ul style="list-style-type: none"> • Greenhouse gas emissions • Energy efficiency, conservation and management 	LIGHTING/HEATING/COOLOING/VENTILATION – energy efficient lighting; energy management program; insulated windows; controlled lighting; controlled heating/ cooling; exterior lighting
Customer satisfaction	√	√	<ul style="list-style-type: none"> • Management of freshwater resources • Ecosystem conservation and management • Management of social and cultural issues • Land use planning and management 	MAINTENANCE AND CLEANING – regular maintenance on all major items; hoses with triggers; lighting fixtures maintained & cleaned; environmentally friendly cleaning products
Natural area focus	√	√	<ul style="list-style-type: none"> • Air quality protection and noise control • Waste water management • Waste minimisation, reuse and recycling 	WASTE – waste separation/recycling program; packaging waste recovered & recycled
Environmental sustainability	√	√	SECTION 4: ENVIRONMENTAL MANAGEMENT SYSTEM	GARDENS & LANDSCAPING – landscaping design minimize water use; grey water reuse/ bore water for gardens;
Interpretation and education	N/A	√	SECTION 5: CONSULTATION AND COMMUNICATION	SWIMMING POOLS – regular maintenance; backwash to sewer; pool lighting turned off when not in use
Contribution to conservation	N/A	√		AIR QUALITY – odour free; totally smoke free facility; majority of rooms non-smoking
Working with local communities	N/A	√		ADDITIONAL FACILITIES/SERVICES OPTIONAL – Green waste composted; alternative energy; solar pre-heating of hot water; solar heating of pool; environmental initiatives
Cultural respect and sensitivity	N/A	√		

*Green Globe has 4 standards – Company; Community/ Destination; Ecotourism; Design & Construct. All standards have 5 levels of certification. Only the Company Standard is referred to for the purpose of this research. Refer www.greenglobe21.com for more information.

Ecotourism Australia

The EcoCertification Program (formerly Nature and Ecotourism Accreditation Program or NEAP) by Ecotourism Australia was launched in 1996 and is a voluntary certification scheme initially developed to recognise and reward “best practice” ecotourism products in Australia (Chester & Crabtree, 2002). Chester and Crabtree (2002) propose the program was developed with two broad objectives in mind. The first objective is to provide the means to gain knowledge of best practice principles for ecotourism businesses, and to encourage continual improvement of their product. Secondly, EcoCertification should provide consumers with a way to recognise genuine operators of ecotourism products. The program was extended in the second version (2000) to include nature-based tourism and not solely ecotourism products. A core set of eight principles for the EcoCertification Program was identified in the first and second editions by Ecotourism Australia with specific “best practice” performance indicators for an ecotourism product (refer Table 2.6). These are:

1. Focus on giving visitors the opportunity to personally and directly experience nature (Natural Area Focus);
2. Provide opportunities to experience nature in ways that lead to greater understanding, appreciation and enjoyment (Interpretation);
3. Represent best practice for environmentally sustainable tourism (Environmental Sustainability Practice);
4. Contribute directly to the conservation of natural areas (Contribution to Conservation);
5. Provide ongoing contributions to the local community (Benefiting Local Communities);
6. Be sensitive to, interpret and involve the culture/s existing in the area (Cultural Respect);
7. Consistently meets consumer expectations (Customer Satisfaction); and
8. Be marketed and promoted honestly and accurately so that realistic expectations are formed (Responsible Marketing).

The third edition of NEAP (EcoCertification Program) recognises two additional principles (Ecotourism Australia, 2003):

9. Business Management and Operational Planning
10. Business Ethics

There are three categories of certification with Ecotourism Australia. These are Nature Tourism, Ecotourism and Advanced Ecotourism. To qualify for the Nature Tourism certification, a product must meet only the principles of natural area focus, environmental sustainability practice, customer satisfaction, responsible marketing, business ethics, and business management and operational planning. Certification is of the specific tourism product offered, not the overall company offering the product. All of the ten core principles with base criteria must be met for the Ecotourism certification. Advanced Ecotourism certification requires additional criteria to be met (for example, within the environmental management section – construction methods and materials, only three of the standards must be met for ecotourism certification and at least six of the stipulated standards must be met for advanced certification). There are 240 ecotourism or nature-based tourism accommodations, tour operations or attractions with one or more certified products in Australia (Ecotourism Australia, 2005). Within Australia in 2006, there are 51 certified accommodation products, with 23 of these being located in Queensland. Seven of the accommodation establishments are located in the North Queensland region and all are characteristic of the specialist accommodation sector.

Within Australia “certification schemes offering a responsible benchmark performance standard for sustainable tourism have been adopted by an estimated 0.01% of the tourism industry” (Worboys & De Lacy, 2003, p. 1). Indeed, the uptake of certification appears relatively slow albeit for those tourism businesses that are highly committed to environmental certification for the reasons of marketing or personal environmental commitment. Font and Harris (2004, p. 991) point out that the challenge for bodies like Ecotourism Australia attracting the tourism industry to attain certification is to realise that the high ratio of small and medium businesses in tourism will only access certification if it is “simplified, subsidised and promoted” or provide other benefits (for example, extended permits for access to protected areas).

Green Globe (formerly Green Globe 21)

The Green Globe International Ecotourism Standard introduced in 2002, is based on Ecotourism Australia's EcoCertification scheme with the criteria adapted to ensure its application in an international setting. Although this global scope limits the level of detail able to be included in the certification program (World Wildlife Fund [WWF], 2000). "The Green Globe brand signifies better environmental and social performance, improved community interactions, savings through using fewer resources, and greater yields from increased consumer demand" (Crabtree, Hundloe, Lee & Chester, 2002, p.1). Green Globe (GG) conforms to the Mohonk Agreement, a framework and set of principles for the certification of ecotourism and sustainable tourism agreed upon in 2000 by 20 countries and their delegates representing most of the leading global, national and regional sustainable tourism and ecotourism certification programs (Chester & Crabtree, 2002).

The Green Globe program is "open to all travel and tourism sectors and sizes and types of operations including companies, communities and protected areas" (Koeman, Worboys, De Lacy, Scott & Lipman, 2002, p.308). The WWF-UK (2000) indicates Green Globe is practical in countries where governments lack the resources or motivation to establish their own certification programs and targets mainstream tourism businesses that generally have a lower level of environmental awareness. There are now four Green Globe standards: company; community/ destination; international ecotourism standard; and the design and construct standard. Green Globe addresses three distinct sectors of the tourism industry: accommodation, tours and attractions within the company standard. Specific to the accommodation sector a major objective is to encourage guests to interact with natural areas adjacent to the accommodation (Crabtree, et al, 2001). Yet, the cost of joining the Green Globe program is expensive in comparison to other global certification schemes and this limits the size and scope of their membership base (WWF-UK, 2000).

In its original format Green Globe was a process-based system based on an ISO-style approach. In 2001, the new Green Globe was launched. It had become clear that the system needed performance-based standards together with critical processes such as the

development of a policy and an EMS (Koeman, Worboys, De Lacy, Scott & Lipman, 2002). The new standards are based on five criteria (Koeman, *et al*, 2002):

- ✓ *Environment and Social Sustainability Policy* – must be written, adopted and promoted by top management of a company.
- ✓ *Regulatory Framework* – operations must continuously maintain a register of relevant legislation, regulations, records of compliance and records of remedial action taken where compliance was not maintained.
- ✓ *Environmental and Social Sustainability Performance* - an operation will assess the significance of the positive and negative impacts of its activities, products and services in each of the key performance areas, establish targets for improvement and monitor progress.
- ✓ *Environmental Management System* – development, implementation and maintenance of an EMS is mandatory with operations ensuring a minimum significant improvement in relevant performance areas.
- ✓ *Stakeholder Consultation and Communication* – the operation must regularly communicate its environmental and social performance with customers and stakeholders about sensitive local customs, ways of life, natural areas, environmental issues and how best to contribute to the local economy.

Tourism operations are able to enter the Green Globe program at any of three levels – Awareness (Affiliate); Benchmarking; or Certifying. Operations committed to certification are required to undertake benchmarking, whereas affiliates are encouraged to move to benchmarking or certification after twelve months. The objective of Green Globe is to continuously improve performance through environmental and social benchmarking. Infiltration of Green Globe into global markets is presently concentrated on a few select regions including the Pacific (141 participants) predominantly in New Zealand or Australia, and the Caribbean (81 participants). The presence of Green Globe in the critical markets of North America (7 participants) and Europe (30 participants) is minimal and will require an increased focus with the impacts of greenhouse gas emissions and global warming being

realised. There are presently 67 accommodation companies with a level of Green Globe certification within Australia, mainly at the affiliate and benchmarking standards. Small accommodation styles with less than 25 rooms and characteristic of specialist accommodation account for approximately 26% of the total accommodation listings in Australia. In Queensland, only eight accommodation establishments have a GG standard (Green Globe, 2006).

AAA Tourism Green STARS

AAA Tourism is a subsidiary of Australian Motoring Services and operates in partnership with the state and territory automobile clubs within Australia. The purpose of AAA Tourism is to manage the Australian STAR rating scheme for over 11,000 accommodation properties (AAA Tourism, 2005). The styles of accommodation rated by AAA Tourism include hotel, motel and apartment hotels; self catering accommodation; bed & breakfast and guest houses; tourist/ caravan parks; backpacker hostels; and houseboat operations.

In 2004, AAA Tourism partnered with Green Globe Asia Pacific and the Sustainable Tourism Cooperative Research Centre (STCRC) to launch a new environmental program, Green STARS for accommodation in response to growing community environmental awareness and industry support for sustainable business practices. The program encourages businesses to operate in a way that reduces environmental impacts of the business without compromising guest satisfaction. The key environmental management areas evaluated are energy and water efficiency, and management (AAA Tourism, 2005). Easy to implement standards and essential measures that must be met for minimum ratings and include no change options for guest towels and linen, no leaking taps, paper recycling program, energy efficient lighting, reduced flush toilets and water saving showerheads. Green STARS does not alter an accommodation operation's original STAR rating but adds an important level of endorsement for achieving practical environmental standards that guests can understand (AAA Tourism, 2006).

The Green STARS program provides strong marketing benefits enabling customers to easily distinguish environmentally friendly accommodation. As well, the program provides an affiliate-level to the internationally recognised Green Globe 21 system and allows a business to later elect for a higher environmental accreditation (AAA Tourism, 2005).

2.4.3 Environmental Audit

Evidence of the proliferation of certification schemes globally and the design of codes of conduct for tourism sustainability indicates the tourism industry is seeking to act in environmentally responsible ways. Environmental audit or assessment is “a means by which businesses can assess the environmental impacts of their operations. The measurement and evaluation of all inputs and outputs from the production process (in this case the tourism product) forms the foundation of the audit or assessment. An audit is regular and ongoing, and generally conducted against a benchmark or initial assessment” (Environmental Protection Agency, 2005a, ¶ 7). It should be viewed as a management tool “for monitoring the environmental performance of existing tourism activity” (Goodall, 2003, p. 200) and compliance with regulatory requirements for the purpose of protecting the environment (Todd & Williams, 1996). The benefits of using environmental auditing include understanding the environmental management controls, processes and systems of a tourism business’s environmental performance, (Goodall, 2003). Environmental audits differ from environmental impact assessments (EIA) on four distinguishable features (Ding & Pigram, 1995). First, environmental audits are voluntary rather than mandatory as is an EIA. Second, collection and recording of environmental management evidence is necessary rather than opinion based on expert judgement. Third, an environmental audit focuses on current environmental performance, not the pre-development stage. Finally, environmental audits are concerned with the continuous process of impact management and “emphasise whether predicted standards are being met” (Ding & Pigram, 1995, p. 5).

Mostly, environmental audits are undertaken voluntarily and internally within a tourism business, with the attainment of certification often subject to external verification (Goodall, 2003). Ding & Pigram (1995) suggest tourism industry organisations and associations

could play an important part in convincing small scale tourism establishments to support environmental codes of practice and adopt an environmental auditing process to monitor the implementation of environmental management. The environmental auditing procedure should encompass energy and water conservation, and waste reduction. Similarly, an environmental audit for an airline would focus on fuel efficiency, noise and pollution emission reduction (Todd & Williams, 1996). A study of environmental management in ski fields of North America found 42% of operators claimed to conduct a regular environmental audit (Todd & Williams, 1996). However, Buckley (1991 cited in Todd & Williams, 1996) cautions environmental auditing is interpreted differently by different people and therefore it is suggested there is a lack of awareness of the implications and benefits of environmental auditing within various sectors of the tourism industry (Todd & Williams, 1996).

Third-party independent audits are considered an important component of a performance-based certification program that targets social, economic and environmental standards (Honey, 2003b). External audits or independent audits are often associated with certification schemes such as Green Globe, AAA Tourism Green STARS and Ecotourism Australia's EcoCertification. There are three levels of assessment can be involved in tourism certification schemes. First-party assessment involves the completion of a written questionnaire by the applicant. A second-party assessment often involves the certifying body assessing the application against set benchmarking standards. AAA Tourism Green Stars uses this method of auditing. Finally, third-party assessment is considered the most credible and involves an independent auditor not connected to the certifying body or the business applying to be certified (Honey, 2003b; Toth, 2002). Green Globe uses both second-party assessment (for benchmarking) and third-party assessment (for certification) in their program. Ecotourism Australia however uses an independent assessor who reviews the application, contacts referees and the applicant if necessary for clarification. An assessment panel that meets monthly will consider an application in light of the assessor's report (Ecotourism Australia, 2003). In light of the focus of this research, fees attached to these certification programs may indeed be a negative aspect for a small business. Ecotourism Australia charges an \$85 application fee and an annual fee based on turnover;

Green Globe charges a minimum application fee of \$750 and AAA Green Stars has an annual fee of \$225 which includes an inspection yearly.

2.4.4 Summary

Codes of conduct, performance-based certification schemes and internal environmental audits undertaken on a voluntarily basis are appropriate for the small tourism business. Small tourism accommodation operators require knowledge of best practice environmental management techniques and encouragement to maintain sustainability. Often it is a personal concern for the environment, lifestyle factors and financial barriers that will govern the most appropriate and beneficial environmental management practices that are implemented. Process-based certification schemes, external audits and benchmarking standards are better suited to larger tourism businesses and corporations. Regulatory bodies and tourism organisations should take these factors into account when relishing codes of conduct and certification suitable for the small tourism business.

2.5 Environmental Attitudes

Attitude is defined in the *Oxford Dictionary* (2003, p.44) as “a way of thinking or behaving”. Ross (1998) summarises attitudes as being subjective experiences of some issue or object that involve evaluative judgments. Attitudes are a person’s internal representation of an issue or object (Pearce, 1990b). Attitudes are communicated through language so as to be perceived and understood by others. It is generally accepted that attitudes have three components – cognitive (knowledge), affective (feelings) and conative (intention) (Ajzen, 1988; Gifford, 1997). The cognitive component refers to an individual’s knowledge and beliefs about an object/issue or place. The affective component is the emotional evaluation of attitudes toward a place, object or issue. The conative component relates to a person’s behavioural response to an object, issue or place.

According to Gifford (1997, p.47), environmental attitudes are “an individual’s concern for the physical environment as something that is worthy of protection, understanding or enhancement”. The focus is on the amount a person cares for the state of the natural environment and to a certain extent, parts of the built environment. An understanding of how environmental concern is reflected in people’s attitudes and value systems is also important for the development of responsive environmental management (La Trobe & Acott, 2000).

Methods to measure an individual’s attitude towards the environment and value for the environment have been espoused by various researchers. Fransson and Garling (1999) maintain attitude measurement instruments were developed to measure a general attitude for environmental concern yet have been used to measure specific attitudes towards specific behaviours, for example, recycling behaviour (Barr, 2003). Gagnon Thompson and Barton (1994) suggest ecocentric and anthropocentric values underlie environmental issues. Both ecocentric and anthropocentric individuals express a positive attitude towards environmental issues, although there appears to be a difference in their reasons for supporting conservation initiatives. Ecocentric individuals are more likely to value nature for its own sake and “judge that it deserves protection because of its intrinsic value” (Gagnon Thompson & Barton, 1994, p. 149). Anthropocentric individuals also support conservation and protection of the environment but rationalise the environment has value in maintaining or enhancing humans’ quality of life. That is, they are less likely to conserve the environment if other human-centred values are threatened (Casey & Scott, 2006).

The New Environmental Paradigm (Dunlap & Van Liere, 1978; Dunlap & Catton, 1979) and the New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000) are two most frequently used and well-tested methods to measure an individual’s environmental attitude (Uysal, Jurowski, Noe & McDonald, 1994; Luzar, Diagne, Gan & Henning, 1995; Floyd, Jang & Noe, 1997; Jones, Jurowski & Uysal, 2000; La Trobe & Acott, 2000; Cordano, Welcomer & Scherer, 2003). These will be discussed in greater detail in sections 2.5.1 and 2.5.2. Suffice to say at this stage, that understanding an individual’s

transferability of concern for the environment to actions is strengthened by an examination of the attitude-behaviour intention correlation.

2.5.1 Measurement of Environmental Attitudes

The concept of measuring the relationship between humans and their attitude to the environment has evolved since the 1970's. Originally, the Dominant Social Paradigm (DSP) by Dunlap and Van Liere (1978) measured those beliefs and values of American society which included limitless resources, continuous progress, faith in science and technology to solve problems, a strong emotional commitment to a laissez-faire economy, limited governmental planning and private property rights. These societal elements all contribute to environmental degradation and hinder efforts to improve the quality of the environment. Realisation of a change occurring in society's attitudes from the principles of the DSP to a new environmental ethic and a more ecologically sound worldview resulted in a revision of the DSP and the development of the New Environmental Paradigm (Dunlap & Van Liere, 1978; Dunlap & Catton, 1979). Capra (1995) notes this shift in environmental concern, particularly in the United States, was stimulated by an increasing number of pro-environmental movements such as the peace movement, ecology movement, spiritual movements and various grassroots movements across the globe.

The New Environmental Paradigm is a widely used construct to investigate environmental concern by measuring the overall relationship between humans, their value and belief systems, and the environment. It is designed to measure how people feel about nature and embodies their desire to restrict growth, protect whole ecosystems, and secure a well-balanced relationship between people and nature (Albrecht, Bultena, Hoiberg & Nowak, 1982). This New Environmental Paradigm probes three ecological facets - balance of nature, limits to growth and anti-anthropocentrism (ecocentrism). These three facets were measured through a set of 12 Likert scale statements designed and first used to explore the environmental attitudes of residents in Washington State, U.S.A (Dunlap & Van Liere, 1978). The results of this study found endorsement of the New Environmental Paradigm

could be treated as reflecting a pro-environmental attitude held by a specific group of people. Dunlap and Van Liere concluded the 12 items form “an internally consistent and unidimensional NEP scale” (Dunlap et al, 1978, p. 14). The New Environmental Paradigm item statements were:

1. The balance of nature is very delicate and easily upset.
2. When humans interfere with nature, it often produces disastrous consequences.
3. Humans must live in harmony with nature in order to survive.
4. Mankind is severely abusing the environment.
5. Humans have the right to modify the natural environment to suit their needs.
6. Mankind was created to rule over the rest of nature.
7. Plants and animals exist primarily to be used by humans.
8. We are approaching the limit of the number of people the earth can support.
9. To maintain a healthy economy, we will have to develop a steady-state economy where industrial growth is controlled.
10. The earth is like a spaceship with only limited room and resources.
11. Humans need not adapt to the natural environment because they can remake it to suit their needs.
12. There are limits to growth beyond which our industrialised society cannot expand.

(Source: Dunlap & Van Liere, 1978, p. 13)

However, in response to suggestions of a more ecologically sound worldview, the New Ecological Paradigm (NEP) (Dunlap & Catton, 1979; Dunlap, Van Liere, Mertig & Jones, 2000) was developed and tested in 1990 with another representative sample of Washington State residents by Dunlap, Van Liere, Mertig and Jones (2000). This revised New Ecological Paradigm (NEP), based on the concepts of the New Environmental Paradigm, embraces the realisation that modern industrial society is dependent upon and linked to ecological balance for future sustainability.

There are four major assumptions in the New Ecological Paradigm (Catton & Dunlap, 1980, p. 34), emphasising the linkage of modern industrialised societies with the health of natural ecosystems:

- ✓ *Assumptions about the nature of human beings* – While humans have exceptional characteristics (culture, technology, and so on), they remain one among many species that are interdependently involved in the global ecosystem.
- ✓ *Assumptions about social causation* – Human affairs are influenced not only by social and cultural factors, but also by intricate linkages of cause, effect, and feedback in the web of nature; thus purposive human actions have many unintended consequences.
- ✓ *Assumptions about the context of human society* – Humans live in and are dependent on a finite biophysical environment that imposes physical and biological restraints on human affairs.
- ✓ *Assumptions about constraints on human society* – Although the inventiveness of humans and their powers may seem for a while to extend carrying capacity limits, ecological laws cannot be repealed.

The NEP is extended to 15 statement items that primarily tap core beliefs about the nature of the earth and humanity's relationship with it, and appears to contribute to a fundamental component of people's belief systems about the environment. Based on the same concepts of positive and negative statements related to ecological worldview as was the original case with the New Environmental Paradigm, the New Ecological Paradigm improves on the original scale by tapping a wider range of ecological worldview facets, offering a balanced set of pro- and anti-NEP items, updating the terminology in the statements to reflect current egalitarian wording (for example, humankind instead of mankind) and included 3=unsure to decrease the possibilities of statement non-response (Dunlap, et al., 2000). The New Ecological Paradigm statements with the (intended ecological facet) are:

1. We are approaching the limit of the number of people the earth can support (Limits to Growth).
2. Humans have the right to modify the natural environment to suit their needs (Anti-anthropocentrism).
3. When humans interfere with nature it often produces disastrous consequences (Balance of Nature).
4. Human ingenuity will insure that we do NOT make the earth unliveable (Rejection of Exemptionalism).

5. Humans are severely abusing the environment (Eco-crisis).
6. The earth has plenty of natural resources if we just learn how to develop them (Limits to Growth).
7. Plants and animals have as much right as humans to exist (Anti-anthropocentrism).
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations (Balance of Nature).
9. Despite our special abilities humans are still subject to the laws of nature (Rejection of Exemptionalism).
10. The so-called “ecological crisis” facing humankind has been greatly exaggerated (Eco-crisis).
11. The earth is like a spaceship with very limited room and resources (Limits to Growth).
12. Humans were meant to rule over the rest of nature (Anti-anthropocentrism).
13. The balance of nature is very delicate and easily upset (Balance of Nature).
14. Humans will eventually learn enough about how nature works to be able to control it (Rejection of Exemptionalism).
15. If things continue on their present course, we will soon experience a major ecological catastrophe (Eco-crisis).

(Source: Dunlap, et al, 2000, p.433)

In sum, the NEP stresses the ecological dimension of human societies emphasising humans are not exempt from ecological constraints and the laws of nature (Catton & Dunlap, 1980). Essentially, the NEP emphasises that “the welfare of modern societies, even with their complex forms of social organisation and sophisticated technologies, is intricately linked to the health of the ecosystems on which they depend for their existence” (Dunlap, 2002, p. 21). This study uses the New Ecological Paradigm (NEP) to measure the depth of environmental concern held by specialist accommodation operators who are located near or neighbouring a protected area in Far North Queensland. Previous research using the NEP in general and specifically within the tourism industry is discussed next in section 2.5.2.

2.5.2 The NEP in Tourism

The application of the New Environmental Paradigm and subsequent New Ecological Paradigm (NEP) to measure environmental attitudes, beliefs and values has been widely applied. Concern for the environment and the elicitation of ecological worldviews has previously been sought from resident samples in the United States with the use of the New

Environmental Paradigm (Dunlap & Van Liere, 1978; Arcury, Johnson & Scollay, 1986; Scott & Willits, 1994) and the New Ecological Paradigm (Stern, Dietz & Guagnano, 1995). La Trobe and Acott (2000) examined the environmental concern of residents in the United Kingdom, whilst Corral-Verdugo and Armendariz (2000) examined the environmental attitudes of residents in Mexico, both utilising the New Environmental Paradigm. Specific groups have also been the subjects of previous environmental attitude research. Albrecht, Bultena, Hoiberg and Nowak (1982) compared attitudes towards the environment of 441 farmers and 468 city residents in the United States. Undergraduate students have also been the subjects of environmental attitude research using the New Environmental Paradigm (Cordano, Welcomer & Scherer, 2003).

However, studies of environmental attitudes within the tourism and specifically the nature-based tourism sector appear limited to the environmental attitudes held by visitors to areas of environmental significance and National Parks (see Table 2.8). Specifically within United States National Parks, environmental attitude studies have focused on visitors' level of environmental concern and acceptability of environmental park impacts (Floyd, Jang & Noe, 1997), the environmental attitudes of visitors to a U.S. Virgin Islands National Park delineated by demographic and travel characteristic variables using the New Environmental Paradigm (Uysal, Jurowski, Noe & McDonald, 1994), and the decision of visitors to participate in Louisiana nature-based tourism (Luzar, Diagne, Gan & Henning, 1995).

Table 2.8: Summary of Previous Studies in Tourism using the NEP

Author	Year	Location	Subjects	Environmental Attitude Scale
Uysal, Jurowski, Noe & McDonald	1994	Virgin Islands National Park, USA	Visitors (n=1082)	New Environmental Paradigm (12-item)
Luzar, Diagne, Gan & Henning	1995	Louisiana, USA	Visitors (n=2,001)	New Environmental Paradigm (modified 6-item)
Floyd, Jang & Noe	1997	Cape Lookout National Seashores (CL) and Moores Creek (MC) National Battlefield, USA	Visitors (n=392 CL; n=236 MC)	New Ecological Paradigm (15-item)
Jones, Jurowski & Uysal	2000	Virginia, USA (near Mount Rogers Recreation Area)	Host community residents (n=1,069)	New Ecological Paradigm (15-item)
Beaumont	2001; 1998	Lamington National Park, Queensland, Australia	Ecotourists (n=418)	Ecological Social Paradigm
Weaver & Lawton	2001	Lamington National Park, Queensland, Australia	Ecolodge guests (n=1,180)	New Environmental Paradigm (limited & modified)

To date, measurement of environmental attitudes using the 15-statement NEP (Dunlap, et al., 2000; Catton & Dunlap, 1980) within the Australian tourism industry is non-existent. Focusing on the effect of education and interpretation on ecotourist environmental attitudes, Beaumont (2001) sought to gain information from a total of 418 Lamington National Park visitors in Queensland using the Ecological Social Paradigm scale developed by Olsen, Lodwick and Dunlap (1992). The Ecological Social Paradigm (ESP) is a derivative of the New Ecological Paradigm, focused on the manner in which humans relate to ecosystems with the emphasis on the total system rather than any particular problems (Olsen, Lodwick & Dunlap, 1992). The dimensions of the ESP are described in terms of a post-industrial versus industrial view and include areas such as energy policies and technology/ ecology practices. Coach day tour visitors (55), ecolodge guests (137), day visitors (146) and campers (80) self-rated their “environmental knowledge, previous environmental studies, environmentally-friendly behaviours, environmental attitudes and socio-demographic details” (Beaumont, 1998, p.322). Using the Ecological Social

Paradigm (Olsen, et al. 1992), Beaumont (1998, 2001) found a strong relationship to exist between environmental knowledge and environmental attitudes and behaviours, demonstrating that environmental education does contribute towards positive and responsible environmental behaviours after the ecotourism experience. It was found the direct ecotourism experience promoted the appreciation and awareness of natural systems that led to pro-environmental attitudes, and ultimately contributed to protection and conservation, more than educative or interpretative components. Beaumont (2001, p. 335) concluded “environmental attitudes and behaviours did not increase correspondingly with environmental knowledge”.

Weaver and Lawton (2001) also conducted environmental attitude and behaviour studies of previous ecolodge patrons of the two Advanced Ecotourism certified accommodations located within the Lamington National Park, O’Reilly’s Guesthouse and Binna Burra Mountain Lodge. From each ecolodge 1,500 names with Australian addresses were generated for postal surveys. Opinions about environmental issues, behavioural possibilities to ecotourism, and motivations for visiting ecotourism sites were assessed. Additional areas explored were information sources, ecotourism trip planning times, destinations previously visited, activities pursued and demographic and socio-economic characteristics of respondents. Their study employed seven modified New Environmental Paradigm and New Ecological Paradigm statements to explore the environmental attitudes of ecolodge guests. Weaver and Lawton’s analysis segmented the respondents across an ecotourism spectrum resulting in clusters of ‘harder’, ‘softer’ and ‘structured’ ecotourists. The results indicated strongest pro-environmental attitudes amongst the ‘harder’ ecotourists (i.e. strong environmental commitment, physically active, longer trips, emphasis on personal experience, few if any services expected); although biocentric attitudes were held across the whole sample indicating agreement with the concept of society’s change in values of the environment and its link to modern society.

Most research employing the NEP has occurred in the United States of America with various groups of respondents. Luzar, Diagne, Gan and Henning (1995) analysed factors

that influenced participation in nature-based tourism in Louisiana, USA. The 1993 Louisiana Tourism Survey provided 2001 respondents who indicated they had participated in nature-based tourism while visiting Louisiana. Participation was expressed as a function of socio-economic variables (age, income, education and family size) and attitudes towards the environment. A modified version of the New Environmental Paradigm scale was used as an explanatory psychological measure in a mail out survey. The attitudinal facets of human conflicts with nature, limits to growth and the role of humans in nature were represented with only six statements. Results of the NEP analysis by Luzar, et al. (1995) showed a positive relationship between environmental attitudes and nature-based tourism participation in Louisiana. The higher the NEP score indicating a positive environmental attitude, the more likely people will participate in nature-based and ecotourism activities, although it appears the probability of participation is reduced for female respondents.

Floyd, Jang and Noe (1997) examined the relationship between environmental concern and the acceptability of environmental impacts among visitors at the Cape Lookout National Seashore and Moores Creek National Battlefield in south-eastern USA. A version of the New Ecological Paradigm tailored to investigate environmental impacts was used to measure the environmental attitude of these visitors and resulted in varied environmental concern and acceptability of impacts across the two national parks. After reverse coding the negative NEP statements, the respondent's responses were summed to create a score for an individual's level of environmental concern. Using quartiles resulted in three environmental concern groups (low to high). Floyd et al. (1997) concluded that people with NEP scores greater than 62 (range 15 to 75) had greater levels of environmental concern and were less accepting of environmental impacts.

From a statistical validity perspective, Gellar and Lasley (1985) tested the unidimensionality of the NEP scale by looking at the factor structure of three separate samples – a sample of Missouri farmers and the two farm and urban samples previously used by Albrecht et al (1982). If the NEP score is truly unidimensional, then low scale scores can be interpreted as a rejection of the NEP (Gellar & Lasley, 1985, p. 10).

However, if the scale is multidimensional, low scale scores may be interpreted as a partial or total rejection of a single dimension. According to Gellar and Lasley (1985), if a scale is to be useful it must be consistent across various populations and accordingly if different factor structures are displayed across the different populations, poor generalisability indicates a limited use by researchers. Unlike other researchers (Cordano, et al, 2003; Usyal et al, 1994; Albrecht et al, 1982) utilising the NEP and employing principle factor analysis to confirm Dunlap and Van Liere's claim that the scale is unidimensional, Gellar and Lasley employed a confirmatory factor analysis. Confirmatory factor analysis allows hypothesised factors to confirm a factor structure rather than simply exploring for possible high statistical loadings on each item, and secondly, a chi-square statistic may be used to test for goodness of fit of the model. Gellar and Lasley (1985) cautiously accept the interpretation of the three dimensions across all populations – 'balance of nature'; 'limits to growth'; and 'man over nature'. However, with the NEP having limited exposure within the social sciences, "repeated testing across various populations...confusion and contradictory findings about the scale can be cleared and the greater goal of assessing paradigmatic shifts can begin" (Gellar & Lasley, 1985, p. 12).

Similarly, Noe and Snow (1990) looked at the New Environmental Paradigm scale's unidimensionality examining the responses of national park visitors from five separate studies. The choice of sample was purposive as it was hypothesised that national park visitors would already "support an ecological view of man and nature, as opposed to those who favour a more anthropocentric view of man controlling nature" (p. 21). Noe and Snow employed factor analysis and Cronbach's alpha tests to determine the unidimensionality of the scale over the twelve individual scale items as well as the internal consistency of the items. However, unlike Gellar et al's 1985 study of the NEP scale, Noe and Snow (1990) applied a principle component procedure and varimax rotation of the factors. The principle components method calculates a first factor that explains the maximum variance in all scale items, whereby the confirmatory factor analysis would have required testing specific factors for a model. Noe and Snow (1990) also tested the internal consistency of the factors by applying a Cronbach alpha reliability measure to the scale items.

Note that both Gellar and Lasley (1985) and Noe and Snow (1990) have used the 12-item NEP scale (New Environmental Paradigm) and not the revised 15-item version of the NEP (New Ecological Paradigm). Both of the above studies confirmed a multi-dimensionality of the scale items although Gellar and Lasley cautiously accept the interpretations put forward by Albrecht et al (1982) of the three factors being “Balance of Nature”, “Limits to Growth” and “Man over Nature” as was shown by Gellar et al (1985) study that assumed a truncated scale (nine-item, three-factor) reflecting the three dimensions. In addition, both studies confirmed that the NEP scale represents an advanced tool for measuring environmental concern although noting that future research should be aware of the differences that may occur when comparing various sample populations.

Grenstad (1999) was particularly concerned with the NEP’s reliability and construct validity. Grenstad (1999) examined and tested the New Ecological Paradigm with two Norwegian samples, one from the general population (n=965) and the other being organised environmentalists (n=1,986) (Grenstad & Wollebaek, 1998). Using principal components analysis with varimax rotation, Grenstad (1999) reports high loading on the first factor from statements 2, 8, 10, 12, and 14 which represent all of the facets except anti-anthropocentrism, suggesting a general ecological dimension. Using the same method of analysis, Jones et al (2000) found four attitude types to exist amongst host community residents located near a recreation area. These were termed ‘limits to nature’ considered to have an ecocentric view; and ‘humans can manage nature’; humans have control over nature’; and ‘humans abuse and interfere with nature’ (p. 138), all having an anthropocentric view.

Initially, Grenstad (1999) indicates there is a general tendency for all of the respondents to endorse pro-ecological beliefs, however construct validity analysis indicated the organised environmentalists are younger and more egalitarian, more urbanised, and have a higher educational level. But Grenstad (1999, p. 202) does point out that correlations between 14 predictors (e.g. age, gender, residence) and the NEP scale are “generally weak and statistically insignificant”. Grenstad (1999) concludes his discussion stating he can not

conclusively consider the NEP to measure one dimension only and the analysis does not consistently identify the five dimensions as the New Ecological Paradigm purports to do.

The current research examines the environmental attitudes held by owner-operators of specialist accommodation located near protected areas in far north Queensland using the 15-item New Ecological Paradigm (Dunlap, et al. 2000). The environmental attitudes in conjunction with the identification of environmental management techniques already in use, and the intentions and impediments for future environmental management techniques are explored. Previous research of environmental attitudes and the adoption of environmental behaviours has linked the NEP with environmental behaviour (Barr, 2004; Fransson & Garling, 1999; Tarrant & Cordell, 1997; Scott & Willits, 1994). Three environmental behaviour models are briefly explained next. The Theory of Planned Behaviour (Ajzen, 1988, 1991); the Model of Environmental Behaviour (Hines, Hungerford & Tomera, 1986-1987) and the Framework of Environmental Behaviour (Barr, 2004) are all models designed to explain the correlation between a person's environmental attitude and their intention to behave environmentally.

2.6 The Environmental Attitude-Behaviour Correlation

Environmental attitude studies are necessary to validly and reliably measure people's attitudes, belief and value systems toward nature (LaTrobe & Acott, 2000). These can be beneficial in informing regulatory agencies of how much or little support exists for the value of the environment from various stakeholders. Research of environmental attitudes of a particular group can help in the area of environmental goal setting, and can indicate what people are doing now about the environment or what is intended for in the future (Gifford, 1997). The link between attitude and behaviour is the concept of a behavioural intention, the likelihood of one performing a specific behaviour (Ajzen & Fishbein, 1980). The behavioural intention reflects attitudinal influences, and the effects of habits and individual personality variables are also accountable for a person's behaviour. Values influence our perceptions, attitudes and behaviour, therefore the understanding of

environmental values can ultimately lead to the understanding of motives and behavioural intent in the tourism setting (McIntosh & Campbell, 2001). Previous assumptions that knowledge is linked to attitudes and attitudes to behaviour as a linear model, has proven to be untrue. Attitudes are multi-dimensional having interrelated knowledge (cognitive), feeling (affective) and intention (conative) constructs (Cottrell, 2003, p. 349).

The attitude-behaviour correlation is most often attributed to the concept of intention. Intention, being the conative dimension of attitudes, is the motivation to engage in a particular behaviour (Lam & Hsu, 2004). This conative component of an attitude is the intention to perform a specific act and is a function of the individual's attitude toward the behaviour and his/her subjective norm. Intention is determined by an individual's attitude; therefore an individual is more likely to perform a behaviour if they have a positive attitude towards it. The second determinant of intention is subjective norm whereby the social pressure to perform or not to perform a particular behaviour is perceived. This subjective norm is governed by the perceived social pressure from others or an individual's normative beliefs, and also by the motivation to comply with those referents (Fishbein, 1967, cited in Lam & Hsu, 2004).

Schaper and Carlsen (2004) caution relying on pro-environmental attitudes held by the owner-operators of small firms is not enough to produce eco-friendly results. The existence of this discrepancy between behavioural intentions and practices is not new. There are no direct causal links between attitudes and action: an owner/managers concern for the environment does not necessarily translate into changes in behaviour (Petts, Herd, Gerrard & Horne, 1999). Three reasons as to why attitudes may not predict behaviour (Schaper & Carlsen, 2004; Tarrant & Cordell, 1997) are argued:

1. Measurement of the attitude-behaviour relationship may have greater utility at the general rather than the specific level when predicting behaviour across a range of situations;

2. Attitude measurement has demonstrated a slightly higher internal reliability when used as a uni-dimensional rather than multi-dimensional scale; and
3. External factors including normative behaviours, socio-demographic variables, personality characteristics and situational conditions are often neglected in attitude-behaviour correlations.

Kollmuss and Agyeman (2002) explain the gap between environmental knowledge, environmental awareness and pro-environmental behaviour by analysing theoretical and analytical models by Rajecki (1982), Azjen and Fishbein (1980), Hines, et al. (1986-87), Fietkau and Kessel (1981), and Blake (1999). Environmental attitude and pro-environmental behaviour are commonly influenced by demographic factors of gender and education. Kollmuss and Agyeman (2002) indicate women have less environmental knowledge than men, but the longer the education, the knowledge of environmental issues is more extensive. There are also external factors namely, institutional factors (infrastructure), economic factors and social and cultural factors (norms). Internal factors identified were motivation, environmental knowledge, values, attitudes, environmental awareness, locus of control, emotional involvement, responsibility and priorities.

In order to predict ecological behaviour, environmental attitudes can be measured toward the environment, and toward ecological behaviour. Kaiser, Wolfing and Fuhrer (1999) found environmental attitudes to be a powerful predictor of ecological behaviour in their study of Swiss transportation association members. However, previous research of the strength of the relationship between environmental attitudes and ecological behaviour can be flawed methodologically. Measurement correspondence of environmental behaviour should be general not specific and there is often a lack of consideration for situational influences (Kaiser et al, 1999).

Explaining the attitude-behaviour correlation is necessary for the understanding of a stakeholder's actual performance of an environmental behaviour. Improvement of the TPB and its predecessor, the Theory of Reasoned Action (Ajzen & Fishbein, 1980) to reflect

internal and external factors affecting the link between environmental attitudes to intention and behaviour has been developed by Hines, et al (1986/ 1987) and Barr (2003, 2004). The Theory of Planned Behaviour (Ajzen & Fishbein, 1980) and The Model of Environmental Behaviour (Hines et al. 1986/ 1987) will be briefly explained and aims to show the applicability of the Framework of Environmental Behaviour (Barr, 2004) to this study.

2.6.1 The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) (Ajzen, 1988, 1991) is an extension of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), with the concept of intention being central to both theories. The core relationship in the TRA is the link between behavioural intention and action (Barr, 2004). Although the TRA has proven to adequately predict behavioural intentions that are under complete volitional control, when there are constraints to the action including the effect of external factors, the mere formation of an intention is insufficient to predict the behaviour (Lam & Hsu, 2004). Control beliefs and perceived behavioural control are an additional extension to the TPB from the TRA. Perceived behavioural control is expected to influence intentions, secondly, have a direct relation with behaviour, and a third relation is the interaction of perceived behavioural control with intention. Staats (2003) explains people forming an intention will consider if they can actually execute the behaviour.

Traditionally, the Theory of Planned Behaviour has commonly investigated behavioural intentions from an individual's health management perspective and political behaviour. The application of the TPB to the tourism industry is limited. Recently though, the TPB has been employed by Lam and Hsu (2004) who examined the behavioural intentions of Chinese residents choosing a travel destination. However, others have examined environmental management intentions including recycling behaviour by residents in Brisbane, Queensland (Terry, Hogg & White, 1999), riparian zone management with landholders in the Fitzroy Basin, Queensland (Fielding, Terry, Masser, Bordia & Hogg, 2005), and water conservation behaviour in the Truckee River Watershed of California and Nevada (Trumbo & O'Keefe, 2005). Trumbo and O'Keefe (2005) found those individuals

with pro-environmental values and previous behaviours consistent with those values are more likely to seek out and action information regarding the environmental behaviour. However, criticism of the TRA/ TPB has been concerned with the seeming inflexibility to consider a range of variables (Barr, 2004, p. 231). “Many studies using the TRA or TPB terminate with behavioural intention. Those that have been able to include a measure of actual behaviour tend to report a degree of inconsistency between intention and behaviour” (Trumbo & O’Keefe, 2005, p.581).

2.6.2 The Model of Responsible Environmental Behaviour

Hines, Hungerford and Tomera (1986/ 1987) conducted a meta-analysis of environmental behaviour research of 128 previously published studies from 1971. These authors identified variables strongly associated with responsible environmental behaviour and determined the relative strength of the relationships between these identified variables and environmental behaviour, resulting in the formation of the Model of Responsible Environmental Behaviour. The proposed Model of Responsible Environmental Behaviour expands on the Theory of Planned Behaviour by Ajzen (1988, 1991) by systematically identifying the variables most strongly associated with the environmental behaviour-action correlation.

The variables found to be associated with responsible environmental behaviour were knowledge of issues, knowledge of action strategies, locus of control, attitudes, verbal commitment and an individual’s sense of responsibility. These variables when categorised were identified as cognitive variables which associated with an individual’s knowledge of the environment or some aspect of an environmental issue. The psycho-social variables related to individual personality characteristics and included locus of control, verbal commitment, personal responsibility and economic orientation. Thirdly, demographic variables included age, income, gender and education. These authors summarise that the knowledge of an environmental problem and the knowledge of actions most effective and available are necessary for an environmental behaviour to occur. The situational factors

included in the model relate to economic constraints, social pressures and opportunities to choose different actions and can thwart the pathway to environmental behaviour action.

2.6.3 Framework of Environmental Behaviour

Barr (2004) conceptualises environmental action around the intention-behaviour relationship similar to Hines et al (1986-1987). Barr determined from a review of environmental literature that environmental values, situational variables and psychological variables influence the essential intention-behaviour relationship for the implementation of environmental actions. The Framework of Environmental Behaviour is based on the Fishbein & Ajzen (1975) Theory of Reasoned Action (Gilg & Barr, 2005) and overcomes the said inflexibility of this model to include a scope of situational and psychological values believed to predict and individual's intention to act environmentally.

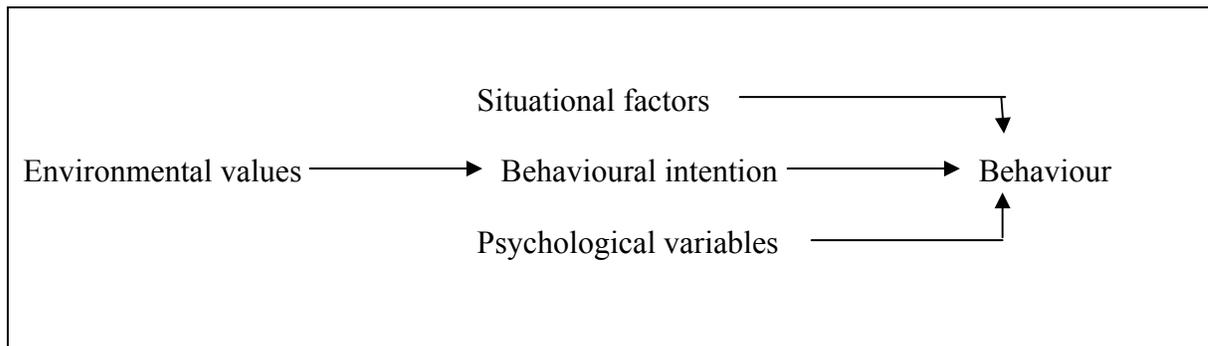


Figure 2.1: Framework of Environmental Behaviour (Barr, 2003; 2004)

Environmental and social values have all been operationalised to measure the same constructs of environmental ‘concern’, ‘attitudes’ and ‘values’ (Schwartz, 1992; Barr, 2003). These interchangeable terms are the basic “criteria people use to select and justify actions to evaluate people (including the self) and events” (Schwartz, 1992, p. 1 cited in Barr, 2003, p. 229). Environmental values are an individual's personal orientations towards the environment and represent a general worldview of the natural environment (Barr, Ford & Gilg, 2003). These can be measured with the use of the New Environmental Paradigm/ New Ecological Paradigm (NEP) as developed by Dunlap et al. (2000)

specifically for the relationship individuals believe they and other humans have to nature. The NEP is previously described in 2.5.2.

Situational variables include at the basic level the service and availability of facilities that affect an individual's ability to act. Variables which represent an individual's situation at a given time have importance in shaping their environmental action, for example access to appropriate services (Guagnano, Dietz & Stern, 1994, cited Barr, 2003). Others indicate socio-demographic variables; knowledge of environmental problems and awareness of performing environmental behaviour; and an individual's involvement in other environmental actions (Barr, 2004; Tarrant & Cordell, 1997; Hines et al., 1986-1987) can be considered situational variables affecting an individual's degree of environmental behaviour.

Psychological variables include perceptual and personality traits that determine an individual's overall environmental behaviour. These include intrinsic motivation, subjective norms, concern for the environment, the extent to which an individual feels competent to perform an environmental action, and practical issues. Subjective norms refer to an individual's perception that most people who are of importance to the individual think they should or should not perform a particular behaviour (Ajzen, 1980, p. 57).

Based on a synthesis of a wide range of research into different causal influences on 'environmental action' around the home, the Framework of Environmental Behaviour was further detailed by Gilg and Barr (2005). Listed as enablers and disablers, situational variables include service availability, behavioural knowledge, behavioural experience, residential/ work environments, socio-demographics, policy knowledge, policy interventions/ instruments and global environmental knowledge. The psychological variables are known as motivators and barriers. These are identified as citizenship beliefs, self-presentation, perception of environmental problem, intrinsic-extrinsic motivation, purchase motivations and barriers, self-efficacy, subjective norms, response efficacy and logistics of behaviour.

The primary study conducted by Barr (2004) involved 981 residents of Exeter, United Kingdom and examined waste management (specifically recycling) behaviour and environmental values. Although Barr (2004) did find that the actions of recycling, reuse and minimisation behaviours are conceptually different, it is suggested these require individual attention as opposed to treating waste management as one group behaviour when looking at the intention-behaviour correlation. It also appears from Barr's (2004) study that certain environmental actions (for example, recycling) have become socially acceptable norms. Whilst there is a moderately strong relationship between stated intention and behaviour proven by Barr (2004), there are several factors influencing these two constructs. Barr's (2004) study indicates access to services; knowledge of behaviours and ecological consequence; and moral obligations underlie much of the behaviour-intention relationship held by citizens.

2.7 Summary

This chapter has discussed the environmental management techniques for waste, water, energy, sustainable building design and sustainable practices for ecological sustainability. A review of previous research on this topic indicates reasons for the adoption and rejection of environmental management practices extend to internal and external factors including cost, time, legal compliance, personal environmental concern, resources, knowledge, personal needs and perceptions, municipal infrastructure, climate and geographical location. Where possible, this literature has focused on the small accommodation sector, however, literature within the specialist accommodation tourism sector is scant and thus some research has drawn on larger accommodation styles for review. The regulations for environmental management have concentrated on codes-of-conduct and the uptake of voluntary environmental practices for sustainability. Three prominent certification schemes for tourism accommodation existing within Australia were discussed and contrasted, with the specific requirements for environmental certification from Ecotourism Australia, Green Globe and AAA Tourism. The chapter has concluded with a discussion of environmental

attitudes and the New Ecological Paradigm (Dunlap et al, 2000) a proposed measuring instrument for an individual's attitude toward the environment.

Research involving the entire 15-item NEP has not been used within the Australian tourism industry previously. To understand the correlation between environmental attitudes and an individual's intention to behave environmentally, three environmental behaviour-intention theories were explained. These are: (1) the Theory of Planned Behaviour (Ajzen, 1988; 1991); (2) the Model of Environmental Behaviour (Hines et al. 1987); and (3) the Framework of Environmental Behaviour (Barr, 2004). This Framework of Environmental Behaviour distinguishes situational, psychological and demographic factors which affect an individual's environmental behaviour intention. The New Ecological Paradigm (Dunlap, et al, 2000) and the Framework of Environmental Behaviour (Barr, 2004) will be used to examine the environmental attitudes and environmental management techniques implemented by the owner/ operators of specialist accommodation located near protected areas in Far North Queensland.

CHAPTER 3: METHODOLOGY

Structure of the Chapter

3.1 Introduction

3.2 Geographic Areas of Research

3.3 Research Methods

3.4 Quantitative Methodological Approaches

3.5 Qualitative Methodological Approaches

3.6 Summary

3.1 Introduction

This chapter describes the geographic areas of research for the study and the methods employed to collect the data from specialist accommodation operators and regulatory agencies in North Queensland. Each research method is systematically explained in detail within the chapter concluding with the limitations to the research. For the purpose of this research a multi-methodological approach (Oppermann, 2000) utilising both qualitative and quantitative research methods has been taken to gain insight from various stakeholders pertaining to the environmental practices of specialist accommodation and regulatory agencies. James Cook University Human Ethics Approval (H1704) was granted for this research project.

Specialist accommodation operators located within 50 kilometres of the Wet Tropics World Heritage Area rainforests in north Queensland were first selected by identifying accommodation operations from marketing brochures and tourism association listings. The 50 kilometre threshold is based on the majority of the population in the region living within a 50 kilometre radius of the Wet Tropics World Heritage Area which has a 3,000 kilometre boundary. The WTWHA is generally an elongated protected area extending along the coastline from Cooktown to Townsville. East of the Wet Tropics in some locations will be on the Great Barrier Reef. This process led to an initial contact with the specialist accommodation operators by telephone enquiring if they would participate in the research project. The *Specialist Accommodation Operator Survey* (Appendix C) was subsequently

posted to 164 specialist accommodation operations in October 2004. A return response rate of 61.6% resulted in 101 respondents being included in the research analysis of environmental attitudes and practices of specialist accommodation operators in North Queensland. Secondly, semi-structured interviews were conducted with a purposive sample of 30 specialist accommodation operators in order to fully understand the implementation and reasoning for the environmental management techniques in use by the specialist accommodation operators (Appendix D).

Thirdly, interviews were conducted with regulatory bodies affecting this accommodation sector located near protected areas in North Queensland. These face-to-face interviews were conducted with seven shire council town planners and two protected area agency staff from WTMA and EPA. Finally, nineteen tourism associations identified by the specialist accommodation operators were surveyed by email to ascertain the existence of environmental codes of conduct and awards. Tourism and accommodation associations were also contacted by post regarding their environmental codes-of-conduct for members.

3.2 Geographic Areas of Research

Three geographic areas around Cairns in North Queensland were selected for the project – the Atherton Tablelands, Mission Beach and the Daintree regions. The areas chosen near Cairns have witnessed a steady increase in the presence and distribution of specialist accommodation in the past five to ten years. Tropical North Queensland receives over 2.3 million visitors annually and 1.6 million of these visitors are here for the purpose of a holiday (Tourism Tropical North Queensland, 2006). However, accurate visitation numbers to the Atherton Tablelands, Daintree and Mission Beach regions are virtually non-existent. The natural environments of the reef and rainforest are primary reasons for interstate, intrastate and international visitors to the North Queensland region.

Indeed, these areas are of significance as they surround the Wet Tropics World Heritage Area (WTWHA) and other protected areas that are the backdrop and attraction for the local

tourism industry in Far North Queensland. The Wet Tropics WHA covers an area of 894,420 hectares of tropical rainforest (Wet Tropics Management Authority, 2003) and extends from Townsville to Cooktown in the north and west across the Atherton Tablelands. The specific locales examined in this study of specialist accommodation operations are all sub-regions easily accessible from Cairns and are within close proximity (maximum distance of approximately 50 kilometres) to the Wet Tropics WHA and other protected areas. The geographic localities focused upon in the study are:

- ✓ Atherton Tablelands (west of Cairns)
- ✓ Mission Beach Region (south of Cairns)
- ✓ Daintree Region (north of Cairns)

These three areas encompass the local government jurisdictions of Douglas Shire, (Daintree Region); Eacham Shire, Mareeba Shire, Atherton Shire and Herberton Shire (Atherton Tablelands); and Johnstone Shire and Cardwell Shire (Mission Beach Region). A map of each local council shire indicating the presence of the Wet Tropics World Heritage Area is provided in Appendix E. The Cairns City Council was not included in the research due to its predominantly urban structure and minimal Wet Tropics WHA coverage within the city limits.

3.2.1 Atherton Tablelands

The Atherton Tablelands lie west of Cairns in Far North Queensland, approximately 800-1500 metres above sea level, covers an area of 63,904 sq. km and has a total population of 40,077 people (Queensland Department of Local Government, Planning and Sport, 2005). There are four local council precincts covering the Atherton Tablelands responsible for local government administration and community welfare. These are Mareeba Shire Council, Atherton Shire Council, Eacham Shire Council and Herberton Shire Council. The Atherton Tablelands are both naturally and culturally diverse. Natural diversity ranges from tropical rainforest, spectacular waterfalls crossing highly fertile volcanic agricultural areas, to dry savannah. The region is essentially "rural Australia" with a wide cultural

diversity embracing local indigenous communities and people from most countries of the world (Atherton Shire Council, 2005).

Six highways link the Atherton Tablelands to the coastal and inland road systems including the Peninsula Development Road, and the Kennedy, Palmerston, Gillies and Rex Highways. A railway built in 1887 connects the Tablelands to the East Coast through the spectacular scenery of the coastal escarpment. The Tableland region is linked to major transport hubs including shipping ports in Cairns, Darwin, and Townsville and the Cairns International Airport (Atherton Shire Council, 2005). Much of the Atherton Tablelands were settled in the late 19th century and early 1900's with conditions on settlement tied to improvements of the land parcel. This was interpreted as "falling, burning, grassing and fencing, with failure to do so resulting in forfeiture of the selection. To check that settlers were abiding by these conditions a Crown ranger rode the district on horseback making inspections" (Eacham Historical Society Inc, 1995, p.38). Timber felling was halted in the 1980s resulting in the closure of local sawmills, loss of employment and the advent of World Heritage Listing of the Wet Tropics Rainforests in 1988.

Getz (1999) conducted a longitudinal study of tourism development on the Atherton Tablelands, and in particular the increasing number of tour operators accessing this rural hinterland, a relatively undeveloped tourism area within easy driving distance of Cairns. Similar to the origins of nature-based tourism as espoused by Meyer-Arendt (2004), the Atherton Tablelands and in particular, Lake Barrine attracted visitors as early as the 1920s and self-drive visitors due to its rainforest setting and pleasant climate. The Atherton Tablelands is a unique place to visit where environmental values and nature-based specialist accommodation are now comparable to the value of good quality agricultural land.

Mareeba Shire is the largest of the four shires on the Atherton Tableland covering an area of 53,457 square kilometres. The estimated resident population for the entire Mareeba Shire is 18,638 as at June 2003 (Queensland Department of Local Government, Planning and Sport, 2004). The main administrative and commercial centre of Mareeba lies 64

kilometres south west of Cairns and has a population of 8000. Smaller centres in the shire include Kuranda, Dimbulah, Chillagoe, Mt Molloy, Mt Carbine and Irvinebank (Mareeba Shire Council, 2004). Agriculture, mining, cattle and horticulture are traditional industries for this area and now farm-based wineries, coffee production, bushwalking and birdwatching are growth industries of the Mareeba Shire. The Shire's farmers have seen the demise of the tobacco industry and are diversifying into fruit crops and other industries.

The Atherton Shire is located 90 kilometres southwest of Cairns, covers an area of 620 square kilometres and ranges from 500m to 1280m above sea level (Atherton Shire Council Annual Report 2002-2003). The Atherton Shire located on rich red volcanic soil, includes the towns of Atherton, Kairi, Tinaroo, Tolga and Walkamin and has the iconic natural attractions of Lake Tinaroo, Mt Hypipamee Crater and the Curtain Fig Tree. The population of the Atherton Shire is approximately 10,600 (Queensland Department of Local Government, Planning and Sport, 2004).

Eacham Shire is located to the south west of Cairns and covers an area of 1,124 square kilometres. The population of the shire is approximately 6500 with the population having a median age of 40 years (Queensland Department of Local Government, Planning and Sport, 2005). The Shire of Eacham contains picturesque virgin rainforest, evergreen fields, crater lakes, numerous waterfalls and streams set under Mt Bartle Frere, Queensland's highest mountain (Eacham Shire Council, 2006). Eacham Shire includes the towns of Jaggan, Malanda, Millaa Millaa, Pearamon, Tarzali and Yungaburra.

Herberton Shire is predominantly a rural shire covering 9,575 square kilometres. It has an estimated resident population of 5,400 (Queensland Local Government and Planning, 2005). Half of the shire's population is located in the three main service towns of Herberton, Ravenshoe and Mount Garnet (Herberton Shire Council, 2006). Other towns in the shire include Innot Hot Springs, Queensland Department of Local Government, Planning and Sport, 2005 Millstream, Koombooloomba and Tumoulin.

3.2.2 Mission Beach Region

Mission Beach is located two hours south of Cairns and is divided between the two local council shires of Johnstone and Cardwell. Mission Beach is a beachside tourism precinct recently expanded by the growth of the tourism industry in the past ten years. The area has always been an attraction for alternative lifestyles and the backpacker market, originating as a seaside weekender getaway location for the local sugar cane farmers from Tully and surrounds. The Great Barrier Reef is located close to the coast and provides access to Dunk Island, the exclusive Bedarra Island and the Family Islands. Coastal lowland rainforest, sandy beaches and cassowary are prime attractions.

Johnstone Shire covers 1639 square kilometres and extends about 50 kilometres along the coast from Ella Bay in the north to Mission Beach in the south and inland almost to the top of the Palmerston Highway that provides access to the southern Atherton Tablelands and the outback. The population of Johnstone Shire is approximately 20,000 with almost half residing in the regional centre of Innisfail (Department of Local Government and Planning, 2004). The shire includes outstanding and significant areas of biodiversity with 47% of the shire included in the Wet Tropics World Heritage Area (WTWHA).

The Johnstone Shire Council's planning scheme "promotes ecologically sustainable development by seeking to maintain the dominant economic role of agriculture, encourage low impact nature-based tourism, preserve and enhance the character of urban and rural areas and manage natural resources to protect their value and benefit for current and future generations" (Johnstone Shire Council, 2004). Conservation covenants are offered by the Johnstone Shire to property owners willing to undertake conservation management measures on their land. Apart from protecting the Shire's natural habitat, an incentive of advice and significant property rates concessions for conservation are given. In 2003, there were 63 properties with approved council conservation covenants equalling 1,520.36 hectares of land. As well, there are presently two properties at Bingil Bay in the Mission Beach area with a total of 30 hectares under a WTMA covenant and a total of eight Land

for Wildlife agreements in the Johnstone Shire covering 218.93 hectares (Johnstone Shire Council, 2004).

Cardwell Shire stretches from the Kirrama Range in the west to the east coast and includes the towns of Tully, Cardwell, South Mission Beach, Euramo, Hinchinbrook Island and Dunk Island. Cardwell Shire has a population of 11,000 (June, 2003) with a median age of 36 years (Queensland Department of Local Government, Planning and Sport, 2005). Tully is the administrative centre of the Shire and lies approximately 235 kilometres south of Cairns. The area of the Shire is 2,901 square kilometres and includes part of the Wet Tropics World Heritage Area. The rainforests of the WTWHA in this region provide habitat for the endangered southern cassowary (*Casuarius casuarius*). The main economic strength of the Cardwell Shire is agriculture producing significant amounts of sugar and bananas. Tourism is also a significant part of the economy with increasing visitor numbers to Mission Beach, Dunk Island and Hinchinbrook Island (Cardwell Shire Council, 2005).

3.2.3 Daintree Region

Douglas Shire is a small rural region on the coastline of north east Queensland extending from Ellis Beach north to Bloomfield and is unique having the Great Barrier Reef and the Wet Tropics World Heritage Areas within the Shire. The Douglas Shire covers 2,477 square kilometres of land and 5,500 square kilometres at sea and is the Daintree Region. Over 80% of the Shire is protected in the Daintree National Park and is part of the Wet Tropics bioregion and World Heritage Area. With a population of over 11,000 people, the economy is built on a relatively new tourism industry and an established agricultural sector. It includes the popular tourist destinations of Port Douglas, Cape Tribulation, Mossman Gorge and Daintree National Park.

This is an area of wilderness and world heritage protected areas of faunal and floral significance. Smaller townships supporting tourism are Julatten, Wonga Beach, Newell Beach and Daintree Village. The shire accommodates one million visitors a year and

produces a million tones of sugar cane, cattle and a variety of fruit crops. As well, one of the oldest intact surviving indigenous communities in the world, the Kuku Yalanji reside in the Shire (Douglas Shire Council, 2004).

3.3 Research Methods

The overall approach to the study employed a multi-methodological approach to examine the specialist accommodation sector in Far North Queensland. The purpose of a multi-methodological approach is to overcome potential bias and validity by using various methods to investigate the same object of interest (Oppermann, 2000). A flow diagram of the quantitative and qualitative methods used for the collection of data for this study is provided in Figure 3.1. The methods chosen (i.e. surveys and interviews) gained an overall perspective of the specialist accommodation sector in Far North Queensland, particularly their environmental management, environmental attitudes and interaction with regulatory agencies are investigated.

An identification of the specialist accommodation operations in the geographical areas of research from brochures, accommodation websites and tourism association membership listings allowed the compilation of a database. This analytical process resulted in telephone calls and a mail-out survey to specialist accommodation operations who agreed to participate in the research. Following on from the surveys, a purposive sampling method was used to arrange personal interviews with selected specialist accommodation operators, gaining an overview of the characteristics of the specialist accommodation operations, the environmental management techniques in place and future intentions to pursue better environmental management, or certification. Additionally, observations of the specialist accommodation styles took place during the 30 face-to-face interviews and permission was sought to take photographs of the specialist accommodation facilities.

Secondly, regulatory agencies affecting the specialist accommodation operations located near protected areas were contacted and personally interviewed. These included seven

local shire town planners and two protected area agency staff. Thirdly, tourism and accommodation associations that specialist accommodation operations had memberships with were emailed or posted a brief one-page survey for confirmation of environmental codes of conduct for their members. The results of the data collection methods employed elicited both quantitative and qualitative results useful for understanding current and future planning and environmental management requirements of specialist accommodation operations located near protected areas in Far North Queensland, Australia. This research is applicable to many peripheral or rural tourism regions with natural attractions experiencing growth in the specialist accommodation sector. Details of the research methods employed are further explained in sections 3.4 and 3.5.

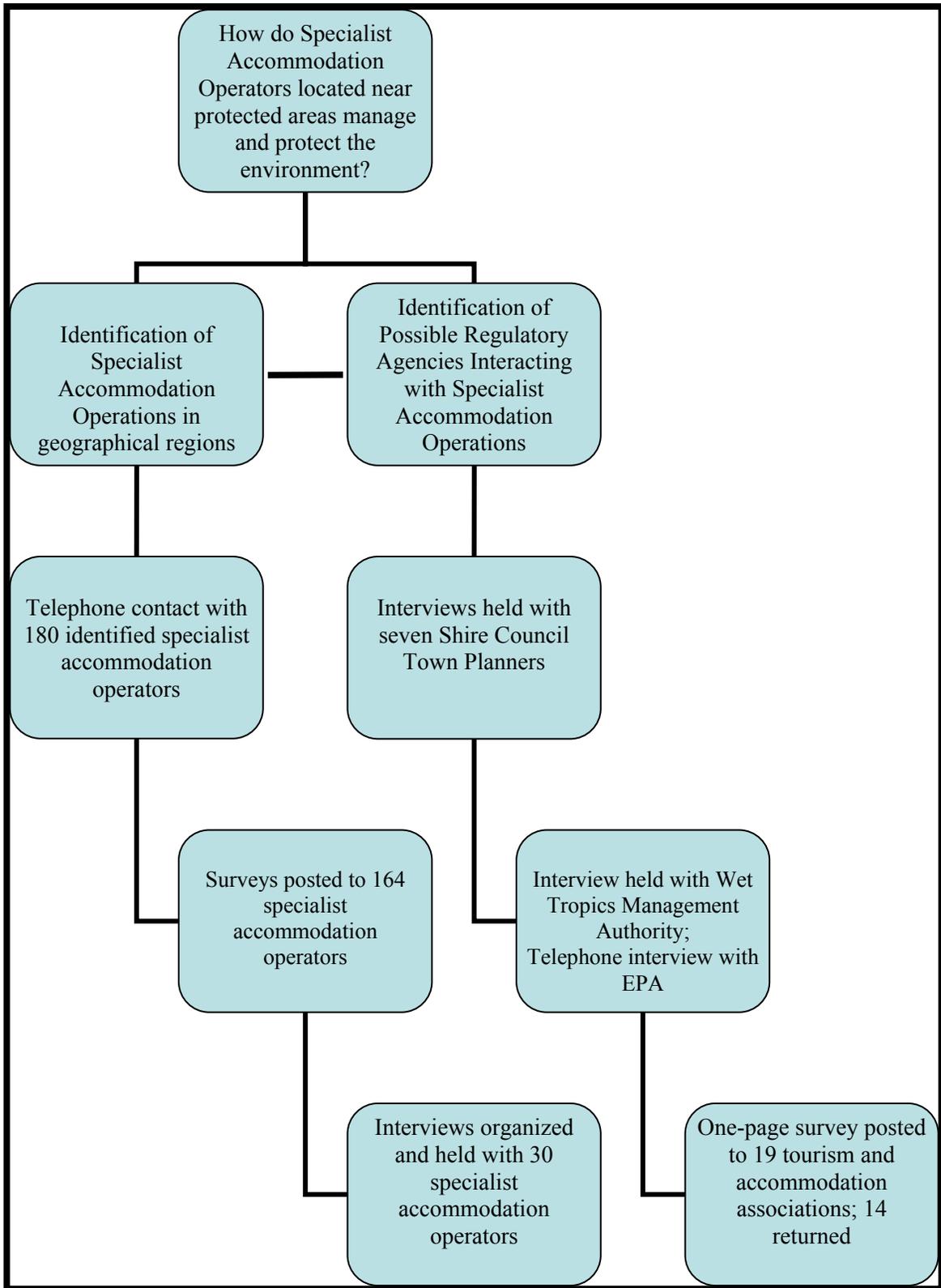


Figure 3.1: A Multi-Methodological Research Approach

3.4 Quantitative Methodological Approach

Beeton (1998), states that nature-based accommodation tends to reflect the character of the region with most ecotourism accommodation being small scale and locally owned. Specialist accommodation is defined as the type of accommodation that has a (1) personal interaction between the guests and the owner hosts; (2) a special opportunity or advantage to guests through location, features of the establishment, or services offered; (3) special activities offered to guests; (4) owner-operated; and (5) small guest accommodation capacity (generally less than 25 rooms) (Morrison, Pearce, Moscardo, Nadkarni and O’Leary, 1996). Wight (1993, 1997) points out there are a variety of small accommodation styles providing a nature-based experience which determines the consumer’s accommodation choice – tourists choose the environment they want to experience, and then they choose the type of specialist accommodation and price range.

According to Wight (1993, 1997), if nature-based accommodation operators are to express a conservation ethic and concern for the environment, a close examination of internal practices such as environmentally sensitive infrastructure development, efficient use and conservation of natural resources, waste disposal and management, recycling, air quality and emissions, green purchasing policies, and locally produced foods and goods should be considered. The primary objective of the study is to explore the environmental attitudes toward the environment held by the specialist accommodation operators and understand the implementation of environmental management techniques presently in use at specialist accommodation operations located within 50 kilometres of the protected areas of the Wet Tropics World Heritage Area, National Parks, and State Forests in North Queensland.

The following types of specialist accommodation were included in the study:

- ✓ Ecolodges, Retreats and Spas
- ✓ Bed and Breakfast Accommodation
- ✓ Farm Stay Accommodation
- ✓ Guest Houses

- ✓ Cabins and Cottages
- ✓ Caravan and Camping Accommodation Providers
- ✓ Licensed Public Hotels
- ✓ Houseboats

Licensed public hotels are included in the spectrum of specialist accommodation due to these establishments generally being small-scale (less than 25 rooms), reflecting the character of the region, and are located within close proximity to protected areas in North Queensland. There are a number of licensed public hotels within the geographic study areas of the Atherton Tablelands, Mission Beach and Daintree Regions, and based on these criteria, a nature-based tourist may choose to stay at a public hotel in consideration of price and its locational advantage to natural settings.

3.4.1 Sample Selection

The specialist accommodation operators for the research have been drawn from Far North Queensland, Australia, where there are a high proportion of protected areas and increasing visitation requires visitor impact management (Wet Tropics Management Authority, 2000). Specialist accommodation operations were selected from their marketing brochures, websites or listing with a tourism or accommodation association or group. Non-government tourism associations such as the Bed and Breakfast and Farmstay Association of Far North Queensland, Mission Beach Tourism Association, Cooktown Tourism Association, Daintree Cape Tribulation Tourism Association, Port Douglas Daintree Tourism Association, Daintree Village Tourism Association and Tropical Tablelands Tourism were used to source specific specialist accommodation operators. Tourism organisations offering environmental or business certification of accommodation, such as Ecotourism Australia, Australian Camping Association and the Australian Tourism Accreditation Association were also used in the selection of specialist accommodation in North Queensland, as were accommodation guides and tourism brochures for the region (i.e. Atherton Tablelands, Daintree, and Mission Beach).

Three criteria were used to identify the specialist accommodation providers from study region. Firstly, small-scale accommodation operators with 25 rooms or less were chosen within the three geographic areas. Secondly, those specialist accommodation operators located approximately within 50 kilometres of a protected area (in particular, National Parks or the Wet Tropics World Heritage Area) were chosen. Thirdly, accommodation operations identified as ecotourism certified (e.g. Ecotourism Australia's EcoCertification Program), pertain to be eco-friendly (e.g. in their marketing or name), or market themselves as being located near or having access to rainforest or protected areas were selected. The specialist accommodation sectors examined are consistent with those of the ecotourism and nature-based tourism markets (Beeton, 1998; Wight, 1997), that is, the accommodation operation provides nature-based activities and markets its proximity to protected areas. A purposely created database of the specialist accommodation operations identified 91 eligible operations in the Atherton Tablelands, 32 operations in the Mission Beach area and 57 operations in the Daintree region, equating to a total of 180 specialist accommodation operations. The compiled database includes property name, name of the operator, street and postal address, telephone and fax numbers, email address, web address, Ecotourism Australia certified.

Each specialist accommodation operator was initially telephoned for the purpose of explaining the research project and asked if they would participate in the research. This initial process led to 164 specialist accommodation operations agreeing to participate in the study within the selected sub-regions of the Atherton Tablelands, Mission Beach and the area from Daintree to Cooktown. The *Specialist Accommodation Operation Survey* and manually coded reply paid envelopes were posted to the specialist accommodation operators during October 2004 (Appendix C; Section 3.3.2). Coding of the envelopes was undertaken so as not to follow-up accommodation operators whom had promptly returned the survey. Postal questionnaires have the advantage of being a low cost option, the avoidance of potential interview bias and allow the subject to complete the survey without pressure (Kidder & Judd, 1986).

Six weeks after the surveys were first posted, a reminder letter was sent to those operators who had not returned the survey asking if it was possible to complete and return. Approximately five weeks after the follow-up letter was sent, 75 establishments were contacted by telephone again. This final call involved asking if the survey had been accidentally misplaced and would they like another survey sent out by either post or email. This resulted in 19 surveys being resent by post and 17 being resent by email. Some operators voluntarily identified themselves on the survey, the reply paid envelope or by sending a brochure back with the survey.

An overall non-response rate of 38.4% found no systematic non-response bias evident in study. That is, there was no specific group of specialist accommodation operators or specific geographic location that did not agree to participate in the research. It should be noted that a small number of establishments when first contacted stated their accommodation was only small (three rooms or less) with the assumption that they would not be of interest to the researcher. These operators were assured on the telephone and in the follow-up letter that this research project was, in particular, targeting this style of accommodation with less than 25 rooms.

In total, 101 valid surveys were received from the Daintree Region (32), Mission Beach Region (19) and the Atherton Tablelands (50) and comprised the sample population. A total response rate of 61.6% was achieved. Table 3.1 depicts the returned surveys by the styles of specialist accommodation comprising the sample after being recoded for analysis. Some of the accommodation operators offer more than one style of accommodation on their property, for example, a caravan park that has powered caravan sites, cabins and camping sites. Under these conditions, the specialist accommodation operations were regrouped under the main style of the accommodation identified for the property. This process elicited eight sub-groups of specialist accommodation for ease of analysis as displayed in Table 3.1.

Table 3.1: Survey Respondents by Accommodation Style and Geographic Location

Style of Accommodation	Atherton Tablelands	Daintree	Mission Beach
Ecolodge	6	5	-
Retreat	-	2	1
B&B	14	11	5
Farmstay	6	4	2
Cottages/Cabins	8	3	2
Caravan Park	8	6	5
Licensed Hotel	6	-	1
Backpackers	1	-	3
Houseboat	1	-	-
Other	-	1	-
TOTAL	50	32	19

3.4.2 The Survey Instrument – Specialist Accommodation Operations

A pilot test of the *Specialist Accommodation Operation Survey* was undertaken with five specialist accommodation operators located near the Barron Gorge National Park in the Cairns City Council Shire during June 2004. Only small grammatical clarification modifications within the survey required amendment including directions for answering and bolding of key phrases.

The *Specialist Accommodation Operation Survey* (Appendix C) was mailed to specialist accommodation operators in Far North Queensland who had agreed to participate in the study. The survey instrument consisted of an introductory page explaining the purpose of the research and five sections of enquiry regarding background information of the accommodation establishment and the owner–operator, environmental certification, environmental management techniques and an environmental attitude measurement instrument. In total, the survey consisted of 36 questions with 11 open-ended questions and

additionally enquired about the implementation of 48 environmental management techniques. The final section of the survey consists of the 15-item New Ecological Paradigm statements and five additional environmental attitude statements.

Section A asked the respondent for **background information about the specialist accommodation business**. Sixteen questions deal with the style of accommodation and type of service provided (i.e. self-contained, bed and breakfast, meals with the host, share cooking facilities, meals with the host), the number of years the accommodation has been operating, whether it is a family business and number of guest rooms or cabins available. Enquiries were also made as to the location of the specialist accommodation in relation to protected areas. The use of voluntary land agreements were explored, as were the activities offered to guests, types of land areas used for the activities provided, intentions to expand the accommodation and whether the business operator is a member of an accommodation or tourism association.

Section B enquired about the **background information of the owner/operator** of the accommodation establishment. Demographic information was gathered from eleven questions including age, gender, education, occupation before the accommodation business and the primary reason for the move into the operation of a specialist accommodation. As well, enquiries are made regarding membership and support for environmental or conservation orientated groups or magazines. This line of enquiry is similar to that proposed by Dunlap and Van Liere (1978) and revised by Dunlap, Van Liere, Mertig and Jones (2000) to support the strength of environmental attitudes and as independent variables for analysis with the New Ecological Paradigm environmental attitude statements.

Section C was concerned with **environmental certification** of the specialist accommodation and adherence to 'codes of conduct'. Nine questions centred on ecotourism certification, the intention to gain ecotourism certification, and the use of voluntary environmental 'codes of conduct' was ascertained. The reasons for attaining or not attaining environmental certification were asked, as were the reasons for adhering to a

voluntary environmental code of conduct. Section C concludes with a query concerning the conduct of environmental audits at the specialist accommodation operation.

Section D asked about the **present and intended use of environmental management techniques** at the specialist accommodation operation. The 49 environmental management techniques were grouped under the headings of water management, energy management, liquid waste management, solid waste management, sustainable design and other sustainable practices. The environmental best practices recommended by Ecotourism Australia (2003); previous studies investigating the use of environmental management techniques within the tourism sector (Buckley & Araujo, 1997; Carlson, Getz & Ali-Knight, 1998; Firth & Hing, 1999; Whiley & Carter, 2002) and environmental monitoring and management publications (Boele, 1996; Tourism Queensland, 2002a) contributed to the list of environmental management techniques compiled for the survey. Additionally, the intention to implement an environmental management technique within the next five years by the specialist accommodation operator was explored. This section had two open ended questions asking for final comments about the sustainable use of natural resources and environmental practices by accommodation operators.

Finally, Section E attempted to **measure the environmental attitudes** or environmental concern of the specialist accommodation owner/operator from a list of 15 statements that comprise the New Ecological Paradigm (Dunlap, Van Liere, Mertig & Jones, 2000). The New Ecological Paradigm (NEP) statements (Table 3.2) are designed to tap each of five facets of an ecological worldview. These are the “reality of limits to growth (Statements 1,6,11), anti-anthropocentrism (2,7,12), the fragility of nature’s balance (3,8,13), rejection of exemptionalism (4,9,14) and the possibility of ecocrisis (5,10,15). The eight odd-numbered items are worded so that agreement indicates a pro-ecological view, and the seven even-numbered statements are worded so that disagreement indicates a pro-ecological worldview (Dunlap, et al. 2000, p.432)”. A Likert scale of 1=strongly disagree to 5=strongly measures the relationship between humans and their attitude towards the environment. The NEP scale has become a widely used measure of environmental attitudes

and beliefs, with endorsement of the NEP treated as reflecting a pro-environmental orientation (Dunlap, et al., 2000).

Table 3.2: New Ecological Paradigm Statements

Statements	
1.	We are approaching the limit of the number of people the earth can support
2.	Humans have the right to modify the natural environment to suit their needs
3.	When humans interfere with nature it often produces disastrous consequences
4.	Human ingenuity will insure that we do NOT make the earth unliveable
5.	Humans are severely abusing the environment
6.	The earth has plenty of natural resources if we just learn how to develop them
7.	Plants and animals have as much right as humans to exist
8.	The balance of nature is strong enough to cope with the impacts of modern industrial nations
9.	Despite our special abilities humans are still subject to the laws of nature
10.	The so-called “ecological crisis” facing humankind has been greatly exaggerated
11.	The earth is like a spaceship with very limited room and resources
12.	Humans were meant to rule over the rest of nature
13.	The balance of nature is very delicate and easily upset
14.	Humans will eventually learn enough about how nature works to be able to control it
15.	If things continue on their present course, we will soon experience a major ecological catastrophe

Source: Dunlap, Van Liere, Mertig and Jones (2000)

In evaluating attitude research on a particular topic, Pearce (1990b) adds it is often insightful to ask both the direction (evaluative) component of the attitude and the importance of holding that attitude to the individual. In trying to accomplish this, a combined approach has been taken by linking the environmental attitudes with the actual and intended environmental management techniques implemented by the style of specialist accommodation and owner-operator of the establishment.

Table 3.3 explains the purpose of the questionnaire items in relation to the objectives of the study. Relevant references referred to for the construction of the survey are provided indicating the origin of the question purpose.

Table 3.3: Relationship of Survey Questions to Objectives (Sections A and B)

Questionnaire Items	Qs	Question Structure	Purpose for Question	Objective	Relationship to Objectives	References
Style of accommodation	1	Multiple response	Accommodation characteristics	Objective 1	Specialist accommodation criteria	Wight (1997; 1998); Beeton (1998); Moscardo et al (1996); Pearce & Moscardo (1992)
Years operating;	2	Open-ended	Accommodation characteristics	Objective 1		
Family business	3	Dichotomous	Accommodation operator profile	Objective 1		
Size of accommodation	4	Open-ended	Accommodation characteristics	Objective 1	Specialist accommodation criteria	Moscardo et al (1996)
Location of accommodation (neighbour or within 50 km of protected area; nearest town; council shire)	5-10	Dichotomous	Location Regulatory parameters	Objective 4	Near protected area	
Voluntary land agreements	11	Multiple response	Accommodation characteristics	Objective 2		Carmody & Zeppel (2004); Wet Tropics Management Authority (2004a)
Meal service & Activities provided & location held	12-15	Multiple response	Accommodation characteristics	Objective 1	Specialist accommodation criteria	Moscardo et al (1996)
Association Membership	16	Multiple response	Accommodation operator profile	Objective 4		

Cont.../

Table 3.3: Relationship of Survey Questions to Objectives (Sections C - E)

Questionnaire Items	Qs	Question Structure	Purpose for Question	Objective	Relationship to Objectives	References
Demographic information (role; age; education; previous occupation; gender; reason for entering sector)	17-	Open-ended	Accommodation operator profile	Objective 1		
Environmental or conservation orientated (group member; magazine subscriptions; support the like)	25-27	Dichotomous	Accommodation operator profile; New Ecological Paradigm	Objective 2		Dunlap and Van Liere (1978)
Environmental certification	28-32	Multiple response		Objective 4	Compare environmental management techniques used by certified and non-certified operators	
Codes of conduct; codes of practice; environmental audit	33-36	Open-ended		Objective 4	Compare environmental management techniques used by certified and non-certified operators	
Environmental management techniques		Multiple response	Water, energy, liquid waste, solid waste, sustainable design, other sustainable practices	Objective 2	Identify environmental management techniques in use	Ecotourism Australia (2003); Carlson, Getz & Ali-Knight (1998); Firth & Hing (1999); Buckley & Araujo (1997)
Environmental attitude statements		Likert Scale	New Ecological Paradigm	Objective 3	Assess environmental attitudes of specialist accommodation operators	Dunlap, Van Liere, Mertig & Jones (2000) Olsen, Lodwick & Dunlap (1992)

3.4.3 The Survey Instrument – Tourism and Accommodation Associations

A second survey instrument was designed for the tourism and accommodation associations identified within the *Specialist Accommodation Operations Survey* (Appendix C) by the specialist accommodation operations respondents holding membership within an association. This one-page *Tourism Association Survey* (Appendix F) contained six questions asking about the size and purpose of the association, the existence of an environmental policy or environmental code-of-conduct, recommendations for environmental best practice and the existence of environmental awards for its members. All of the questions were multiple response style. Nineteen associations were emailed (n=15) or posted (n=4) to each association with a reply-paid envelope. Those associations posted a survey did not have an email address. Fourteen associations returned a completed survey resulting in a 73.7% response rate.

3.4.4 Limitations of the Quantitative Approaches

There are a number of limitations in the quantitative study approaches which should be brought to the attention of the reader. Formation of a database of specialist accommodation operations within the geographic regions for the study yielded 180 accommodation operations. After telephoning the entire possible sample to ask if they would participate in the research, 164 affirmative responses were received. The response rate for postal surveys in this study of 61.1% attained higher than average response levels of less than 50.0% for mail-out questionnaires (Kidder & Judd, 1986). Although the survey sample size is not large (i.e. 101 respondents), it is a representative sample of the specialist accommodation sector in Far North Queensland. Jennings (2001) points out the general rule for small populations are that the sample size needs to be large. Krejcie and Morgan's (1970, cited in Jennings, 2001, p. 148) table of sample sizes and known populations indicates a population of 160 would require a sample size of 113. Based on this, the sample size in this study is generally representative. This sample size did limit the level of statistical analysis able to be performed although the use of descriptive techniques and non-parametric techniques can not to be underestimated.

Recognition should also be given to the omission of one specialist accommodation in the sample of specialist accommodation operations. The Cook Shire hosts the northern most section of the WTWHA however distance and cost factors limited the opportunity to interview the Cook Shire council town planner and contributed to the decision to remove the Shire and one accommodation operation from the respondent sample. There is no indigenous owned and operated specialist accommodation within the Wet Tropics WHA bioregion and for obvious reasons are not included in the study. Specialist accommodation including ecolodges with more than 25 rooms or cabins were not included in the study as defined by the criteria postulated by Morrison, et al (1996). The focus of the study is owner-operated specialist accommodation with a guest capacity of less than 25 rooms. Although these styles of accommodation have prominence nationally and globally in many hinterland and regional areas near protected areas, time and cost factors defined the geographical areas of research for this study (refer Section 3.2).

Although it was recognised financial status of the specialist accommodation operator may have some bearing on the proclivity to adopt green innovations, profitability was not solicited in the survey instrument. In early discussions with specialist accommodation operators it became apparent they would not disclose their profitability and the pilot survey reiterated this. Therefore, questions pertaining to profitability were purposely omitted from the research design and final survey.

3.4.5 Methods of Analysis

Analysis of the surveys from specialist accommodation operators and the tourism and accommodation associations used the statistical software package, SPSS version 13.0. Although a 61.6% response rate was achieved from the specialist accommodation operations, the small sample size (n=101) did limit the employment of higher statistical analysis techniques. However, the use of descriptive analysis techniques cannot be dismissed as an invaluable method for identifying and explaining a relatively unexplored sector of this tourism industry within Queensland and Australia. Non-parametric analysis techniques were also used, namely the Kruskal-Wallis Test, Chi-square analysis and

Spearman Rank Order Correlation. Chi-square test for independence determines whether two categorical variables are related. It is used to examine the similarities and differences between the implementation of environmental management techniques and the specialist accommodation operation locations by region and local council Shire. Spearman Rank Order correlation was used to assess the degree of association between the style of specialist accommodation and the implementation of various environmental management techniques for water conservation, energy management, waste management, sustainable building design and other sustainable practices. The tourism and accommodation association surveys exploring the existence of environmental codes of practice were subjected to frequency and cross tabulation analysis.

The New Ecological Paradigm (Dunlap, et al, 2000) statements were first approached by replicating two identifiable analysis methods espoused by previous researchers (Dunlap, et al, 2000; Albrecht, et al, 1982; Floyd, et al, 1997; Cordano, et al, 2003). Before statistical analysis of the NEP, reverse coding of the negatively worded statements to show an individual's complete acceptance or rejection of the NEP was performed (Dunlap & Van Liere, 1978, Floyd, Jang & Noe, 1997). The 15 NEP statements were subjected to principal components analysis (PCA) with varimax rotation to confirm the underlying dimensions of environmental concerns in the context of specialist accommodation operations study. PCA has the ability to determine the smallest number of factors that best represent the interrelations among the set of variables (Pallant, 2005).

The corrected item-total correlation shows "the degree to which responses to that item are correlated with the aggregate responses to the remaining items: the higher the correlation for each item the better that item represents the underlying construct" (Grenstad, 1999, p. 196) thus measuring the internal consistency/ reliability of the NEP instrument. Cronbach's alpha exceeding a value of .70 is an acceptable measure of internal reliability (Pallant, 2005). "A high degree of internal consistency is a necessary condition for combining a set of items into a single measure as well as an appropriate (albeit not

essential) expectation for item responses constituting a reasonably coherent worldview” (Dunlap, et al. 2000, p. 434).

The second approach to analysis of the NEP involves summing of the respondent’s total NEP score. This method has previously been employed by others (Floyd, Jang & Noe, 1997; Scott & Willits, 1994) to identify groups of respondents having similar levels of environmental concern. In this study, visual bander (available in SPSS v. 13.0) recognized three groups of respondent’s with similar levels of environmental concern. Visual bander allows for continuous scale variables to be grouped similar to using the if/then commands that were only available in earlier versions in the SPSS software analysis program. For example, grouping respondent’s age or number of years operating an accommodation.

Spearman’s Rank Order Correlation is employed to determine the strength of the relationship between the factor groups and indicator variables (Pallant, 2005). This method is used to predict variables contributing to the respondents’ levels of environmental concern including gender, age, and education, those who are members of an environmental or conservation group, subscriptions to an environmental or conservation magazine, support for an environmental or conservation group and those who conduct an environmental audit.

3.5 Qualitative Methodological Approach

Face-to-face semi-structured interviews were conducted from November 2004 to May 2005 with selected specialist accommodation operators (n=30) and staff from regulatory bodies (e.g. shire councils, WTMA) (n=8) deemed to interrelate with the specialist accommodation sector. The interviewees were initially contacted by telephone, the purpose of the research explained and an agreement of a suitable interview time. All of the interviews were conducted at either the regulatory agency’s place of business or at the specialist accommodation establishment. Approximately ten to fifteen questions were asked at each interview (see Appendices D, F & G) pertaining to environmental codes of

conduct, environmental management techniques recommended and in use and the barriers to implementing certain environmental behaviours were recorded.

Semi-structured interviews have the advantage of allowing the interviewer to ask for further clarification on a topic in question, as well allowing a more relaxed style of interview to take place with the aim of having the interviewee at ease. Interviews have the advantage of allowing the interviewer to “notice and correct the respondent’s misunderstandings, to probe inadequate or vague responses and to answer questions and allay concerns” (Kidder & Judd, 1986, p. 225). Importantly, personal interviews enable the interviewer to collect quality data, establish rapport and motivate the respondent to answer accurately and fully (Kidder & Judd, 1986). A decision was made to only take notes and not audio-record interviews for the reason of not wanting to create a formal interview feeling and it was felt that interviewees may restrain from answering some questions for fear of the audio-recording process.

3.5.1 Specialist Accommodation Operations

A total of 30 interviews were undertaken across the three geographic areas of interest based on the absolute numbers of specialist accommodation operators who returned a completed survey. The process for choosing the specialist accommodation operators for interviews was by systematic selection. Those accommodation operators who sent a brochure back with the *Specialist Accommodation Operator Survey* or with invitations for further assistance if required were first contacted for an interview. The returned surveys from each geographic region were Atherton Tablelands (50), Daintree (32) and Mission Beach (19). This generally equates to a 50-30-20% breakdown of survey respondents and therefore it was deemed a similar approach should be used to quantify the number of interviews needed to be conducted with owner-operators in each geographic region.

Consideration was also given to the number of respondents for each of the styles of specialist accommodation, that is, more interviews were apportioned in each region to the

most survey respondents in the respective accommodation style. Therefore, specialist accommodation operations were chosen and contacted by telephone asking if it was possible to conduct an interview; a zero non-response to interviews was achieved indicating a high interest in the research project. Table 3.4 shows the number of surveys returned and the interviews conducted within the study.

Table 3.4: Specialist Accommodation Survey Respondents and Interviews

Style of Accommodation	Atherton Tablelands		Daintree		Mission Beach	
	Survey	Interview	Survey	Interview	Survey	Interview
Ecolodge	6	-	5	1	-	-
Retreat	-	-	2	1	1	-
B&B	14	4	11	3	5	1
Farmstay	6	2	4	1	2	-
Cottages/Cabins	8	4	3	-	2	1
Caravan Park	8	3	6	3	5	2
Licensed Hotel	6	2	-	-	1	1
Backpackers	1	-	-	-	3	1
Houseboat	1	1	-	-	-	-
Other	-	-	1	-	-	-
TOTAL	50	15	32	9	19	6

The general interview process firstly involved introductions and a brief explanation of the research project as a requirement of the university degree. The interviews were conducted in a generally relaxed format with cups of tea and glasses of water provided by the accommodation operator. In all of the interviews a good rapport tended to establish itself between the specialist accommodation operator and the interviewer. At each interview, the original research question was firstly relayed to the participant in order to clarify the research purpose – “How are specialist accommodation operations helping to protect the environment around them” and “Is environmental certification necessary or applicable to the specialist accommodation sector?” Secondly, the university research ethics approval was explained and an informed consent form detailing the nature of the research and the

use of the interview data for academic research and publication was signed by the interviewee. As recommended by Kidder and Judd (1986), the introduction was brief and positive and once the interview began, the manner was friendly, conversational, courteous and unbiased.

With the formalities completed, the interviews were conducted as a semi-structured interview with questioning centred upon in general order the history of the establishment, the reason for being in the accommodation business, environmental management techniques and their reasons for implementation, any barriers to the implementation of environmental management techniques, and the perceived benefits of ecotourism certification. In addition, the specialist accommodation owner/operator was asked if they have in the past or are given any type of financial, environmental or economic advice or support from the local council, environmental agencies or tourism associations. These interviews ranged in length of time from one to one and a half hours on average. All of the interviewees gave a tour of the property and/ or specialist accommodation lodgings enabling a mental confirmation and verification of the style of the accommodation and the environmental management techniques in use. Permission was sought from the owners to take photos of the accommodation styles and various environmental management techniques (for example grey water systems and biocycle systems) in place.

3.5.2 Regulatory Bodies

Interviews were conducted with regulatory bodies considered to be important stakeholders of relevance to the specialist accommodation sector. Town planners from the local council Shires were selected for their knowledge of the planning and environmental requirements for tourism accommodation and probable interaction with the specialist accommodation operators. The environmental regulation stakeholder considered of importance is the Wet Tropics Management Authority and an interview was held with the senior planning officer of this regulatory body. Only a telephone interview was held with the Environmental Protection Agency, Northern Region and the reasons for this are elaborated on in section 3.4.3.

The interviews were conducted during November 2004 and June 2005. Each interview took between 25 minutes and 1 hour approximately and was held at the council shire offices. The Shire town planner was first contacted by telephone, the research project was briefly explained and an interview time agreed upon. The semi-structured interviews were conducted with a list of questions taken to the interview however this was not regimentally asked in any order and allowed the interviewee to clarify information further. Where necessary, the interviewer picked up the line of questioning by using the list of questions (Appendix G) as a guide to ascertain the required information about council planning regulations and environmental management practices. Table 3.5 provides details of the interviews conducted with the shire council town planners and the WTMA for this study.

Table 3.5: Interviews with Staff from Regulatory Bodies

Sub-Region	Council Shires	Interviewee Position	Interview Date
Atherton Tablelands	Atherton	Town Planner	11 Nov 2004
	Mareeba	Town Planner	11 Nov 2004
	Eacham	Town Planner	11 Nov 2004
	Herberton	Consultant Town Planner	03 Dec 2004
Daintree	Douglas	Town Planner	31 May 2005
Mission Beach	Johnstone	Town Planner	15 Dec 2004
	Cardwell	Town Planner	27 June 2005
Protected Area Agency			
	Wet Tropics Management Authority	Principal Planning Officer	04 Mar 2005

The regulatory bodies are broken down into Council Shire jurisdictions and protected area agencies. Town planners were chosen from the Shire Councils due to their knowledge of the environmental planning and tourism approval process required in each jurisdiction. In addition, at the time of the interviews from November 2004 to May 2005, all local government shires in Queensland were in the process of redrafting a new shire-planning

scheme under a state government directive (i.e. *Integrated Planning Act 1997*) and it was assumed that conditions affecting the specialist accommodation operators would be fresh in the minds of the town planners. The interviews with the environmental regulatory agencies were undertaken with the principal planning officer at WTMA who is aware of the impacts and benefits of having specialist accommodation neighbouring on protected areas in a tourism region.

3.5.3 Limitations of the Qualitative Approaches

Interviews were confined to a determined number of specialist accommodation operations (n=30). In reality, it would have been useful to be able to interview all of the specialist accommodation operations in the survey sample but this was beyond the scope of this research project. Financial limitations were also a factor due to the cost of car hire, petrol and overnight accommodation.

The interviews had the dual purpose of allowing observational data to be collected at each specialist accommodation interview, that is, photographs were taken of the varying accommodation styles and environmental management techniques in place with permission from the specialist accommodation operators. These photographs have not been included in the results of this study, as analysis of these is beyond the scope of this thesis. However, they were used to visually remind the researcher of environmental practices or techniques adopted at the specialist accommodations.

On a number of occasions attempts were made to organise an interview with an appropriate senior staff member from the Environmental Protection Agency, Northern Region. This proved more difficult than anticipated and only a brief telephone conversation (unrecorded) was obtainable. However, it was indicated in this brief conversation that the Environmental Protection Agency would have only limited contact with specialist accommodation operations. Reasons for contact would be the owner wanting to conduct tours or to put the name of a bordering National Park on their brochure or website which requires permit

approval from the Environmental Protection Agency's Queensland Parks and Wildlife Service (QPWS). The only other reason for contact may be initiated by the specialist accommodation operator if they desired to put walking tracks in neighbouring protected areas of their property.

3.5.4 Methods of Analysis

Qualitative data analysis has three main stages (Punch, 2005) involving a deductive approach of data reduction, data display and the drawing and verifying of conclusions (Huberman & Miles, 1998). Data reduction is the representation of qualitative data into identifiable categories, themes and concepts with the data display being an ideographic display generated from the data reduction process (Jennings, 2001). The drawing and verifying of conclusions is revealed by constantly comparing the data leading to support, or lack of support for conceptual theoretical ideals.

Thematic coding of the interview results was first undertaken within the analysis process identifying similar themes and concepts about environmental attitudes and environmental management practices. This process led to direct quoting of characteristic statements and supports the quantitative results obtained from the purposely designed specialist accommodation operator survey. This multi-methodological approach provides a more robust analysis of the issues, internal factors and external factors affecting the operation and adoption of environmental practices by specialist accommodation owner-operators. Both the quantitative and qualitative results are presented in Chapter 4 (Specialist Accommodation and Environmental Practices) and Chapter 5 (Regulatory Bodies and the Specialist Accommodation Sector).

3.6 Summary

This chapter has described the three geographic areas of research and the methods of data collection employed for the study. The Atherton Tablelands, Daintree region and Mission

Beach region are defined by the local Council Shires. A multi-methodological approach was taken to achieve the aim and objectives of the research focusing on 101 specialist accommodation operations, 14 tourism and accommodation associations, seven local Shire council town planners and two environmental management agencies. Both quantitative and qualitative methods (i.e. surveys and interviews) examined the implementation of environmental management techniques by specialist accommodation operators located near protected areas in Far North Queensland.

Two separate surveys were purposely designed for the specialist accommodation operations and the tourism and accommodation associations. The postal survey to specialist accommodation operators contained 36 questions in three sections focused on background information of the business, information about the owner/ operators and environmental certification and codes of conduct. Two further sections included a list of 44 environmental management techniques and lastly, the New Ecological Paradigm (Dunalp, et al, 2000) measured the environmental attitudes of the specialist accommodation owner-operators. A discussion of the methods of analysis applied to the quantitative and qualitative data is provided, as are the limitations encountered during the research process. The survey for the tourism and accommodation associations contained six questions focused on the existence of environmental polices, codes, awards and any intentions to draft these in the near future. This survey was either emailed or posted to the associations.

A total of 38 semi-structured interviews spanning one to two hours were conducted with 30 of the specialist accommodation sample, a town planner from each of the seven local Shire councils in the study, and with the senior planning officer of the Wet Tropics Management Authority. These interviews were taken at the specialist accommodation operation site, the council office and at the WTMA office. A friendly approach was used to encourage a relaxed atmosphere with a brief and positive introduction provided (see Kidder & Judd, 1986).

The following two chapters present both the quantitative and qualitative results of this study which has examined the environmental management techniques implemented by specialist accommodation operators, the environmental attitudes held by the specialist accommodation operators located near protected areas in Far North Queensland, Australia and the interaction of regulatory agencies with the specialist accommodation sector.

CHAPTER 4: SPECIALIST ACCOMMODATION AND ENVIRONMENTAL PRACTICES

Structure of the Chapter

4.1 Introduction

4.2 Respondents

4.3 Distribution of Specialist Accommodation Operations

4.4 Characteristics of the Specialist Accommodation Operations

4.5 Environmental Attitudes of Specialist Accommodation Operators

4.6 Environmental Management Techniques

4.7 Barriers to Implementing Environmental Management

4.8 Environmental Tourism Certification

4.9 Codes of Environmental Practice

4.10 Summary

“I have learnt that people are here to relax and enjoy the environment”

(Cottage operator, Ravenshoe)

4.1 Introduction

This thesis has investigated the specialist accommodation sector located near protected areas of far North Queensland surrounding Cairns. The geographical areas examined are the Atherton Tablelands, Mission Beach region and the Daintree region. Specialist accommodation includes bed and breakfast operations, farm stays, ecolodges, spas and retreats, guesthouses, cottages and cabins, caravan and camping parks and licensed public hotels. There are five criteria that discern the specialist accommodation sector (Morrison et al, 1996). These are:

1. A personal interaction between the guests and the owner hosts;
2. A special opportunity or advantage to guests is offered through location, features of the establishment, or services;
3. Special activities are offered to guests;
4. Owner-operated; and
5. Small guest accommodation capacity (generally less than 25 rooms).

This chapter begins by describing the physical characteristics of the specialist accommodation operations and the socio-demographic characteristics of the owner-operators of these styles of accommodation. The results of the environmental attitudes and concern for the environment held by the specialist accommodation operators based on the New Ecological Paradigm (NEP) (Dunlap, et al, 2000) then follow. Finally, both the quantitative and qualitative results for the implementation of environmental management techniques and other sustainable practices by the specialist accommodation operators, the barriers to implementing environmental management practices and the uptake and adherence to environmental certification and codes of conduct are presented. A number of quotations for each area of enquiry are provided to show the range of comments received from the different accommodation style operators and regional areas of the study. Direct quotes were recorded in pencil and where a quote was deemed important during the interview; this was repeated and recorded in the exact manner in which it was stated.

4.2 Respondents

A total of 101 specialist accommodation operations returned a completed self-administered postal survey. Face-to-face semi-structured interviews were then conducted with 30 of these operators at their specialist accommodation property. The number of interviews was determined by the number of surveys received from the specialist accommodation sample, along with time and cost factors (see 3.4.1). Fifteen interviews were conducted with specialist accommodation operators on the Atherton Tablelands, nine interviews within the Daintree region and six interviews in the Mission Beach region (see Table 4.1). This chapter presents both the quantitative and qualitative results obtained from these data methods about specialist accommodation, along with the level of environmental concern and environmental management practices of operators.

Table 4.1: Summary of Specialist Accommodation Operator Surveys and Interviews

	Surveys	Interviews
Atherton Tablelands	50	15
Daintree	32	9
Mission Beach	19	6
Total	101	30

4.3 Distribution of Specialist Accommodation Operations

The three geographic areas of research in this study are all located within two hours driving distance from Cairns, Queensland. Specialist accommodation operations were chosen from the Atherton Tablelands, Mission Beach region and Daintree region based on the criteria of the specialist accommodation definition (Morrison, et al, 1996) and their proximity (i.e. within 50 kilometres) to the Wet Tropics World Heritage rainforests and other protected areas of North Queensland.

Table 4.2 shows the distribution of the survey sample across the three geographic regions of research. The majority of operations were located on the Atherton Tablelands (51.5%) which is an elevated hinterland area renowned for its much cooler climate than the coastal humid lowland areas of Cairns. Four shire councils or local government areas (Eacham, Mareeba, Herberton and Atherton) cover the majority of the Atherton Tablelands. Douglas Shire, which encompasses the Daintree region and the northern most sector of the WTWHA, included 29.7% of the sample. The Mission Beach region south of Cairns accounted for 18.8% of the respondents which include the council shires of Johnstone and Cardwell.

Table 4.2: Location of Specialist Accommodation Operations

Local Shire	Frequency	Percent
<i>Atherton Tablelands Region</i>	52	51.5
Eacham Shire	19	18.8
Mareeba Shire	12	11.9
Atherton Shire	11	10.9
Herberton Shire	10	9.9
<i>Daintree Region</i>	30	29.7
Douglas Shire	30	29.7
<i>Mission Beach Region</i>	19	18.8
Johnstone Shire	11	10.9
Cardwell Shire	8	7.9
TOTAL	101	100.0

4.3.1 Proximity to Protected Areas

The specialist accommodation respondents were asked to indicate if their property was located within 50 kilometres of a protected area or neighbouring a protected area. The entire sample stated their accommodation operation neighbours or is located within 50 kilometres of a protected area, particularly the Wet Tropics WHA and National Parks. Table 4.3 indicates 31.7% (n=32) of the specialist accommodations neighboured a protected area, mostly the Wet Tropics WHA, whilst 94.0% (n=94) of the respondents were located within 50 kilometres of a protected area. Other types of protected areas identified by specialist accommodations as neighbouring or within close proximity were environmental and nature reserves, wildlife corridors, a heritage listed mine site, Tinaroo Dam, a high conservation environmental park near Malanda, and the Peterson Creek wildlife and botanical walk located near Yungaburra on the Atherton Tablelands.

Table 4.3: Proximity of Specialist Accommodations to a Protected Area

	Neighbour Protected Area		Within 50km of Protected Area	
	Frequency	Percentage of Responses	Frequency	Percentage of Responses
Wet Tropics WHA	19	43.2	80	43.0
National Park	13	29.5	65	34.9
State Forest	3	6.8	38	20.4
Other	9	20.5	3	1.6
Total Responses*	44	100.0	186	100.0

*Multiple Response Question - respondents indicated all protected areas applicable

4.3.2 Specialist Accommodation Styles

The *Specialist Accommodation Operation Survey* (Appendix C) allowed respondents to indicate all the styles of accommodation that defined their specialist accommodation operation from a given list on the survey. Recoding of the styles of specialist accommodation was undertaken to regroup the specialist accommodation operations into one main category of accommodation for further analysis. Individual cases were assessed on the style of accommodation provided by examining the accommodation brochure and website. For example, an accommodation indicating their operation to be a farm stay and bed and breakfast was regrouped to be a farm stay, particularly where farm activities were offered as part of the attraction of the specialist accommodation operation. An operation indicating they accommodated guests through camping, caravans and cabins was recoded as a caravan park.

The predominant styles of accommodation within the sample (Table 4.4) is the bed and breakfast (B&B) accommodation (34.7%), cottages and cabins (16.8%) and caravan parks (15.8%) comprising more than half of the sample (67.3%).

Table 4.4: Style of Specialist Accommodation

Accommodation Style	Frequency	Percentage
Bed & Breakfast	35	34.7
Cottages & Cabins	17	16.8
Caravan Park & Camping	17	16.8
Farm stay	10	9.9
Public Hotel	9	8.9
Retreat	6	5.9
Backpackers Hostel	4	4.0
Other*	3	3.0
Total	101	100.0

*Other includes guesthouse, ecolodge and houseboat

A defining criterion for a specialist accommodation operation is the number of rooms available to guests. According to Morrison, et al (1996), 25 rooms or less is considered the maximum for this style of accommodation. The results presented in Table 4.5 indicate more than half of the sample had five rooms or less (64.0%) at their accommodation. Only 20.0% of the sample had 11 rooms or more and only one accommodation has the maximum 25 rooms as defined by the specialist accommodation criteria (Morrison, et al, 1996). The mean of guest rooms at specialist accommodation operations surveyed in this sample is 5.8 rooms. Consequently, the sample represented a valid group of specialist accommodation operations.

Table 4.5: Number of Guest Rooms at Specialist Accommodation

	<i>Frequency</i>	Percent
2 rooms or less*	21	21.0
3 rooms	26	26.0
4 - 5 rooms	17	17.0
6 - 10 rooms	16	16.0
11 rooms or more	20	20.0
Total	100	100.0

*Includes two operations with nil rooms – these operations only provide camping and caravan sites

4.3.3 Intention to Expand

The specialist accommodation operators were asked on the survey if there was any intention to expand the size of their operation within the next five years. Those who indicated they intended to expand their operations (29.7%, n=30) have predominantly considered the construction of additional cabins and cottages on their specialist accommodation property. These additions were mainly pertaining to another two or three cabins/ cottages, but they would still have less than 25 rooms.

4.4 Characteristics of the Specialist Accommodation Operations

This section describes the demographic profile of specialist accommodation operators, details about their accommodation operation style, and the special services and activities provided to guests. This section of the results also presents the membership held with tourism and accommodation associations by specialist accommodation operators, followed by the natural features and attractions of the various specialist accommodation properties being described.

4.4.1 Demographic Profile

The demographic characteristics of the owner-operators of the specialist accommodation sector sampled in North Queensland are provided in Table 4.6. A higher percentage of females (60.4%) were indicated in the sample. As shown in Table 4.7 the majority (80.2%) of the specialist accommodation operations were managed by a male-female (husband/ wife/ de facto) team. However, this may well be attributed to the female owner-operator attending to correspondence and administration of the business. The qualitative interviews with operators indicated that often the women in the accommodation's operational partnership tend to the administrative matters of the business including correspondence.

The specialist accommodation operators were predominantly aged in the 50-59 year age group (34.0%). Those aged in the 40 – 49 year age group (21.3%) and the 60 – 69 year age

group (18.1%) were also reasonably prominent. In total, operators over the age of 40 years equated to 77.5% of the respondents. These results indicate a mature population of specialist accommodation operators. The education level of the specialist accommodation operators was relatively evenly distributed with the highest percent of respondents achieving an education up to year 10 (23.0%). Those with tertiary and trade qualifications equated to 55.0% of the total sample, with 37.0% of these operators having a university education.

Table 4.6: Profile of Specialist Accommodation Operators

	Frequency	Percent
<i>Gender</i>		
Male	40	39.6
Female	61	60.4
<i>Age</i>		
Less than 29 years	5	5.3
30-39 years	16	17.0
40-49 years	20	21.3
50-59 years	32	34.0
60-69 years	17	18.1
More than 70 years	4	4.3
<i>Education</i>		
Up to grade 10	23	23.0
Secondary Senior	13	16.0
Trade Certificate	18	18.0
Associate Diploma	17	17.0
Tertiary	17	17.0
Postgraduate	3	3.0

4.4.2 Operating the Specialist Accommodation

Other details about the operator of the specialist accommodation were gathered from the respondent survey. In particular, who the respondents operated the accommodation with, the length of time operating, the operator's previous occupation and reason for moving into the specialist accommodation business were covered.

Almost all of the specialist accommodation operators in the sample classed their business as a family business. There was 29.7% (n=30) of the sample who indicated their role as owner and 61.4% (n=62) indicated they were the owner-operator of the specialist accommodation operation. This results in 91.1% (n=92) of the accommodation operations surveyed as owner-operated family businesses. Another 9.0% of operators, indicated their role as being the manager of the business, however further clarification of this role indicated the managers are related to the owner-operator or own the establishment in a business partnership.

Table 4.7 shows that the majority of the specialist accommodation operations surveyed are owned and operated by husband/ wife or de facto teams, although family members and business partners may assist in some daily tasks.

Table 4.7: Who Operates the Specialist Accommodation Operation?

	Frequency	Percent
With husband/wife/partner	81	80.2
With immediate family	15	14.9
Myself	8	7.9
With friends	4	4.0
Other	4	4.0
With colleagues	3	3.0
With other family	2	2.0
Total	117*	

*Multiple Response – respondents were asked to indicate all parties with whom they operate the business

Table 4.8 provides a comparison of the number of years the present owners have been operating their specialist accommodation to the number of years the property has been operating in an accommodation capacity. Visual bander was used in the SPSS software analysis program to group the length of time for years operating this accommodation and for the life of the accommodation. This process allows for continuous scale variables to band results into categories.

Most respondents have been operating their specialist accommodation between three and eight years (42.6%) and two years or less (37.6%). The average length of time a specialist accommodation has operated as an accommodation establishment is 15.2 years. Only 2.0% of the respondents had operated their accommodation for 20 years or more. However, 20.0% of the properties had been in existence as an accommodation business for 20 years or more. The present specialist accommodation operators have run their accommodation for a maximum of 25 years with an average operating time of 4.5 years. The maximum number of years a specialist accommodation operation has been functional is 124 years, this being a licensed public hotel. The licensed public hotels have been in existence an average of 46.3 years. Excluding the licensed public hotels, all of the other specialist accommodation styles have been in existence for an average of 10.8 years.

Table 4.8: Time Operating the Accommodation and Life of Accommodation

Length of Time	Years Operating this Accommodation*		Life of Accommodation**	
	<i>Frequency</i>	<i>Percent</i>	<i>Frequency</i>	<i>Percent</i>
2 years or less	38	37.6	20	20.0
3 – 8 years	43	42.6	38	38.0
9 – 19 years	18	17.8	22	22.0
20 years or more	2	2.0	20	20.0
Total	101	100.0	100	100.0

*min=1 month; max=25years; sd=4.01years; mean=4.5years

**min=1 month; max=124years; sd=20.62years; mean=15.2years

Figure 4.1 provides a graphical interpretation of Table 4.8. There is an increasing trend up to eight years for both the life of the accommodation and the present owners operating time and a noticeable decline in the owner-operators still operating a specialist accommodation business after eight years.

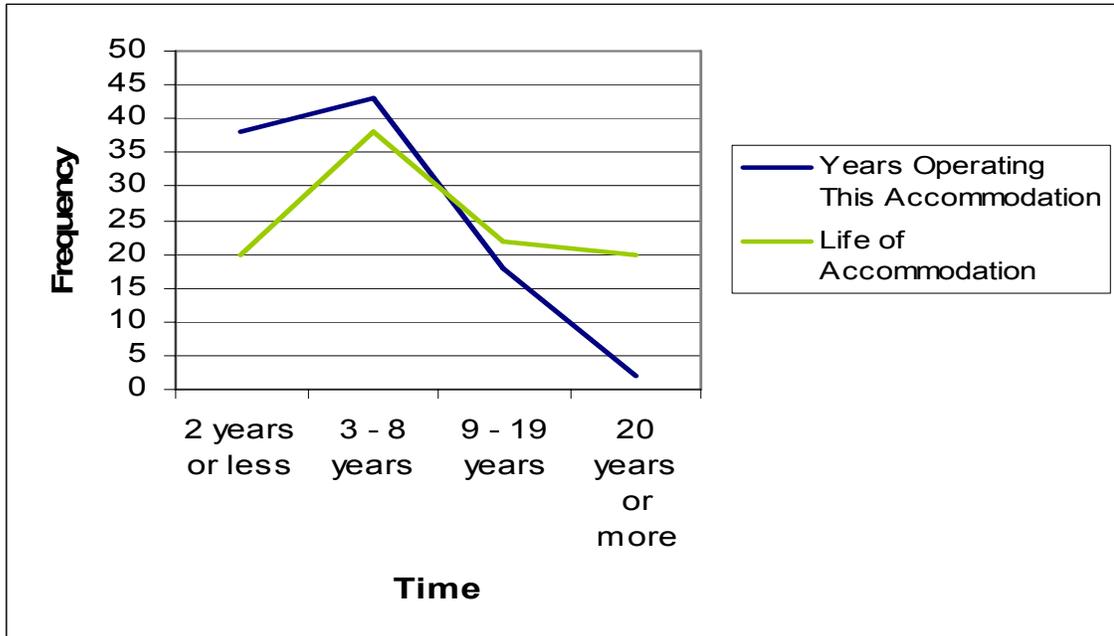


Figure 4.1: Comparison between Life of Accommodation and Present Ownership of Accommodation

Enquiries were made as to the previous occupation of the specialist accommodation operators. These occupations were then regrouped into categories of a similar nature. Table 4-9 indicates trades (n=24) were the highest category, followed by those with a background in the hospitality/ tourism industry (n=21), small business (n=21) and from professional backgrounds (n=20). Specifically though, the highest number of respondents had a previous occupation within the hospitality industry (n=15), farming/ horticulture (n=13), retail (n=9), trades (n=9) and the nursing/medical industry (n=8).

Table 4.9: Previous Occupation before Specialist Accommodation

<i>Category</i>	<i>Previous Occupation</i>	<i>Frequency</i>	<i>Total Responses per Category</i>
Trade	Tradesperson	9	
	Education	7	
	Sales/ Advertising	7	
	Information Technology	1	24
Professional	Engineer	6	20
	Management	5	
	Finance	4	
	Mining	2	
	Service Professional	3	
	Small Business	Retail	9
Hospitality/ Tourism	Office/ Clerical	6	
	Private Business	3	
	Decoration/ Arts	3	
	Hospitality	15	21
	Tour/ Accommodation operator	3	
Health & Welfare	Hotelier	2	
	Airline Employee	1	
	Nursing/ Medical	8	14
	Massage/ Alternative Health	4	
Environment	Community Welfare	2	
	Farmer/ Horticulture	13	14
	National Parks	1	
Other	House Duties	2	4
	Retired	1	
	Public Service	1	
Total Responses			118*

*Total more than n=101 due to some respondents listing an occupation from each partner.

An understanding of people's reasons for moving into the operation of a specialist accommodation was investigated through an open-ended question within the survey. These reasons have been regrouped into appropriate categories for easier reading and understanding in Table 4.10. Personal reasons (n=64) were highest, in particular, most operators were seeking a change of lifestyle (n=33). Others were motivated by the opportunity and challenge (n=7), and being semi retired/ retired (n=5).

Secondly, financial reasons (n=11) were cited for the reason to undertake a specialist accommodation operation. Financial necessity and an income supplement were reasons given. Thirdly, family reasons (n=6) including being a family owned business, to involve the family or having a family allowed operation of an accommodation business.

Finally, some respondents indicated they felt there was a perceived demand (n=6) for their specialist accommodation operation. The most common reason cited was the perception of a market need for specialist nature accommodation in rural areas, particularly on the Atherton Tablelands.

Table 4.10: Reason for Move into Specialist Accommodation Operation

<i>Category</i>	<i>Reason</i>	<i>Frequency</i>	<i>Total Responses per Category</i>
Personal Reasons	Change of lifestyle	33	64
	Opportunity & challenge	7	
	Semi retired/ retired	5	
	Pleasure/ leisure/ enjoyment	3	
	Home business	3	
	Career change	2	
	Previous experience	2	
	Love of rainforest & wildlife	2	
	Work from home	2	
	Interest in hospitality	2	
	Reside here	1	
	Interest in people & environment	1	
	A dream	1	
	Financial Reasons	Financial necessity	
Income supplement		4	
To be self-employed		1	
Sale of previous business		1	
Family Reasons	Family owned business	3	6
	Involve family	2	
	Have family	1	
Perceived Demand	Market need	3	6
	Location for hospitality industry	1	
	Growth industry	1	
	Astronomy observatory	1	
Diversification	Value add to farm/ property	2	4
	Diversify from cane farming	1	
	Diversification	1	
Total Responses			91*

*Total responses n=<101 due to missing data.

4.4.3 Guest Services

The second and third criteria defining specialist accommodation operations provided by Moscardo et al. (1996) and Morrison et al. (1996) are a special opportunity or advantage to

guests is offered through location, features of the establishment, or services; and special activities are offered to guests. This section describes the style of meal service provided by the different accommodations, the guest activities provided for visitors, and the natural features and attractions of the properties.

To understand the style of accommodation operation offered to the guest, respondents were asked to indicate on the survey which types of meal service are provided (Table 4.11). Bed and breakfast meal packages were the most frequently cited response (54.5%) and self-contained kitchens (50.5%). Self-contained accommodation allows the guest to cook their own meals and relinquishes all responsibility for meals from the host. Only 10.9% of the businesses provided meals to their visitors in their style of accommodation. This can be attributed to additional licensing requirements for the preparation of meals for guests at the specialist accommodation operation.

Table 4.11: Style of Meal Service Provided at Specialist Accommodation

<i>Meal Service Style</i>	<i>Frequency</i>	<i>Percent</i>
Bed & Breakfast	55	54.5
Self-Contained	51	50.5
Meals with the Host	19	18.8
Share Cooking Facilities	14	13.9
Other	13	12.9
Meals Included	11	10.9
Total Responses	163*	

*Multiple Response – various styles of meal service available at some accommodation operations

4.4.4 Guest Activities

Figure 4.2 below provides a bar graph of the activities provided by the specialist accommodation operations for their guests' enjoyment. Relaxation and reading (77.2%), bird watching (77.2%), native wildlife viewing (65.3%), bush walking/ walking tracks (59.4%) and swimming (58.4%) were the most common activities provided. These types of nature-based activities are conducive to the rainforest environment where these specialist

accommodation operations are located near the Wet Tropics WHA and other protected areas.

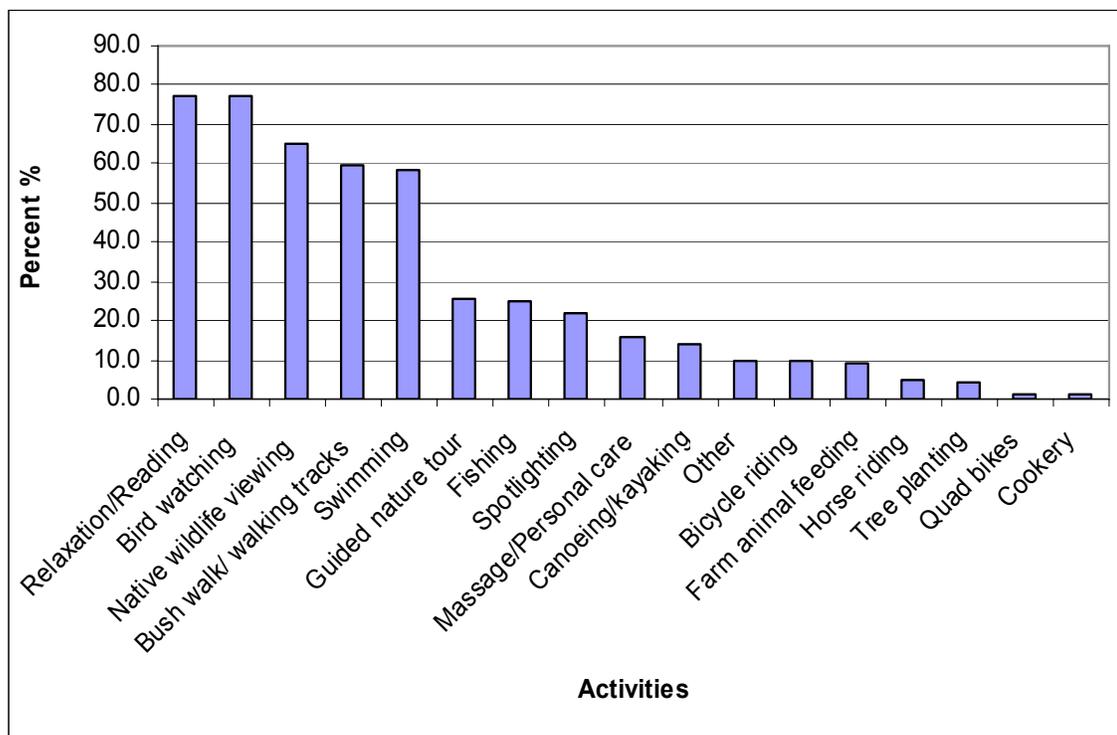


Figure 4.2: Activities Provided for Guests at Specialist Accommodation

Operators interviewed within the three geographical areas, indicated other special activities were provided for. The stocking of dams with catch and release fish were a feature of one retreat style accommodation property.

“Guests can catch and release silver and golden perch and sleepy cod in one dam, and barramundi in the other two dams” (*Retreat operator, Julatten*)

“We specifically put in our own walking tracks – marked now for guests – information for guests to take on walks, trees are marked with information regarding species, etc” (*Cottage operator, Tolga*)

“Farm activities are a great attraction” (*Farm stay operator, Millaa Millaa*)

The tenure of land where the guest activities are conducted is shown in Table 4.12 and highlights the use of private freehold land (92.0%) for guest activities. Another 41.0% of guest activities were in nearby protected areas. Observations made at various specialist

accommodation operations during interviews indicated the importance of rest and relaxation in natural or rural areas, and the viewing of native wildlife and birdlife directly accessible from the guest accommodation.

Table 4.12: Land Used for Guest Activities

<i>Land Tenure</i>	<i>Frequency</i>	<i>Percent</i>
Private Freehold Land	92	92.0
National Park	24	24.0
Wet Tropics WHA	17	17.0
Shire Council land	15	15.0
River	14	14.0
State Forest	11	11.0
Lake	10	10.0
Other	5	5.0
Total Responses	188*	

*Multiple Response – respondents were asked to indicate all land tenures used for activities

4.4.5 Natural Features and Attractions

The natural features and attractions of each specialist accommodation operation were identified through the face-to-face interviews with selected operators and by observation during a tour of the specialist accommodation property whilst conducting the interview. Mostly, the operator identified the special natural features or attractions of the accommodation and the surrounding area. From the interviews on the Atherton Tablelands, it is evident protected areas surrounding the specialist accommodation and the endemic fauna are promoted as tourism attractions. In particular, platypus, Lumholtz tree kangaroos and birdlife are iconic species on the Atherton Tablelands which augment the specialist accommodation experience.

“[The] pond in front of [the] cottage has platypus and tree ferns, and there are 12 species of bamboo on the property. The Misty Mountains trails are off Tully Falls Road, I will drop you off at the trailhead and take your car to the end of the walk so you can get in your car at other end.” (*Cottage operator, Ravenshoe*)

“On Lake Tinaroo” (Houseboat operator, Kairi)

“Wooroonooran State Forest and Mt Bartle Frere [neighbour]. Birdlife, native flora” (*Cabin operator, Malanda*)

“Rainforest, platypus, possums” (*Cottage operator, Ravenshoe*)

“[The] creek has platypus,” (*Cabin operator, Ravenshoe*)

“Wildlife [is a] great attraction includes Lumholtz Tree Kangaroo” (*Caravan Park operator, Malanda*)

“Only three National Park caves in the area and over 700 documented caves -geology and fossicking interest in Chillagoe, birdwatchers would be great to attract” (*Cabin operator, Chillagoe*)

“Stargazing and nearby caves” (*Caravan Park operator, Chillagoe*)

“Natural bushland, we have put in a creek walk from the cottages” (*Cottage operator, Yungaburra*)

“Platypus, water dragons, butcher birds, kookaburras, natural little waterfalls” (*Farm stay operator, Millaa Millaa*)

“Eagles, flora and fauna” (*Farm stay operator, Tolga*)

Within the Daintree region, specialist accommodation operators when interviewed indicated the Wet Tropics World Heritage listed rainforests hosting birdlife and fauna habitat were key visitor attractions.

“Wet Tropics World Heritage rainforest, flora and fauna, birds” (*Retreat operator, Daintree*)

“Documented 160-180 species [of birds] in the area – 550 birds in Wet Tropics, and at least 200 in immediate vicinity – lots of parrots and raptors” (*Caravan park operator, Julatten*)

The interviews with specialist accommodation operators conducted within the Mission Beach region referred to cassowaries and their rainforest habitat being an important natural iconic attraction of the area.

4.4.6 Tourism or Accommodation Association Membership

The specialist accommodation operators were asked to indicate on the survey if they were currently a member of any tourism or accommodation associations. Of interest is the membership with local and sector specific tourism associations. Table 4.13 denotes memberships were highest with local tourism associations including the Bed and Breakfast and Farmstay Association of Far North Queensland (30.7%), Tropical Tablelands Tourism (26.7%), Mission Beach Tourism (18.8%), and Tourism Tropical North Queensland (17.8%). Coincidentally, 10.9% (n=11) of respondents indicated being members of the Port Douglas Daintree Tourism Association, Daintree Village Tourism Association and the Daintree Cape Tribulation Tourism Association.

Membership with tourism associations indicated as other (20.8%) include local accommodation groups such as the Malanda Accommodation Group and Yungaburra Business and Citizen Association; caravan park associations including Top Tourist Parks of Australia, Big 4, Campervan and Motorhome Club of Australia (CMCA) and Caravan Industry Australia. Memberships were also held with the Hotel and Motel Accommodation Association (HMAA), the Youth Hostels Association (YHA) and Backpackers Association of Cairns. Only 5.9% of the surveyed specialist accommodation operators were not a member of any tourism or accommodation association.

Table 4.13: Tourism and Accommodation Association Membership

<i>Association</i>	<i>Frequency</i>	<i>Percent</i>
Bed & Breakfast & Farmstay Association of Far North Queensland	31	30.7
Tropical Tablelands Tourism	27	26.7
Mission Beach Tourism	19	18.8
Tourism Tropical North Queensland	18	17.8
Caravan Parks Association (Qld)	13	12.9
Port Douglas Daintree Tourism Association	11	10.9
Daintree Village Tourism Association	11	10.9
Daintree Cape Tribulation Tourism Association	11	10.9
Australian Hotels Association	8	7.9
Atherton Tablelands Accommodation Group	7	6.9
NOT a member of any tourism association	6	5.9
Wildlife Tourism Australia	5	5.0
Ecotourism Australia	3	3.0
Other	21	20.8
Total Responses	191*	

*Multiple Response – respondents were asked to indicate all association memberships

4.5 Environmental Attitudes of Specialist Accommodation Operators

Environmental attitudes were measured using the New Ecological Paradigm (NEP) as developed, revised and tested by Dunlap, Van Liere, Mertig and Jones (2000). The first fifteen statements comprise the NEP. The NEP statements are worded positively or negatively to describe environmental processes. A Likert scale of 1= strongly disagree to 5= strongly agree is used to measure agreement with the NEP statements. Odd-numbered statements have a biocentric viewpoint and the even-numbered statements are anthropocentrically worded. Therefore agreement with the odd-numbered items and disagreement with the even-numbered items indicate pro-NEP responses (Dunlap, et al, 2000). Three statements are each designed to tap one of five hypothesised facets of an ecological worldview. These are ‘the reality of limits to growth’ (statements 1, 6, 11); ‘anti-anthropocentrism’ (2, 7, 12); ‘the fragility of nature’s balance’ (3, 8, 13); ‘rejection of exemptionalism’ (4, 9, 14); and the ‘possibility of an ecocrisis’ (5, 10, 15).

4.5.1 Reliability of the NEP

According to Dunlap, et al., (2000), the NEP has good internal consistency with a Cronbach's alpha coefficient reported of .83. In the current study the Cronbach's alpha coefficient for the entire 15 item NEP is .87 confirming the internal consistency of the scale. Reliability analysis of each of the items loading on each factor was undertaken. Cronbach's alpha of .78 for factor 1, .69 for factor 2 and .71 for factor 3 were achieved indicating a strong item correlation for each factor.

4.5.2 NEP Analysis

Initial analysis results of the 15-statement NEP with the percentage of respondents (n=90) who rated the statements on a Likert scale from 1=strongly disagree to 5=strongly agree are provided in Table 4.14. The mean result of each statement is also presented followed by the corrected item-total correlations for each statement in the last column. All of these corrected-item total correlations are reasonably strong, ranging from a low of .38 to a high of .71 and the Cronbach's alpha is .87. Therefore the evidence from this analysis suggests the NEP is an internally consistent and reliable measuring instrument (Dunlap, et al, 2000; Grenstad, 1999).

Table 4.14: New Ecological Paradigm Statements

<i>Statements</i>	SD %	D %	N %	A %	SA %	Mean	<i>r(i-t)</i>
Do you agree or disagree* :							
1. We are approaching the limit of the number of people the Earth can support.	6.0	18.0	23.0	32.0	21.0	3.49	.55
2. Humans have the right to modify the natural environment to suit their needs.	23.2	41.4	18.2	16.2	1.0	3.70	.51
3. When humans interfere with nature it often produces disastrous consequences.	3.0	5.1	11.1	49.5	31.3	3.99	.46
4. Human ingenuity will ensure that we do not make the Earth unliveable.	11.3	34.0	21.6	27.8	5.2	3.19	.66
5. Humans are severely abusing the environment.	6.0	18.0	19.0	30.0	27.0	3.49	.53
6. The earth has plenty of natural resources if we just learn how to develop them.	4.1	12.4	15.5	60.8	7.2	2.44	.41
7. Plants and animals have as much right as humans to exist.	1.0	4.0	7.0	44.0	44.0	4.24	.52
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	33.0	45.0	13.0	7.0	2.0	3.94	.51
9. Despite our special abilities humans are still subject to the laws of nature.	-	1.0	8.0	59.0	32.0	4.19	.38
10. The so-called “ecological crisis” facing humankind has been greatly exaggerated.	26.0	23.0	25.0	25.0	1.0	3.43	.63
11. The earth is like a spaceship with very limited room and resources.	3.1	20.4	19.4	35.7	21.4	3.52	.55
12. Humans were meant to rule over the rest of nature.	33.0	39.0	11.0	14.0	3.0	3.77	.51
13. The balance of nature is very delicate and easily upset.	-	7.0	7.0	46.0	40.0	4.16	.47
14. Humans will eventually learn enough about how nature works to be able to control it.	20.2	29.3	18.2	32.3	-	3.33	.56
15. If things continue on their present course we will soon experience a major ecological catastrophe.	2.0	14.3	27.6	34.7	21.4	3.61	.71

SD=strongly disagree; D=disagree; N=neutral; A=agree; SA=strongly agree; *r(i-t)* = corrected item-total correlation

*Agreement with the eight odd-numbered items and disagreement with the seven even-numbered items indicate pro-NEP responses.

Analysis of the NEP statements involving principal components factor analysis with varimax rotation results are presented in Table 4.15. Further analyses were carried out after first reverse scoring even-numbered items 2, 4, 6, 8, 10, 12, and 14.

Table 4.15: Principal Components Analysis of the NEP Items with Varimax Rotation

		<i>Factors</i>		
		1	2	3
NEP 1	(Limits to growth)	.775	-.043	.234
NEP 10	(Eco-crisis)	.695	.364	.105
NEP 11	(Limits to growth)	.674	.155	.135
NEP 15	(Eco-crisis)	.660	.358	.276
NEP 13	(Balance of nature)	.524	.204	.185
NEP 2	(Anti-anthro)	-.051	.752	.229
NEP 4	(Anti-exemption)	.483	.660	.085
NEP 8	(Balance of nature)	.441	.623	-.102
NEP 12	(Anti-anthro)	.167	.560	.330
NEP 14	(Anti-exemption)	.225	.546	.302
NEP 3	(Nature's balance)	.094	.138	.786
NEP 5	(Eco-crisis)	.205	.244	.683
NEP 7	(Anti-anthro)	.122	.340	.638
NEP 9	(Anti-exempt)	.378	-.069	.533
NEP 6	(Limits to growth)	.235	.281	.288
Eigenvalue		5.43	1.33	1.17
Percentage of variance		36.24	8.89	7.86

The 15 New Ecological Paradigm (NEP) attitude statements were subjected to principal components analysis using SPSS version 13.0. Prior to performing PCA the suitability of data for factor analysis was assessed. The correlation matrix showed a large amount of coefficients of 0.3 and above. The Kaiser-Meyer-Olkin value was 0.863, exceeding the recommended value of 0.6 and Bartlett's Test of Sphericity is statistically significant ($p < 0.05$). This supports the factorability of the correlation matrix. A criterion for a meaningful correlation of usually .32 or larger can be interpreted (Tabachnick & Fidell, 2001). A cut of .50 (25% overlapping variance) used is considered a good measure of the factor and for inclusion of a variable in interpretation of a factor (Comfrey & Lee, 1992, cited in Tabachnick & Fidell, 2001).

Principal components analysis indicated the presence of three factors with eigenvalues exceeding 1 (5.43, 1.33 and 1.17). These explained 36.24%, 8.89% and 7.86% respectively and accounted for a cumulative percentage of 53.00% of the total variance explained. Using the scree test, the decision was made to retain the three factors. The use of Parallel analysis further supported this choice whereby three components with eigenvalues exceeded the corresponding criterion values for a randomly generated data matrix of the same size (15 variables x 101 respondents). Factor analysis with Oblimin rotation also produced three factors accounting for the same variance as the Varimax rotation (53.003%).

Interpretations of factor loadings (Table 4.15) indicate three components evident amongst the sample of specialist accommodation operators. When the three factors with eigenvalues greater than one are subjected to varimax rotation, five items load most heavily on the first factor: two limits to growth (1,11), two eco-crisis (10, 15) and one balance of nature (13). This factor loads most heavily on statement 1, ‘We are approaching the limit of the number of people the Earth can support’ (.775). This concern is supported by statements 10, 11 and 15 also loading on this factor, “The so-called ‘ecological crisis’ facing humankind has been greatly exaggerated” (.695); “The Earth is like a spaceship with very limited room and resources” (.674); and “If things continue on their present course we will soon experience a major ecological catastrophe” (.660). Interpretation of the first rotated factor suggests this is a group of specialist accommodation operators who are pro-environmental and realise the importance of conservation and environmental protection for future generations. In an ecological worldview, these operators appear to be aware of limitations to what the natural environment can support and realise the impact population growth and overcrowding can have on the natural environment.

The five items loading most heavily on the second varimax rotated factor are two anti-anthropocentrism items (2, 12), two anti-exemptionalism items (4, 14) and one balance of nature item (8). Loading is highest for NEP item 2 “Humans have the right to modify the natural environment to suit their needs” (.752), followed by item 4 “Human ingenuity will ensure that we do not make the Earth unliveable” (.660), item 8 “The balance of nature is

strong enough to cope with the impacts of modern industrial nations” (.623), item 12 “Humans were meant to rule over the rest of nature” (.560) and item 14 “Humans will eventually learn enough about how nature works to be able to control it” (.546). Interpretation of this component indicates an anthropocentric ecological worldview held by these operators. It would appear this group of operators are the least pro-environmental tending to have the view nature is available for their own benefit, protection is unnecessary and humans will be able to rectify any impacts caused by their own actions.

The third component loads most heavily on NEP item 3 “When humans interfere with nature it often produces disastrous consequences” (.786), item 5 “Humans are severely abusing the environment” (.683), item 7 “Plants and animals have as much right as humans to exist” (.638) and item 9 “Despite our special abilities humans are still subject to the laws of nature” (.533). This group of operators appear to be realistic about the impact of people’s actions on the environment already; they are concerned about the state of the environment and realise humans and nature need to co-exist for the benefit of future environmental sustainability.

An alternative method of totalling the NEP scores after reverse scoring the negative statements for each case provides three levels of environmental concern. The 15 attitude statements on a Likert rating scale of 1 – 5 avails a minimum score of 15 (anthropocentric) to a maximum score of 75 (biocentric). This method of analysis has been previously undertaken by Floyd, et al (1997). The mean of the NEP score for the sample of specialist accommodation operators (n=90) is 54.5. Using quartiles to create three groups of environmental concern resulted in respondents with a score of 60 or greater being considered to have a high ecological worldview (n=27). Respondents with NEP scores between 47 and 60 (n=42) were considered to have a moderate ecological worldview (Table 4.16).

Table 4.16: NEP Scores by No. of Respondents

<i>NEP</i>	<i>Low NEP Group</i>	<i>Moderate NEP Group</i>	<i>High NEP Group</i>
	<i><=46</i>	<i>47-60</i>	<i>=>60</i>
No. of Respondents	21 (23.3%)	42 (46.6%)	27 (30.0%)

NEP – Min = 38; Max = 74; Mean = 54.5

Figure 4.2 provides a diagrammatical display of the NEP scores of respondents ranging from the minimum of 38 to a maximum of 74.

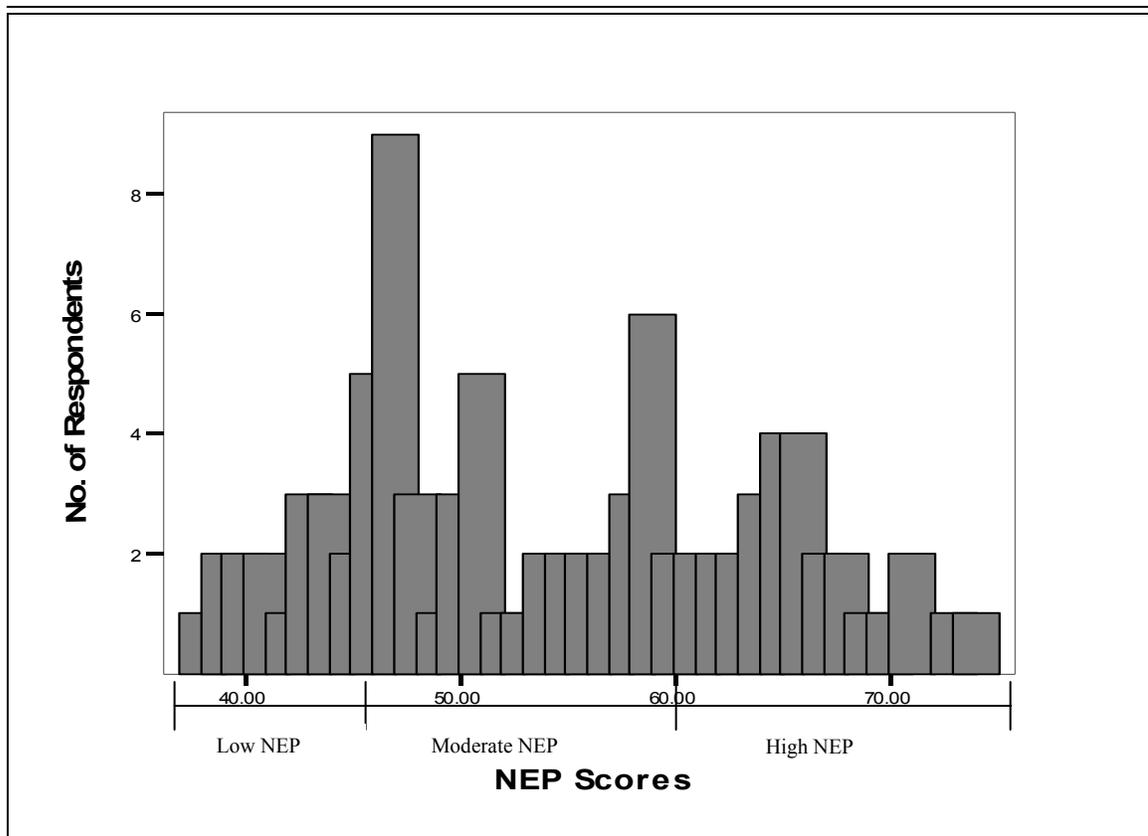


Figure 4.3: Distribution of NEP Scores for Specialist Accommodation Operators

Cross-tabulation of the total attitude score held by each specialist accommodation respondent resulted in no statistical significance for the implementation of the environmental management practices, the style of accommodation, whether nature-based

activities were provided such as bird watching or native animal viewing, neighbouring a protected area, or membership with an environmental or conservation group.

4.5.3 Environmental Concern

People’s environmental concern in this survey was examined through a number of questions apart from the New Ecological Paradigm. Specialist accommodation owner-operators were asked to indicate if they were members of an environmental or conservation organisation, paid an annual subscription for an environmental or conservation magazine, or if they supported an environmental or conservation group in any manner. The results in Table 4.17 indicate only a small percentage (15.0% - 19.0%) of the specialist accommodation operators were members, subscribers or supporters of environmental or conservation organisations.

Table 4.17: Measures of Environmental Concern

	<i>Frequency</i>	<i>Percent</i>
Support an environmental/ conservation group	19	18.8
Member of an environmental/ conservation group	17	17.0
Subscribe to an environmental/ conservation magazine	15	14.9

4.5.4 Correlates of Environmental Concern

The strength of the relationship between the three attitude types of specialist accommodation operators (i.e. those labelled co-exist with nature, anthropocentrics and pro-environmentalists) and various indicators were investigated using Spearman’s Rank Order Correlation (Table 4.18). There is a moderate positive correlation between the ‘anthropocentrics’ and being a member of an environmental or conservation group ($\rho=.349$, $n=89$, $p<.01$). The correlations between the seven indicators and the NEP however are generally weak and statistically insignificant.

Other variables such as, size of the operation, length of time operating the business, distance from the WTWHA boundary for example were tested against the specialist accommodation operators' levels of environmental concern. However, the correlations were statistically weak due to the small sample size and consequently a small cell size (<5 respondents) in the results.

Table 4.18: New Ecological Paradigm Factors and Indicators

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Mean</i>	<i>Std Dev.</i>
	<i>Co-exist with Nature</i>	<i>Anthropocentrics</i>	<i>Pro-environmentalists</i>		
New Ecological Paradigm ^a				54.5	9.46
Gender ^b (n=90)	[1] -.028 [2] .794 [3] .0007	.017 .870 .0002	-.217* .040 .04	1.60	.49
Age (n=85)	.047 .669 .0022	.083 .449 .0068	.016 .882 .0002	49.17	12.43
Education (n=90)	.063 .554 .003	-.221* .036 .048	.047 .661 .002	4.22	1.78
Member of env/ conservation group (n=89)	.040 .711 .0016	.349** .001 .121	-.049 .649 .002	1.83	.37
Subscribe to env/conservation magazine (n=90)	-.186 .078 .03	.274** .009 .07	-.125 .240 .015	1.85	.35
Support env/ conservation group (n=90)	-.111 .300 .012	.224* .034 .050	.020 .848 .0004	1.81	.39
Conduct environmental audits (n=87)	-.140 .197 .019	-.005 .962 .000	.238* .026 .0566	2.88	1.50

[1] Spearman's rho [2] Significance (2-tailed) [3] Coefficient of determination

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

^a Additive index based on the 15 items, reverse scoring items 2, 4, 6, 8, 10, 12, 14 (see Table 4.14): total scores from 15 (total rejection of the NEP) to 75 (complete endorsement of the NEP)

^b 1=female, 2=male

4.6 Environmental Management Techniques

The main aim of this thesis is to understand the present use and future intentions for the implementation of environmental management techniques at specialist accommodation operations located near protected areas in North Queensland. The environmental management techniques are assembled under water management, energy management,

liquid waste management, solid waste management, sustainable design and other sustainable practices. The environmental management techniques explored were chosen from various benchmarks established by Ecotourism Australia, Green Globe 21, AAA Tourism, and previous literature investigating environmental management practices and sustainability, particularly within the Australia tourism industry (Schaper & Carlsen, 2004; Firth & Hing, 1999; Buckley & Araujo, 1997).

4.6.1 Water Management

Water is our most precious resource. The installation of water management techniques most frequently cited by specialist accommodation owners on the surveys were dual flush toilets (85.1%), low flow shower heads (56.4%) and the provision of showers only (49.5%) in guest accommodation as can be seen in Table 4.19. Future intentions for water management techniques were for the installation of low flow shower heads (5.0%) and solar hot water (4.0%).

Other water management techniques (5.9%) in use were the mulching of gardens to reduce water use and the installation of permanent spas in cabin and cottage accommodation that is often located on their verandas. These spas allow for chemicals to be added to keep the spa clean rather than emptying and refilling spas after each guest and thus increasing water usage, “bore water and rainwater mix perfect for the Ph level for spas” (*Cabin operator, Tolga*). One cabin operator in Mission Beach has purposely designed their cabins to allow for stormwater roof runoff to fall into a natural rock gully system which then drains off into the surrounding rainforest.

Table 4.19: Water Management Techniques at Specialist Accommodation

	Percentage in use	Percentage intending
Dual flush toilets	85.1	2.0
Low flow shower heads	56.4	5.0
Showers only provided	49.5	1.0
Drip irrigation for gardens	40.6	2.0
Rainwater tanks	36.6	3.0
Tap aerators	36.6	-
Solar hot water	16.8	4.0
Other	5.9	-

The interviews conducted with operators on the Atherton Tablelands and the Daintree showed a common water management technique where town water is not connected is the practice of pumping water up from creeks to storage tanks and being gravity fed to cabins, treehouses and cottages.

“Spring water pumped up to two tanks then gravity fed down to treehouses” (*Cabin operator, Malanda*)

“Water pumped up from creek – three springs [run] into the creek” (*Farm stay operator, Millaa Millaa*)

“Water is pumped up from the creek then gravity fed to cabins” (*Cabin operator, Ravenshoe*)

Rainwater tanks were also a common collection and storage technique for eight of the fifteen interviewees on the Atherton Tablelands, as is the use of bore water.

“Rainwater collection, two 50,000 litre tanks – rainfall [is] 700mm/year, all in wet season” (*Caravan park operator, Chillagoe*)

“Rainwater tank on each cottage for gardening or can be used for drinking if guest desires” (*Cottage operator, Yungaburra*)

“Rainwater tanks – no town water” (*B&B operator, Kuranda*)

“No town water – put in two rainwater tanks (a 3000 gallon for cottage and an 11000 gallon for house). Two millimetres of rain per square metre of roof area = one litre” (*Cottage operator, Ravenshoe*)

A combination of two or more methods to sustain a yearly water supply was a common water management technique in place as well.

“All water pumped up to 50,000 litre holding tanks on top of the hill. We have bore water and rain water at guest lodges. The bore water is for toilets, laundry and garden taps. Already we have two water storage tanks in place for the new lodges and will relocate these next to the lodges when ready – [presently] this water gets pumped into the main holding tank” (*Cottage operator, Tolga*)

“I use bore water, rainwater [for] standby” (*Farm stay operator, Tolga*)

At Chillagoe on the north western side of the Wet Tropics WHA, where the area is rich in mining history and has approximately 700 limestone caves, a water softener is needed for the harshness of the water caused by the high lime content in the ground. At Irvinebank, also on the western side of the Wet Tropics, water is gravity fed from mine dams.

“Use rainwater tanks and have a bore for [the] yard. We have five electric hot water systems – cost effective and have a water softener for [the] tap” (*Cabin operator, Chillagoe*)

“Water – gravity fed from mine tailings dam” (*Licensed Hotel operator, Irvinebank*)

Interviews within the Daintree region yielded similar information to those held on the Atherton Tablelands. Much of the region is not connected to town water and is therefore reliant on various methods of water collection and storage.

“Water is all from our waterfall, use a bore and gravity fed to holding tank then sent around the property for drinking, etc” (*Ecolodge operator, Daintree*)

“Windmill pumps water up for the house and cabins – clean ground water” (*Cabin operator, Daintree*)

“Two bore water [shafts] – very deep (100ft) for good drinking water” (*Retreat operator, Daintree*)

“We pump water from our own creek [to] rainwater collection tanks. All water from [the] creek is tested quarterly – water pumped up to holding tank (44,000L) then gravity fed down to cabins” (*Retreat operator, Julatten*)

Within the Mission Beach region where town water is virtually connected to all areas of the Johnson and Cardwell Shires, interviews tended to focus on water management conservation techniques.

“No dishwashers [put into cabins] purposely so as not to waste water and power” (*Cabin operator, Mission Beach*)

“Have bore water for garden irrigation and to top up the pool” (*Caravan park operator, Kurrimine Beach*)

“Have changed toilet flushing ballcock for water efficient device – only fills half of the cistern” (*Caravan park operator, Mission Beach*)

“Dual flush toilet and low flow shower heads used almost everywhere” (*Caravan park operator, Mission Beach*)

“Town water and rainwater collection tank on accommodation” (*B&B operator, Mission Beach*)

Other comments regarding water management included the perception of off-site laundries being more efficient to wash linen and towels used in specialist accommodation, and the maintenance of tap washers, shower heads and dual flush toilet installation.

“I do regular maintenance of tap washers. Own laundry – towels every second day, sheets changed twice weekly” (*B&B operator, Mossman*)

“Replaced shower heads. Slowly changing over to dual flush as necessary” (*Caravan Park operator, Malanda*)

4.6.2 Energy Management

Table 4.20 presents the results of energy management practices either in use or intended to be used by specialist accommodation operations. The use of ceiling fans only (not air conditioners) (59.4%) and the installation of energy efficient light bulbs (55.4%) were the most used energy management technique by specialist accommodation operators. Five operators intended to install energy efficient light bulbs as existing light bulbs needed renewal. Other energy techniques (6.9%) alluded to were gas heating, hot water being supplied by a donkey boiler, slow combustion fireplaces, timers installed to reduce gas usage in gas heaters, power saving cabin key tags, solar heated pool and water pumped from creeks by a ram pump. The only houseboat operation in the region on Lake Tinaroo uses 12 volt fluorescent lights charged by the 4-stroke outboard motors when the boat is in operation.

Table 4.20: Energy Management Techniques at Specialist Accommodation

	Percentage in use	Percentage intending
Ceiling fans only	59.4	3.0
Energy efficient light bulbs	55.4	5.0
Diesel or ethanol blend fuel	26.7	-
Solar power	14.9	1.0
Hydroelectric power	5.9	-
Cogeneration	3.0	-
Wind turbines	1.0	-
Other	6.9	-

During the interviews held with the specialist accommodation operators, energy management techniques and the reasons of choice were explored. In particular, topics most frequently covered were the use of energy efficient light bulbs and solar power. As an alternative, solar power can generate enough energy depending on battery storage to power a small accommodation facility. One farm stay operator commented that he generates enough solar power to sufficiently supply half of his property and he can sell some of this generated power back to the state electricity grid, “solar power – generate half of own power and sell some back to the grid, I also have solar hot water and use solar to pump water for cattle” (*Farm stay operator, Tolga*).

On the Atherton Tablelands, the use of gas cooking and slow combustion timber heating is an effective efficient energy management technique that contributes to guest comfort. Other inventive cost saving environmentally friendly techniques evidenced during these interviews.

“Gas hot water better – instant heat when required rather than holding heated water which is more costly” (*Cabin operator, Tolga*)

“No clothes dryers, only airers provided and no hot water to the washing machines. Slow combustion timber heating in lodges (one has gas heating with a timer). Now we have signage asking guests to turn off air conditioning/ heating” (*Cabin operator, Tolga*)

“Timber for firewood is scrap building timber” (*Cabin operator, Malanda*)

“Solar power used due to prohibitive cost [to put powerlines through] and practical, did not want to knock down rainforest. Solar power and turbine – hybrid system invented by me (owner) allows all power to be stored 24V – converted back to 240V for use in cottages. Solar power and turbine in creek (micro hydro) has been in operation 20 years or so. 240V converts to 24V a/c (hydro) combines with solar 24V d/c then stored in battery bank at 24V a/c, inverter converts back to 240V a/c for distribution around the property. Under RAPS scheme was 75% rebate, now approximately 50%” (*Cottage operator, Ravenshoe*)

“Firewood in camp kitchen/ bar area helps heat the pool and the smell of burning wood is good [for atmosphere]. Pool now [part] undercover – black pipes on roof for heating and [pool] blanket keeps it warm, plus the donkey and fireplace” (*Cabin operator, Chillagoe*)

The interviews conducted in the Daintree region identified two different areas needing different energy management techniques. On the north side of the Daintree River where there is no electricity provided, generator use is standard.

“We have two generators for 24 hour power – tourist demand” (*Caravan park operator, Daintree*)

However, the rest of the Douglas Shire is connected to the state electricity grid and it was found accommodation operators in these locations were able to focus their efforts on other useful energy management techniques.

“I try and persuade guests not to use air conditioning and to turn off the lights if not using them. I am changing light bulbs over to energy efficient when require new bulbs” (*B&B operator, Mossman*)

Similarly in the Mission Beach region where six interviews were conducted with operators, energy management techniques in use included lighting being on night tariffs and the installation of energy efficient light bulbs. Two caravan park operators both indicated the use of gas hot water being the most efficient technique for an amenities block.

“Energy efficient light bulbs around outside of the amenity block” (*Caravan park operator, Mission Beach*)

“Long life energy efficient bulbs for street lighting – use night tariff” (*Caravan park operator, Kurrimine Beach*)

“Solar hot water on the accommodation” (*B&B operator, Mission Beach*)

“Gas hot water in toilet block – cost efficient and suitable” (*Caravan park operator, Mission Beach*)

“Gas hot water to amenities block and half of the cabins” (*Caravan Park operator, Kurrimine Beach*)

4.6.3 Liquid Waste Management

Only three techniques were enquired about within liquid waste management. The highest usage was for grey water reuse (21.8%) (Table 4.21). This is normally undertaken through effluent recycling being used for garden and lawn irrigation. Only 17.8% of the specialist accommodation operations treated sewage for reuse on gardens and lawns. Other liquid waste management techniques used were septic tanks (mainly due to sewerage systems not available in the area), Aqua Nova septic system (aerobic and anaerobic biocycle systems), and the collection of black and grey water pumped into holding tanks for breakdown and finally irrigation.

Table 4.21: Liquid Waste Management Techniques

	<i>Percentage in use</i>	<i>Percentage intending</i>
Grey water reuse	21.8	-
Treated sewage reuse	17.8	1.0
Composting toilets	5.0	1.0
Other	6.9	-

During the interviews with the specialist accommodation operators, grey water reuse was the most discussed liquid waste management technique. Of the thirty interviews conducted, fifteen of the operators indicated the reuse of grey water predominantly for garden and lawn irrigation. These operators often indicated their awareness of the impacts of grey water reaching natural watercourses and were mindful of this fact, having various methods of collection and dispersion. On the Atherton Tablelands grey water systems and biocycle systems were discussed with the specialist accommodation operators.

“Grey water [goes] through septic into soakage pit 15 metres away from the creek, clay soil causes it to go straight down into [the] soil” (*Cabin operator, Ravenshoe*)

“Grey water system (from laundry and kitchen) recently put in, previously emptied into creek [from previous owner] – now two tanks, one settling tank, then pumped onto lawn, it saves the septic and creek” (*Caravan park operator, Chillagoe*)

“Grey water runs off laundry and shower onto back lawn” (*Farm stay operator, Millaa Millaa*)

Where accommodation operators were not connected to the sewer system, the use of biocycle systems dominated.

“Sewerage biocycle already here when bought property – think it’s a regulation for being so close to a water course. The biocycle system [has] two tanks (aerobic and anaerobic) and it is pumped back into gardens; checked every three months by consultant and copy sent to council” (*Cabin operator, Ravenshoe*)

“These are the only houseboats on east coast of Australia collecting all black and grey water in holds. We pump out sullage [from houseboats] into own sewerage holding tanks designed by council. The two sewage holding tanks take black and grey waste and once bio-digested can be pumped up onto own land far away from lake” (*Houseboat operator, Tinaroo*)

“Clearwater 90 recycles for grey and black water and then irrigate around [the] lawns” (*Cabin operator, Tolga*)

One operator had ingeniously set up the toilet system so as less water was wasted down the septic system

“Toilets now on drip refill cistern and timer from 11.00am to 12.00 midnight, so now toilets flush into septic once in 50 minutes” (*Licensed hotel operator, Kairi*)

Within the Daintree region, similar techniques were in place for grey water disposal by both directly irrigating gardens and lawns or via a biocycle system of sort.

“All grey water from showers in cabins goes out to surrounding gardens” (*Retreat operator, Julatten*)

“Recycle grey water into sewage biocycle treatment plant – aerated septic tank then pumps out grey water onto paddocks” (*Farm stay operator, Daintree*)

“Recycle grey water onto gardens from laundry and downstairs washing” (*B&B operator, Mossman*)

“Grey water into filtration trench, not pumped back onto gardens as no need with rainfall” (*Caravan park operator, Julatten*)

When conducting interviews in the Mission Beach area, the process of changing all properties over from septic to sewage was beginning to occur directly in Mission Beach.

Only two of the six interviewees reused their grey water for gardening and landscaping purposes.

“Grey water (shower and basins) drains off down hill at bottom of property” (*B&B operator, Mission Beach*)

“Aqua Nova for septic – high cost of maintenance though. For example three to four pumps in two years. Waste water (grey) also [goes] through Aqua Nova and then pumped onto gardens” (*Licensed hotel operator, Mena Creek*)

4.6.4 Solid Waste Management

Efficient solid waste management is necessary to reduce land fill. From the survey sent to specialist accommodation operators, the highest responses received were for the purchasing of goods in bulk (78.2%) followed by practicing the slogan ‘reduce, reuse, recycle’ (59.4%) and the composting of organic matter (57.4%) (Table 4.22). Separating recyclables was the least used environmental management technique (49.5%). This result can be attributed to the non-existence or limited roadside recyclable collection in some council shires and the acceptance of recyclables at waste transfer stations during the past three years in the geographical areas of research. Other solid waste management techniques indicated were to give vegetable scraps to farm animals and the use of animal manure for garden fertiliser.

Table 4.22: Solid Waste Management Techniques at Specialist Accommodation

	Percentage in use	Percentage intending
Purchase goods in bulk	78.2	-
Reduce, reuse, recycle	59.4	1.0
Compost organic matter	57.4	2.0
Purchase goods in recycled packaging	56.4	1.0
Separate recyclables	49.5	1.0
Other	1.0	-

The interviews conducted on the Atherton Tablelands (15), in the Daintree region (9) and within the Mission Beach area (6) were insightful. Questions were directed at solid waste management practices and the reasons for undertaking these. In particular, recycling

practices including guest involvement and reuse practices were probed. Of those who indicated they do not separate recyclable waste, the most cited reason for this is the non-existence of kerbside collection provided by the local council shire.

On the Atherton Tablelands, it was found some operators will personally separate recyclable waste, others encourage guests to recycle. It seems this is now an acceptable practice. Similarly, many of the operators interviewed stated their involvement in recycling often extended to the local community, including the donation of aluminium cans to local schools and youth groups.

“Encourage guests to recycle – definitely works, now seems to be an acceptable deal for guests”
(*Cabin operator, Ravenshoe*)

“Recycle bins provided for guests with signage asking them to use it” (*Cottage operator, Yungaburra*)

“All food scraps split between dog, chooks and pig. I do personal recycling – reuse newspapers, jars, bottles” (*Farm stay operator, Millaa Millaa*)

“100% into recycling – cardboard, cans, bottles. Cleaner sorts rubbish from rooms. Council now picks up for free” (*Licensed hotel operator, Kairi*)

“Recycling – surprised by council not following up. Park does recycle cans for youth group”
(*Caravan park operator, Malanda*)

“Food scraps for neighbours’ ducks, in return, horse manure for gardens” (*Cabin operator, Chillagoe*)

Four of the nine interviewees in the Daintree region had similar comments to those above about recycling.

“Recycle buckets under sink. Guests recyclable rubbish is the greatest amount” (*B&B operator, Mossman*)

“Guests do recycle and also sort themselves and have a guy who privately collects bottles and cans”
(*Caravan park operator, Port Douglas*)

“Encourage guests to recycle as well and try to donate aluminium cans to school” (*B&B operator, Daintree*)

“Guests also encouraged to recycle – roadside collection provided by Douglas Shire Council” (*Ecolodge operator, Daintree*)

Of interest was one retreat operator in the Daintree region who had researched and consequently installed waterless dry-composting toilets in each guest cabin.

“Dry composting toilets in all cabins (Clivus Multrum) – best – never use septic again! Fans dry waste on a timer, dark dirt is the end product, they are a more economical option; maintenance is minimal, empty once every two to three years and we use dirt on the ornamental gardens; only part that can break is the fan (\$40 to replace); fan can run on solar; no smell” (*Retreat operator, Julatten*)

Interviews conducted in the Mission Beach area, indicated the accommodation operators were concerned about recycling and reuse.

“The park recycles glass and aluminium. There are three recycle bins around the park for guests if wish to separate” (*Caravan park operator, Kurrimine Beach*)

“All cans collected and donated to Coast Guard. All rubbish separated and then up to waste collectors to worry about. Make own stubby coolers from recycled newspaper. All fat is collected in 44 gallon drums then collected by the Fatman” (*Licensed hotel operator, Mena Creek*)

4.6.5 Sustainable Design

Sustainable design is an architectural process that delivers buildings which minimise environmental impacts and primarily involves siting aspects, water and energy conservation principles. Respondents were asked about basic sustainable design principles with the north Queensland climatic conditions guiding these principles. Table 4.23 confirms the use of natural ventilation (91.1%) as the most common design principle in use in the specialist accommodation buildings. Landscaping reflecting the surrounding environment (89.1%) and the use of natural light (86.1%) were also common principles of building designs. Other sustainable design practices used were the siting of cabins on the top of a ridge which in effect reduced the amount of land clearing needed to be undertaken for the accommodation.

Table 4.23: Sustainable Design Techniques

	Percentage in use	Percentage intending
Use of natural ventilation	91.1	-
Landscaping reflects environment	89.1	1.0
Use of natural light	86.1	-
Locally sourced building materials	66.3	-
Recycled building materials	30.7	-
Other	1.0	-

It can be summarised from the interviews held with operators that specialist accommodation can be purposely built for sustainable design with guest comfort being factored in. Another factor was the use of sustainably farmed building materials. Observational evidence is mostly indicative of conscious building siting for natural air and light in all three geographic regions.

“Natural light [in cottage design] was a great personal concern” (*Cottage operator, Yungaburra*)

“All lodges sited specifically for natural air and light – all face north (existing 3) and for the next two, one will face north and one will face south” (*Cabin operator, Tolga*)

“Cypress used [for building cottages] from down south – renewable forest timber” (*Cabin operator, Malanda*)

From the Daintree region, light and ventilation were considerable factors in the accommodation designs.

“Purposely incorporated natural light and ventilation in design of cabins” (*Retreat operator, Julatten*)

“Russ built cabins specifically with natural breezes and light flow in mind” (*Caravan park operator, Daintree*)

“All hardened walkways above vegetation. These canopy walkways have the dual purpose of carrying service lines as well. All villas micro-screened for guests to enjoy natural surroundings and hear rainforest sounds” (*Ecolodge operator, Daintree*)

Only one operator in the Mission Beach area had been mindful of their cabin design and had taken into account natural air and light, roof runoff and the conservation of flora due to a cassowary habitat corridor being located at the rear of the property.

“All environmental management considered when building. We only built on 20% of the land. All [cottages] sited for natural breezes, all louvered and screened. Gullies around all cottages – so as physical land not impacted by loss of moisture and there were no trees removed except for the Black Wattle”
(Cabin operator, Mission Beach)

4.6.6 Other Sustainable Practices

An exploration of other sustainable practices in use by specialist accommodation operators is provided in Table 4.24. Almost all of the specialist accommodation operators surveyed indicated they purchased local goods and services (97.0%). The use of bio-degradable cleaning products (85.1%) and regular mulching of gardens (80.2%) were also undertaken by the majority of the sample. Other sustainable practices (4.0%) in use included the monitoring of migratory birds to better understand their patterns and so as not to interfere with this natural cycle. Another operator stated they had undertaken extensive revegetation where trenches had been dug for power and water services.

Table 4.24: Other Sustainable Practices

	Percentage in use	Percentage intending
Purchase local goods & services	97.0	-
Use bio-degradable cleaning products	85.1	1.0
Regularly mulch gardens	80.2	1.0
Employ local residents	67.3	-
Non-chemical cleaning	62.4	2.0
Monitor feral pests & weeds	54.5	-
Monitor native wildlife	49.5	-
Report environmental changes to relevant authorities	48.5	2.0
Monitor native vegetation	42.6	-
Practice organic gardening	41.6	1.0
Grow own fruit & vegetables	40.6	3.0
Educate guests	38.6	3.0
Supply recycle collection bins for guests use	33.7	3.0
Involve locals or indigenous people in business	26.7	1.0
Practice permaculture	9.9	1.0
Involve guests in conservation	6.9	1.0
Other	4.0	-

Whilst interviewing the 30 specialist accommodation operators, the topic of other sustainable practices was extensive. The results from this section of the interviews with operators have therefore been regrouped to the headings of conservation measures and gardening practices; purchasing practices; cleaning practices; and guest education.

4.6.6.1 Conservation Measures and Gardening Practices

In all three regions, conservation measures centred on tree-planting and the conservation of already forested areas. A number of Atherton Tableland accommodation operators had undertaken extensive tree planting whilst others had undertaken minimal clearing only.

“Replanted 14,000 trees – natives” (*Cabin operator, Malanda*)

“Minimal tree clearing so as to retain natural feel” (*Cottage operator, Yungaburra*)

“Bottom of park still heavily treed” (*Caravan park operator, Millaa Millaa*)

“We only cleared where we had to. Planted bush tucker trees – grow better than normal fruit trees due to soil condition (clay). Plant only natives” (*Cabin operator, Tolga*)

“Trees planted for wildlife habitat” (*Farm stay operator, Tolga*)

“Plant more native rainforest trees and eliminate exotic trees. Have to be careful with pests (flora) with berries due to birds eating and dropping in rainforest” (*Caravan park operator, Malanda*)

Interviews in the Daintree region showed a concern for exotic species of trees which were slowly being removed and replanted with native trees and plants.

“Rid of exotic plants and replaced with fruiting rainforest trees – aim to attract native birds and wildlife” (*B&B operator, Daintree*)

“15 years ago planted 2000 rainforest trees on paddock boundaries under CSIRO partnership – now about 7-8m tall” (*Retreat operator, Julatten*)

“We have planted all grass, native plants and palms but due to litigation need to have lopper in every year for palms” (*Caravan park operator, Port Douglas*)

“Try not to spray any more, manual weeding is better” (*B&B operator, Daintree*)

In the Mission Beach region, only one operator had specifically replanted trees and added additional trees for native wildlife and to attract certain species (e.g. cassowaries, butterflies).

“Planted 120 native rainforest trees from C4 to revegetate for gold coin donation for trees. We also planted 40 food trees for cassowary and trees for Ulysses and Cairns Birdwing butterflies. Ixora - 60 planted in front of property for Ulysses butterfly – pink [flower] is their favourite” (*Cabin operator, Mission Beach*)

The gardening practices encountered during the interviews were similar in all of the regional areas. This included the practice of composting, mulching and drip irrigation systems. Fruit, vegetable and herb gardens for guest consumption were also of interest.

“Herb garden near cottages for guests [in old wheelbarrow]” (*Cottage operator, Yungaburra*)

“Gardens – drip system and run in edge of garden to save water and so lime doesn’t get on everything” (*Cabin operator, Chillagoe*)

“No more sprays - try and increase frog population and no need to really water – gardens are mulched” (*B&B operator, Daintree*)

“Own recycled mulch from tree loppers and chicken poo for gardens” (*Caravan park operator, Port Douglas*)

“Do own composting and mulching. Gardens are predominantly native plants that require minimum irrigation” (*Backpackers hostel operator, Tully*)

“Growing own fruit and vegetables and intend to continue this for both guest and own consumption” (*B&B operator, Mission Beach*)

“No chemicals especially in orchard – keep all other chemicals to a minimum” (*Retreat operator, Julatten*)

Other innovative conservation techniques mentioned by operators included help with gardening and maintenance practices and the monitoring of native flora, fauna and feral pests.

“Use WOOFERS as well to help manage property – help look after them with reef trips, Daintree tours. German and NZ best WOOFERS to have” (*Retreat operator, Julatten*)

“Feral weed removal – lantana eradicated most, as see it, take out” (*Cabin operator, Ravenshoe*)

“Cassowaries, long-nosed bandicoots + native vegetation all monitored” (*Cabin operator, Mission Beach*)

“Pond has supply of fish for mosquitoes. Killback snakes in the pond eat baby toads” (*Cabin operator, Chillagoe*)

4.6.6.2 Purchasing Practices

The interviews conducted within all three geographical areas probed the purchasing policies from each of the specialist accommodation operators. From a total of 30 interviews held, 20 of the accommodation operators indicated their preference for purchasing goods and services was from local suppliers especially fresh produce, butchery, bakery, dairy and cottage industry products.

“Purchase locally from Tolga and Atherton, frozen goods from Cairns. Locally grown vegetables purchased from farms. There’s fruit trees out back – let workers staying [in hotel] know to grab some or [we] give it away to locals” (*Licensed hotel operator, Kairi*)

“Local products purchased including (cottage industry) soap and shampoo, in order of preference, first Malanda, second Atherton and thirdly Cairns. Even [our] towels are ordered from a shop in Malanda” (*Cabin operator, Malanda*)

“Local purchases – Yungaburra, Malanda, and Atherton and we supply Daintree tea and Jacques coffee in [the] cottages” (*Cottage operator, Yungaburra*).

“Purchase all locally from Mission Beach, Tully or Innisfail; for grocery, Cairns; seafood from local tinny shack; fuel in Tully. I tried local craft shops for guest soap but wasn’t available so have soaps with recycled paper” (*Cabin operator, Mission Beach*)

“Purchase locally from Atherton and Tolga. Make biscuits, jams and chocolates from local produce as well” (*Cabin operator, Tolga*)

There were some operators who did not purchase all of their products locally, but were conscious of the environmental impacts of certain products.

“We are constantly looking for better suppliers – more environmentally friendly products. There are handmade soaps in villas. We do purchase local products from Mossman mainly and a lot from Cairns due to economy of scale” (*Ecolodge operator, Daintree*).

4.6.6.3 Cleaning Practices

During the interviews, the subject of cleaning practices at the accommodation was approached. The use of biodegradable and non-chemical cleaning products, and methylated spirits with water were indicated by three of the interviewees on the Atherton Tablelands.

“Methylated spirits and water used for cleaning” (*Hotel operator, Kairi*)

“All biodegradable products for cleaning need to be used” (*Cabin operator, Malanda*)

“Non-chemical cleaning products are used to an extent but just have to use some chemicals for best results” (*Farm stay operator, Tolga*)

In the Daintree region, accommodation operators pointed out the use of environmentally friendly cleaning products, in particular those which are biodegradable, biocycle friendly or chemical free.

“Chemical review just completed – changing suppliers to more environmentally friendly products – biodegradable and biocycle friendly requested plus all caustic free. We are conscious of [chemical impacts] – use Enjo etc” (*Ecolodge operator, Daintree*)

“All biodegradable cleaning products” (*Caravan park operator, Julatten*)

Within the Mission Beach region, the use of citrus based products and vinegar were specified for cleaning.

“Almost all cleaning products are Enjo, citrus, vinegar, etc – choose to for environmental parks” (*Caravan park operator, Mission Beach*)

“Enjo for all cleaning – Sue is the “Enjo Queen” (*B&B operator, Mission Beach*)

“Use vinegar and some citrus based products for cleaning – consciously purchased” (*Backpacker operator, Tully*)

“Vinegar used for kitchen cleaning” (*Licensed hotel operator, Mena Creek*)

4.6.6.4 Guest Education

From the interviews with the specialist accommodation operators, it is realised that some operators are mindful of providing educational materials for their guests’ interest. The topics mostly cover the native wildlife, birdlife and history of an area.

“I supply cottages with a platypus video from ABC and other literature about native wildlife and birdlife” (*Cottage operator, Yungaburra*)

“Humour [is] always a part of everything including the introduction on all information sheets about flora and fauna” (*Cottage operator, Ravenshoe*)

“Information about native wildlife [is] provided downstairs in the guest lounge for guests to read” (*B&B operator, Mission Beach*)

“I provide for guests daily on a blackboard the weather, rainfall, birds sighted weekly, tides for river for crocodile spotting, and natural history books for guests reading” (*B&B operator, Mossman*)

“Orphaned wildlife is a great attraction, I have a permit to exhibit and explain all facets of kangaroo and wallaby, educate guests on wildlife” (*Caravan park operator, Daintree*)

Others are interested in indicating to the guest how they can help with the conservation of the area and informing them about the regional area.

“We have water wise stickers and notices in all lodges (cottages) to remind guests to save water” (*Cottage operator, Tolga*)

“General reading material is provided in villas regarding wildlife, history, indigenous links, etc” (*Ecolodge operator, Daintree*)

“Guests are reminded not to feed [the] wildlife” (*Cottage operator, Tolga*)

4.6.6.5 Community Involvement

As is previously noted in Chapter Two, local community involvement including the employment of local residents is a component of sustainability. This point was considered whilst interviewing the accommodation providers. Answers to this question have been divided into employment and community involvement.

“I support local festivals and charities” (*Cabin operator, Malanda*)

“We take part in Cleanup Australia Day” (*B&B operator, Mission Beach*)

“We hold an annual pig hunt every year. It is a yearly weigh in and all year hunters can weigh in pigs. The rangers seem to turn a blind eye to dogs in the National Park for the pig hunt - it helps the culling of feral pigs. No firearms allowed in National Park either so dogs and knives are used” (*Licensed hotel operator, Mena Creek*)

However, one operator was quite adamant that local community involvement was not necessary.

“I don’t give to local community groups; I’m trying to run a business” (*B&B operator, Mossman*)

Questioning the specialist accommodation operators about local employment and indigenous staff resulted in only two operators indicating the employment of indigenous people.

“Indigenous staff – two in maintenance, one tour guide for guided walks and artwork. We are looking at hospitality training as well for indigenous [people]. Indigenous chefs – always keep on trying to work with these staff” (*Ecolodge operator, Daintree*)

“Employ both local and indigenous in business (indigenous for glasswork and liaison) plus we employ backpackers as well” (*Backpacker hostel operator, Tully*)

“Employ one local lady to help out” (*Caravan park operator, Julatten*)

“Employ two local residents – one cleaner and her husband is called in for maintenance” (*Caravan park operator, Kurrimine Beach*)

One operator stated they had tried to involve their guests with the indigenous tourism operators of the area, unfortunately to be disheartened by the inefficiency of the involvement of the Aboriginal groups (i.e. Product was not delivered when sought by guests).

“We tried to have indigenous dancers in once and they did not show. Same trying to send guests to the Kuku Yulanji but no one turns up to do the tour” (*Caravan park operator, Mossman*)

4.6.7 Voluntary Conservation Agreements

A voluntary conservation agreement is a property owner instigated agreement to protect and conserve habitats and ecosystems on private freehold land. The agreement can be set for a number of years (5, 10 or 15 years) or can be perpetual and thus attached to the title deed of the property. The majority of the sample did not have a voluntary land agreement on their property (81.4%); however Land for Wildlife was the most accepted land conservation agreement held by 11.8% of the accommodation properties (Table 4.25).

Table 4.25: Voluntary Conservation Agreements in Specialist Accommodation

<i>Land Agreement</i>	<i>Frequency</i>	<i>Percentage</i>
No Voluntary Land Agreement	83	81.4
Land for Wildlife +	12	11.8
Nature Refuge ++	3	2.9
Conservation Covenant ^	3	2.9
Commonwealth Conservation Agreement	1	1.0
Total	102*	

*Multiple response question therefore total is more than 101 respondents.

+Land for Wildlife – now managed by Greening Australia (formerly managed by QPWS)

++Nature Refuge – managed by Environmental Protection Agency Queensland

^Conservation Covenant – managed by Australian Government, Department of Environment and Heritage

Commonwealth Conservation Agreement – managed by Australian Government, Department of Environment and Heritage

From the interviews conducted with operators the reasons for and against seeking Land for Wildlife and other styles of conservation agreements for private land were sought from the owner-operators. Mixed responses were received. The reasons for not considering voluntary conservation agreements centred on a lack of knowledge about conservation agreements, an owner feeling it was not necessary as their property neighboured a protected area or it would be of no benefit.

“Neighbour of World Heritage Area on two sides of property – north and east. Voluntary Land Agreement [would be an] encumbrance not needed, land to pass on” (*Cottage operator, Ravenshoe*)

“There is an environmental reserve behind and around [the] park due to the creek. Pink zone – highly protected (EPA or QNP)” (*Caravan park operator, Malanda*)

“Not really suitable for a working farm however do have wildlife habitat around creek and at back of property” (*Farm stay operator, Millaa Millaa*)

“Not considered, never really been approached” (*Cottage operator, Yungaburra*)

“Don’t really know much about it. Did look at tree protection/ plant scheme but not viable locking up bush” (*Cottage operator, Tolga*)

“No. Good quality agricultural land (GQAL) used for grazing on rest of property” (*Houseboat operator, Tinaroo*)

In the Daintree and Mission Beach regions, similar responses were received during the interviews.

“No benefit – have considered – some have said they now wish they hadn’t done it” (*Caravan park operator, Daintree*)

“Have considered Land for Wildlife but property is too small. Instead have thought about donating percentage of guest stay to Australian Rainforest Foundation” (*B&B operator, Daintree*)

“Not been approached so not worried about it” (*Retreat operator, Julatten*)

“Tried to find out but got bumped around so will worry about when have time to investigate. We would like to protect 60 metres of cassowary corridor at [the] back of the property” (*Cabin operator, Mission Beach*)

“Not heard of before. Doubt that we would do it as the property backs on to Wet Tropics World Heritage rainforest” (*B&B operator, Mission Beach*)

“Not considered. Personal conservation – have own platypus, cassowaries and possums” (*Cabin operator, Daintree*)

Of those who already had a conservation agreement in place because it was deemed suitable to protect the land, some felt there was no continued support from regulatory bodies. Others were more than happy that they had signed a voluntary conservation agreement.

“Land for Wildlife in place – Type 1A Rainforest – five to ten acres for resort use, keep all pedestrian traffic down this area and conserve rest of property” (*Ecolodge operator, Daintree*)

“Have Land for Wildlife – knew of others doing it and my husband [is] involved in Envirocare, thought it was a good idea” (*B&B operator, Kuranda*)

“Have Land for Wildlife – decided property was suitable and to keep neighbours dogs out” (*Cottage operator, Ravenshoe*).

“Have Land for Wildlife but pity it hasn’t gone forward much. Beattie government has new legislation, now offer landowners rebates for 100% habitat protection of old growth and regrowth forest through Greening Australia. Expressions of Interest (EOI) recently advertised – approx 100 EOI on Tablelands” (*Farm stay operator, Tolga*)

“Have Land for Wildlife – now no support from Mareeba Shire Council and unfortunately now doesn’t exist – 1997/98 took on Land for Wildlife – whole property. Still get Land for Wildlife newsletters” (*Caravan park operator, Julatten*)

4.6.8 Environmental Audits

An environmental audit is a means of assessing the environmental impact from a business’s operations. They are usually conducted voluntarily and internally within an organisation. Table 4.26 indicates the majority of the specialist accommodation operators surveyed do not conduct environmental audits (82.3%). Only 14.6% of the respondents stated they did conduct regular environmental audits at their specialist accommodation property.

Table 4.26: Environmental Audits

	Frequency	<i>Percentage</i>
No environmental audits conducted	79	82.3
Conduct regular environmental audits	14	14.6
Conduct regular environmental audits by external party	3	3.1
Total Responses	96	

4.7 Barriers to Implementing Environmental Management

During the interviews held with 30 of the specialist accommodation operators, the reasons for not implementing certain environmental management techniques were enquired about. Solar techniques, water management techniques, waste management techniques, cleaning practices and gardening practices tended to dominate this part of the interviews and is often dependent on the location and style of the specialist accommodation.

4.7.1 Barriers to Energy Management Techniques

The use of solar energy for power and hot water was indicated as inefficient and costly by 17 of the 30 interviewees. On the Atherton Tablelands, ten operators commented on the abundance of grey overcast days, installation costs and the style of accommodation which rendered this energy management technique as unsuitable.

“Lot of grey days not suitable for solar” (*Cottage operator, Ravenshoe*)

“Solar not viable here in a caravan park” (*Caravan park operator, Malanda*)

“Solar hot water – installation cost too high” (*Cabin operator, Chillagoe*)

“Solar not used due to worry of hot water running out on guests” (*Cottage operator, Yungaburra*)

“Not enough sun for solar” (*Farm stay operator, Millaa Millaa*)

“Solar no good for cloud cover is fairly constant” (*Caravan park operator, Millaa Millaa*)

“Queensland government pathetically give a rebate and grants for installing solar panels; I lobby Peter Beattie often” (*Farm stay operator, Tolga*)

“Have looked into solar hot water – electric presently costs approximately \$80-100. Solar hot water may not be as viable – difficult to find out all the information about benefits and costs” (*Licensed hotel operator, Kairi*)

“Solar was decided against due to installation costs and the use of electricity still needed” (*Cottage operator, Tolga*)

“Solar hot water – has to be done quickly to put in plus difficult to service 120 people with hot water” (*Licensed hotel operator, Irvinebank*)

In the Daintree region, rainforest cover, cloud cover and cost were indicated as reasons for not installing solar hot water or power.

“Not enough rainforest clearance for solar power and water” (*Ecolodge operator, Daintree*)

“Solar not viable due to rainforest cover” (*Caravan park operator, Julatten*)

“Solar – expensive, exorbitant – down the track once business further established” (*B&B operator, Daintree*)

“Solar power and water – too much cloud and rain – inefficient” (*Cabin operator, Daintree*)

The cost of installing solar hot water or power was the most common reason for not using this energy management technique in the Mission Beach region.

“Solar hot water and power would not be suitable plus costly” (*Caravan park operator, Mission Beach*)

“Solar not possible due to rainforest trees” (*Cabin operator, Mission Beach*)

“Solar power – initial cost” (B&B operator, Mission Beach)

“Solar power – expensive to install and not cost effective for systems” (*Caravan park operator, Kurrimine Beach*)

“Solar hot water would be difficult with [number of] grey days” (*Backpackers hostel operator, Tully*)

Other energy management techniques found not viable by some operators included the installation of energy efficient light bulbs.

“Energy efficient light bulbs not lasting with generator – fluorescent tubes better” (*Caravan park operator, Daintree*)

“Energy efficient light bulbs – try to keep in but keep on blowing quicker – apparently humidity and in the nightclub body heat and vibrations – they blow a lot” (*Backpacker hostel operator, Tully*)

“Energy efficient light bulbs can’t have a dimmer. Recessed lights replaced the fluorescent lights” (*Cabin operator, Chillagoe*)

4.7.2 Barriers to Water Management Techniques

On the topic of water management techniques, conversations tended to revolve around the realities of installing rainwater tanks and in Chillagoe, the realities of high lime content in the water were discussed.

“Rainwater tanks not plausible” (*Cabin operator, Malanda*)

“Lime in water causes hassles (calcium deposits) For example; lime content of water prohibits water evaporation coolers, tap aerators, lime on garden plant leaves. On electric jug element - have to use rainwater in jug, supplied in every cabin fridge” (*Cabin operator, Chillagoe*)

“No physical space for rainwater tank and not viable, no access in rainforest” (*B&B operator, Mossman*)

“Rainwater tanks not suitable – need too much. Low flow shower heads not real good. Giardia a problem when rain stops. Hard to get guests to conserve water” (*Caravan park operator, Daintree*)

“Rainwater not viable due to all the birds and animals” (*Caravan park operator, Julatten*)

“Bore water would not be viable due to cost of dropping bore down 120 metres” (*Retreat operator, Julatten*)

“Rainwater tanks in future – financial cost at moment” (*B&B operator, Daintree*)

“Have considered rainwater tanks but litigation fear is increasing” (*Caravan park operator, Mossman*)

In the Mission Beach area, similar comments were received for water management techniques.

“Rainwater collection tanks wouldn’t be useful and we haven’t even had to put on sprinklers once in three years” (*Caravan park operator, Mission Beach*)

“Tried a bore but the sand is too fine and blocks up the bore” (*Cabin operator, Mission Beach*)

4.7.3 Barriers to Waste Management Techniques

Waste management techniques in all three geographical areas tended to be impeded by the lack of or limited kerbside recyclable rubbish collection and as one caravan park operator on the Atherton Tablelands commented, “Environmental management is restricted by time and money”.

“Mareeba Shire Council doesn’t do recycle collection” (*B&B operator, Kuranda*)

“No roadside recycle collection, cardboard separated - take all rubbish to the tip ourselves” (*Caravan park operator, Millaa Millaa*)

“No rubbish collection – recyclables are hard to separate – skip bin used for all rubbish” (*Cottage operator, Tolga*)

“Recycling bin not large enough to accommodate all recycle rubbish” (*B&B operator, Mossman*)

“Recyclables not separated due to Mareeba Shire Council’s non-collection” (*Caravan park operator, Julatten*)

“No recycle collection kerbside – Mareeba Shire – so local council not helping with recycling although would love to do this” (*Retreat operator, Julatten*)

In the Mission Beach region, similar comments were heard regarding roadside collection of recyclables.

“Not worth separating recycle waste for small park and no collection” (*Caravan park operator, Mission Beach*)

“No recycle collection for Cardwell Shire but guests recycle” (*Cabin operator, Mission Beach*)

“No recycling collection in Mission Beach but has transfer station” (*B&B operator, Mission Beach*)

“Recycling collection is not available roadside. Still collecting up aluminium cans – some guy was going to collect these before Christmas, still hasn’t turned up and I have approached charity community groups, they are not interested” (*Caravan park operator, Kurrimine Beach*)

“We can’t recycle due to any disposal / collection. Nowhere to store aluminium cans even if there was any community groups collecting and not been approached” (*Backpackers hostel operator, Tully*)

4.7.4 Barriers to Other Sustainable Practices

Gardening and organic gardening were also topics identified as having barriers to their successful implementation. The most cited problem was the native wildlife eating and digging up garden beds.

“Vegetable gardens and fruit trees hard to grow due to wildlife about – possums, wallabies, etc” (*Cottage operator, Ravenshoe*)

“Not interested in growing fruit and vegetables – possums and wildlife into it all” (*Cottage operator, Ravenshoe*)

“Mulch always kicked out by scrub turkeys and wildlife – cost and labour not worth it” (*Caravan park operator, Malanda*)

“Have own worm farm for food scraps but possum now trying to get into it” (*Cottage operator Tolga*)

“Too many rocks for vegetable gardens” (*Licensed hotel operator, Irvinebank*)

“Peacocks also eat vegetable garden – trial still” (*Cabin operator, Chillagoe*)

In the Daintree region, accommodation operators voiced similar problems with gardening practices.

“Irrigation sprinklers and soaker hoses better due to wildlife eating above ground irrigation. Can’t dig [irrigation] pipes underground due to tree roots” (*B&B operator, Mossman*)

“Pigs and bandicoots get most compost” (*Caravan park operator, Daintree*)

“Can’t grow fruit and vegetables due to birds, wildlife, wallabies, rats, etc” (*Caravan park operator, Julatten*)

“Pigs are a problem and feral weeds – a guy comes up every now and then with dogs to hunt the pigs but think they mainly just travel through this property, not living on it” (*Retreat operator, Julatten*)

“Composting too hard – fish scraps in crab pots” (*Caravan park operator, Mossman*)

Finally, the reasons for not using environmentally friendly cleaning products were discussed. In all areas and in particular the Mission Beach region, the persistence of mould was the reason for the specialist accommodation operators’ choices of cleaning products.

“Mould is a constant problem, need to use bleach” (*Cottage operator, Tolga*)

“Heaps of mould therefore really need to use bleach, tried vinegar but didn’t really work and time is of essence in peak season” (*Caravan park operator, Mission Beach*)

“Use of Enjo, vinegar, etc not as hygienic so always use other products (citrus and natural)” (*Cabin operator, Mission Beach*)

“Mould grows quick due to rainforest around” (*B&B operator, Mission Beach*)

“In amenities need to use bleach due to mould - aiming to put in exhaust fan to help. Have used vinegar – not the best solution” (*Caravan park operator, Kurrimine Beach*)

“Enjo would be great but staff can easily use them for cleaning rags without thinking – they tore up new tea towels for cleaning cloths not that long ago” (*Licensed hotel operator, Mena Creek*)

4.8 Environmental Tourism Certification

Environmental tourism certification is a documented assurance by an industry organisation that a product conforms to a benchmarked standard. Section C of the survey mailed to specialist accommodation operators focused on environmental certification. Table 4.24 indicates the majority (91.1%) of the specialist accommodation operations had not achieved any form of environmental certification. Only six of the operators had achieved certification with either Ecotourism Australia (4.0%) or AAA Tourism (2.0%). 3.0% of operators were planning on achieving environmental certification within the next twelve months. Only one operator indicated attaining other environmental certification and this was held with Caravan Industry Association (QLD). The reasons for planning and achieving certification were indicated as the desire for marketing of an environmental product (7.5%) and better environmental management (6.6%). The reasons for operators not pursuing environmental certification are presented in Table 4.27.

Table 4.27: Environmental Tourism Certification of Specialist Accommodation

	Frequency	Percentage
Achieved Ecotourism Certification		
No Certification	92	91.1
AAA Tourism Green Stars	2	2.0
NEAP Ecotourism**	3	3.0
NEAP Advanced Ecotourism**	1	1.0
Other	1	1.0
Planning environmental certification in next 12 months	3	3.0
Reasons for Planning Certification*		
Marketing environmental product	8	7.5
Better environmental management	7	6.6
Other	2	1.9
Permit requirement	-	-
Council requirement	-	-

*Multiple response question. **NEAP – Nature and Ecotourism Accreditation Program (now known as EcoCertification Program)

Table 4.28 indicates over a third of specialist accommodation operators feel environmental certification is not necessary (34.4%) and not considered beneficial to the business (29.2%). Similar results show 27.1% of the sample did not know about certification while 19.1% did not have any reason for not trying to achieve environmental certification.

Table 4.28: Reasons for Not Pursuing Environmental Certification at Specialist Accommodation

	Frequency	Percent
Feel it is not necessary	33	34.4
Do not consider certification beneficial to business	28	29.2
Do not know about certification	26	27.1
No reason	19	19.8
Time required	18	18.8
Cost of application	12	12.5
Other reason	11	11.5

*Multiple response question.

During the interviews with the specialist accommodation operators the issue of environmental tourism certification was explored. Operators who do not think certification was necessary or beneficial to their business perceived it as not useful for marketing their business or thought it was not suitable for their style of accommodation.

“More bureaucratic, not practical. Overwhelming, not as beneficial. Not really useful [for] marketing” (*Houseboat operator, Tinaroo*)

“No, not interested – not really beneficial for marketing purposes. Interested, but too involved. Other priorities are more important” (*Cabin operator, Ravenshoe*)

“Eco-certification not necessary for marketing nor better environmentally – already doing best practice” (*B&B operator, Mossman*)

“No, not needed, not real necessary, not a marketing tool. “Eco” – no poisons” (*Cottage operator, Daintree*)

“Not really suitable for van park” (*Caravan park operator, Mission Beach*)

“Unsure if it would be suitable for a hotel” (*Licensed hotel operator, Mena Creek*)

“Consider business too small for certification” (*B&B operator, Kuranda*)

Only one operator did consider certification may be useful for marketing purposes.

“Have considered – but validity is questioned, could be beneficial for a marketing tool” (*B&B operator, Daintree*)

There were some accommodation operators who admitted they did not know very much about environmental certification or could not see the advantage of trying to achieve this.

“Would be advantageous perhaps, but unsure what it involves/ what it is/ how it works” (*Cabin operator, Chillagoe*)

“Not really heard much about eco-certification. Interested [in] AAA Green stars” (*Cottage operator, Yungaburra*)

“I didn’t know it existed. Know about 100% organic farming certification though” (*Farm stay operator, Tolga*)

“Haven’t considered – can’t see advantage to it” (*Caravan park operator, Chillagoe*)

“Not really necessary and seems quite involved” (*B&B operator, Mission Beach*)

There were others who were concerned about the cost and time involved in pursuing environmental tourism certification for an unquantifiable business or marketing benefit.

“Originally got accreditation for own self-satisfaction and to benchmark – now lapsed – not financially viable to stay with certification” (*Cottage operator, Ravenshoe*)

“Benefit versus cost – paperwork not viable” (*Caravan park operator, Malanda*)

“Depends on cost and time” (*Caravan park operator, Millaa Millaa*)

“Yes considered – time has got away – will get back to it. Not too sure would benefit, I abide by tours certification standards and have to be aware of staff capabilities” (*Caravan park operator, Daintree*)

“Gumnut awards – name is not ideal. Done Caravan Industry Australia (CIA) accreditation already – will help achieve Gumnut award – time needed to peruse” (*Caravan park operator, Mossman*)

The Gumnut Awards are a new environmental initiative of the Caravan and Camping Industry Association of New South Wales (NSW), yet to be completely operational in Queensland. These progressive rating scheme awards recognise demonstrated commitment to sustainable environmental practices and socially responsible management by caravan park operators.

Others were aware of environmental certification but time was of the essence and thus they were considering the process further on in time.

“Aware of and in future will look at it a lot more” (*B&B operator, Daintree*)

“Not at this stage – still settling in” (*Caravan park operator, Kurrimine Beach*)

“Would consider further down the track” (*Backpackers hostel operator, Tully*)

There were others who were well aware of environmental certification however they had negative perceptions or were against the process.

“No - self assessment – not deemed as serious” (*Cottage operator, Ravenshoe*)

“Prefer to aim for Ecotourism Australia certification not Green Stars. Just had RACQ star inspection (today)” (*Cabin operator, Tolga*)

“Against certification. For example, no hairdryer in bathroom shouldn’t lower quality of the star rating. The people make the accommodation” (*Retreat operator, Julatten*)

“NEAP Advanced - not currently renewed – will probably stay with this, however are reviewing whether it is a worthy marketing tool *per se*. Pro-environmental – personal concern” (*Ecolodge operator, Daintree*)

“Cost is prohibitive (NEAP). Just won Conservation Tourism Award from AAA Tourism but Green Stars is more money. On AAA Tourism points achieved 4 ½ star but because don’t have dishwashers became a 4 star – not really happy about this – think AAA is ludicrous at times” (*Cabin operator, Mission Beach*)

“Birdwatching is not ecotourism therefore does not apply to this property – certification does not cater for [the] birdwatching market” (*Caravan park operator, Julatten*)

4.9 Codes of Environmental Practice

Adherence to tourism industry codes of practice and environmental codes of conduct are a voluntary decision undertaken by the owner of a specialist accommodation operation. Questions 33 - 35 in Section C of the survey instrument asked operators to indicate if they adhered to any voluntary tourism industry or environmental 'codes of conduct' or 'codes of practice' and their reasons for doing so. For the purpose of this analysis, 'codes of conduct' will refer to tourism industry codes and 'codes of practice' will refer to environmental codes for best practice operations.

Only 29.3% of operators (n=27) stated they did adhere to a tourism industry code. The tourism industry codes of conduct that the specialist accommodation operators indicated adherence to were from local council by-laws (n=6), accommodation associations (n=6) (predominantly caravan park associations), tourism associations (n=2, AAA Tourism), others (n=4), common sense and natural laws of nature (n=2) and no specified association (n=7).

Survey respondents were asked to indicate in question 34 if they adhered to a voluntary environmental 'code of conduct' at their specialist accommodation from a given list. 45.0% of the operators indicated attention to council regulations. Guidelines from the Queensland Parks and Wildlife Service (16.0%), the Environmental Protection Agency (13.0%) and the Wet Tropics Management Authority (10.0%) were also indicated to a lesser extent. Those operators stating they did not adhere to a voluntary environmental code of practice accounted for 46.0% of the sample.

The reasons for adopting a voluntary environmental code of conduct were a multiple response question. Table 4.29 shows almost half of the respondents had a personal concern for the environment (n=40), undertook these voluntary codes for better environmental management (n=18) and to comply with environmental legislation (n=16). Cost savings

(2.8%) were not a real consideration in the adoption of environmental codes of conduct by specialist accommodation operators.

Table 4.29: Reasons for the Adoption of Environmental Codes of Conduct by Specialist Accommodations

<i>Reasons</i>	<i>Frequency</i>	<i>Percentage</i>
Personal concern for the environment	40	56.3
Better environmental management	18	25.4
Environmental legislation	16	22.5
Cost savings	2	2.8
Other	-	-

*Multiple response question

The interviews conducted with the specialist accommodation operators further enquired about their adherence to environmental codes of practice for sustainability. Predominantly most operators abided by a personal concern for the environment, with many stating they had looked at other codes of conduct for advice. Almost half of the 30 interviewed operators indicated their environmental management was from a personal concern for the environment. Comments from the Atherton Tablelands are given.

“Personal environmental policy started 20 years ago, less impact on state forest. Personal and looked at other house boating operations in Australia and overseas” (*Houseboat operator, Tinaroo*)

“Originally personal concern” (Cottage operator, Ravenshoe)

“Based on personal environmental management. Previous occupation (construction) has helped keep environmental management techniques in place and up to standard” (*Caravan park operator, Chillagoe*)

“Literature read [about] rehabilitated creeks. Television and publicity about environment has been great inspiration. Own personal concern for environment” (*Cabin operator, Yungaburra*)

“Personal concern and common sense” (Caravan park operator, Millaa Millaa)

“Previous occupation was with World Bank as agronomist. Personally call myself a conservationist, [I’ve] always been involved with TREAT as secretary, Landcare as treasurer. All personal experience and concern and research” (*Farm stay operator, Tolga*)

“Water conservation is high priority – personal concern. Environmental management – personal concern” (*Licensed hotel operator, Kairi*)

“Own personal environmental concern – common sense and practical plus cost-effective and also try to educate guests. Environment itself governs a lot, for example, water management” (*Cabin operator, Tolga*)

In the Daintree region, similar aspects of personal concern for the environment governing sustainability were reported by specialist accommodation operators.

“Have own personal concern for the environment. Against wildlife feeding as well” (*Retreat operator, Julatten*)

“Own personal environmental code, set up own from other codes, for example, happy bugs in septic” (*Caravan park operator, Daintree*)

“Self-regulatory – birdwatchers themselves are very environmental. Birds Australia and Birds Australia North Queensland and Bird Observers Club of Australia – actively involved with these although no code provided by these associations” (*Caravan park operator, Julatten*)

“Interested in environmental code – not had time as yet to investigate. Own personal concern for the environment” (*B&B operator, Daintree*)

In the Mission Beach region, similar responses were received with a personal concern for the environment and previous experience contributing to their sustainability.

“Personal concern for the environment. AAA Tourism rated but not interested in Green Stars due to increased cost” (*Caravan park operator, Mission Beach*)

“A lot was what I learnt along the way with previous experience [as] Executive housekeeper for Sheraton and Rydges [hotels] and this is the 7th property and was a dream that I wanted to build” (*Cabin operator, Mission Beach*)

“Not really, try to look after property as best we can” (*B&B operator, Mission Beach*)

There were eight operators who did adhere to various codes of conduct. Codes mostly adhered to were caravan park associations (i.e. Caravan Industry Australia, Top Tourist

Parks, Q-Parks), and nature-based associations (i.e. Wildlife Tourism Australia, QPWS). Others had EcoCertification with Ecotourism Australia.

“Q-Parks – code-of-conduct and Malanda Accommodation Group has 8-9 members who meet for networking [purposes]” (*Caravan park operator, Malanda*)

“Accreditation from CIA (Caravan Industry Australia)” (*Caravan park operator, Mossman*)

“Top Tourist parks Policy, Procedures and Emergency Management Manual. Top Tourist Parks – cost \$4000 year includes marketing, conference registration, people. AAA Rating is done by AAA for Top Tourist Parks – park rated individually, cabins rated individually eg, ensuite/ non-ensuite” (*Caravan park operator, Kurrimine Beach*)

“Bed and Breakfast and Farmstay Association of North Queensland (BNBNFNQ) association is a member of Wildlife Tourism Australia (WTA). Encourage people to have a look at the WTA website if trying wildlife tourism on their property. Am president of BNBNFNQ” (*Cottage operator, Ravenshoe*)

“Work a lot with National Parks especially for wildlife as Wildlife Rescue Carer” (*Cabin operator, Chillagoe*)

“Members of Wildlife Tourism Association” (*B&B operator, Daintree*)

“Eco best practice information from sister-in-law who was with Ecotourism Australia. Quite difficult to keep up with all best practice but apply what is possible, for example, educate guests” (*B&B operator, Mossman*)

“NEAP Advanced” (*Ecolodge operator, Daintree*)

Four specialist accommodation operators in the study did not adhere to any codes of conduct.

“Considered AAA Tourism once – too involved/ picky” (*B&B operator, Kuranda*)

“Not suitable chemicals needed to use on working farm, are all locked up” (*Farm stay operator, Millaa Millaa*)

“Not aligned with any backpacker group, for example Youth Hostels Australia” (*Backpackers hostel operator, Tully*)

4.10 Summary

This chapter has presented the results of Study One which examined the specialist accommodation operators and their style of operations in North Queensland. The specialist accommodation operations of interest are those who neighbour or are located within close proximity (50km radius) to the protected areas, in particular, the rainforests of the Wet Tropics World Heritage Area (WTWHA). All of the specialist accommodation operators surveyed are located within 50 kilometres of a protected area and 30.0% are neighbouring a protected area, mostly the WTWHA. Bed and breakfasts, cabins, cottages and caravan parks made up more than 60.0% of the sample. The mean number of rooms for an establishment in this study is 5.8 rooms.

The people who operate the specialist accommodations are predominantly husband and wife teams over 40 years of age with tertiary or trade qualifications. More than 70.0% of these people have operated their specialist accommodation for less than eight years. The previous occupations of the operators are mostly from the trades and hospitality and tourism sectors. The most dominant reasons for moving into the specialist accommodation sector are personal, in particular, those seeking a change of lifestyle. Approximately 95.0% of the operators are members of a tourism or accommodation association. The New Ecological Paradigm showed operators are generally pro-environmental holding an ecological worldview to varying degrees. Three factor groups were found to exist. Correlates of environmental concern indicators were found to be either non-existent, statistically insignificant or empirically weak.

Environmental management techniques predominantly in use at specialist accommodations are dual flush toilets, the installation of ceiling fans only and not air conditioners, energy efficient light bulbs, and grey water reuse. As well, operators purchase goods in bulk and locally. Buildings take advantage of natural light and ventilation, the landscaping reflects the surrounding environment, biodegradable cleaning products are used and regular mulching of gardens is undertaken for water conservation.

The barriers to implementing environmental management techniques were limited by the location and style of specialist accommodation. The use of solar was deemed unsuitable in a lot of areas due to rainforest cover, cloud cover or the initial high cost of installation. Energy efficient light bulbs are ineffective where generators are constantly used for power, where dimmers are required for guest atmosphere and in areas where humidity is exceptionally high. Rainwater tanks similarly were not deemed useful due to limited physical space, guest usage or cost of installation. The separation and collection of recyclable waste was mainly hindered by a lack of kerbside collection and storage space requirements.

The majority of specialist accommodation operations did not have environmental tourism certification citing the reasons of not thinking it was necessary, beneficial to the business or a lack of knowledge on the operator's behalf. Almost all of the operators had a personal concern for the environment with more than 50.0% of operators stating this was their reason for voluntarily adopting an environmental code-of-conduct; others followed a code for better environmental management. Operators mainly followed environmental guidelines from local councils, QPWS and WTMA.

Overall, the specialist accommodation operators are protecting and conserving their natural environments on freehold land under the guidance of a personal concern for the environment, with climatic and geographical factors, and time and cost factors limiting the use of some environmental management techniques. Guest comfort and satisfaction are also underlying factors as well in the implementation of environmental management techniques at specialist accommodation establishments.

CHAPTER 5: REGULATORY BODIES AND THE SPECIALIST ACCOMMODATION SECTOR

Structure of the Chapter

5.1 Introduction

5.2 Respondents

5.3 Shire Town Planning

5.4 Wet Tropics Management Authority

5.5 Tourism and Accommodation Associations

5.6 Summary

5.1 Introduction

The aim of this chapter is to present the results identifying the level of interaction and support given to the specialist accommodation operations located near protected areas by the relevant regulatory bodies and agencies in North Queensland. These regulatory bodies include local Shire councils, and the Wet Tropics Management Authority (WTMA), along with tourism and accommodation associations. The majority of this data is qualitative.

5.2 Respondents

There were three external stakeholders examined for their assumed interaction with the specialist accommodation sector in North Queensland. The regulatory agencies approached were town planners from the seven local Shire councils presiding over the geographic areas of research. The environmental regulatory agency is the Wet Tropics Management Authority (WTMA). As well, sixteen tourism and accommodation associations which the specialist accommodation operators are members were examined.

Individual face-to-face semi-structured interviews were conducted from November 2004 to May 2005 with town planning staff at the seven local Shire Councils in the study area and with the principal planning officer of WTMA, the agency responsible for the protection and conservation of the Wet Tropics World Heritage Area (WTWHA) rainforests. Each

interview based on a semi-structured set of prepared questions averaged one and a half hour (Appendix G & H). Information was sought regarding the regulatory body's awareness of the specialist accommodation sector; whether there were recognisable benefits and impacts associated with these accommodation operations; and mechanisms for the recommendation of environmental management practices. Questions also covered the existence of environmental codes; the appropriateness of environmental certification and voluntary conservation agreements. The final line of information ascertained the existence of corporate plans and the probability of environmental accountability for future guiding documents that would apply to the specialist accommodation sector near the Wet Tropics WHA.

Nineteen tourism and accommodation associations identified in the *Specialist Accommodation Survey* were posted a one-page survey (see Appendix F) containing six questions in May 2005. The survey focused on the purpose of the association and the existence of environmental policies for their association members. Fourteen questionnaires were returned from the tourism and accommodation associations, resulting in a 73.7% response rate.

5.3 Shire Town Planning

The three geographical regions for the research included seven town shires. A semi-structured interview was conducted at each Shire Council office with a town planner. The topics of interest were the specialist accommodation sector within the shire, the use of environmental codes for these styles of accommodation business, recommendations for environmental management techniques, voluntary conservation agreements, assistance given to the specialist accommodation operators if required, and consideration of impacts from these specialist accommodation operations being located near protected areas.

Table 5.1 provides the geographical details of the sub-regions and relevant council shires for the research. The Atherton Tablelands is divided into four shires, the Mission Beach

region has two shires and the Daintree region is all within the Douglas Shire. The land size and resident population of these shires are also provided in Table 5.1.

Table 5.1: Local Council Shires

Sub-Region	Council Shires	Shire Land Size (sq. km)	Population (approx) [as at June 2003]*
Atherton Tablelands	Atherton	620 sq. km	10,600
	Mareeba	53,457 sq. km	18,000
	Eacham	1124 sq. km	6,250
	Herberton	9575 sq. km	5,100
Daintree	Douglas	2447 sq. km land; 5500 sq. km sea	11,100
Mission Beach	Johnstone	1639 sq. km	19,500
	Cardwell	2901 sq. km	11,200

*Source: Queensland Government: Department of Local Government, Planning, Sport and Recreation, <http://www.lgp.qld.gov.au/?id=198> Accessed 28 Jan 2006.

A number of local council by-laws appropriate to the specialist accommodation sector are waste management; water supply; camping, caravans, caravan parks and cabins; vegetation management; preservation of trees; and rental accommodation with shared toilet facilities. Most by-laws were amended in 1999 or prior. The absence of environmental codes of conduct and environmental standards for accommodation operators is evident in these local council by-laws. Qualitative data collected from the town planners indicate the by-laws are not the greatest mechanism for the control of environmental impacts and the promotion of environmental sustainability for tourism accommodation businesses. Planning schemes appear more pertinent to the specialist accommodation sector and the degree of environmental compliance and sustainability for businesses in the council shire.

“Local laws are not [the] best mechanism to promote environmental management” (*Johnstone Shire Council*)

“The vegetation management local law has environmental considerations. Most local laws are very old and probably not used. A lot hinges on a lack of time; resources and an operational plan/ strategy [is] needed to tie the corporate plan together” (*Douglas Shire Council*)

“Possibly. We encourage developers [to be sustainable] for subdivisions if possible” (*Eacham Shire Council*)

“Could be possible. Automatic these local by-laws should update after new planning scheme in place” (*Herberton Shire Council*)

“The 2005 Shire Planning Scheme will next year be reviewed/ updated/ present early (2nd in state) – has ecological sustainability and vegetation codes” (*Atherton Shire Council*)

“Environmental really only comes up and is examined at development application stage. Water conservation not an issue due to high rainfall of the area” (*Cardwell Shire Council*)

“Bed and breakfast and farm stay codes are both general, not environmental codes. In future as time and staffing resources increase could consider an environmental code” (*Mareeba Shire Council*)

Most of the town planners provided information from the operational planning scheme where specialist accommodation operations are concerned. On the Atherton Tablelands, the Mareeba Shire Planning Scheme has a Bed and Breakfast code and Host Farm code, both of which are impact assessable general codes. The Herberton Shire Council Bed and Breakfast Code is intended to facilitate the development of Bed and Breakfast and other small-scale tourist accommodation. This Shire appears slightly more environmentally aware with the first development principle being “the site is not in an environmentally sensitive area” (Herberton Shire Planning Scheme, 2005, part 4 – p. 3). These codes are for new developments and are normally not referred to for the proposed use of existing buildings. The town planner indicated though specialist accommodation “could be a big opportunity for Herberton Shire Council, with encouragement for rural and farm stay”. The Herberton Shire Council draft planning scheme for 2006 has adjusted its “B&B code to be code assessable not impact assessable; those located near a protected area will trigger an environmental impact assessment and a maximum of five rooms or cabins will be allowed” (O. Caddick-King, personal communication, December 3, 2004). Both the Eacham Shire Council and Atherton Shire Council declined requests for copies of the relevant town planning schemes.

In the Mission Beach region, both Johnstone Shire Council and Cardwell Shire Council preside. The Draft Johnstone Shire Planning Scheme (2003) has development codes for caravan parks, home-business, and tourist facility. Development outcomes for these codes include the environment within a capacity of the development is not have an adverse impact on areas of significant conservation value, and have no detrimental affect on the visual amenity of the area including National Parks or World Heritage areas. The Cardwell Shire Planning Scheme (2005) has a Camping and Caravan Park Code and Bed and Breakfast Accommodation Code. Both of these codes are aligned with the specialist accommodation sector. Environmental responses for the Camping and Caravan Park Code are primarily concerned with landscaped buffer zones. The Bed and Breakfast Accommodation Code allows for up to three bedrooms in a dwelling house. There are no environmental management requirements for either of these codes in the Cardwell Shire.

The Douglas Shire Planning Scheme (2006) accounts for a Camping Ground Code, Caravan Park Code, and Home Based Business Code. Both the Camping Ground and Caravan Park Codes stipulate landscaped buffer zones of dense planting are required. The Home Based Business Code (p. 184) applies to “assessable development for a Material Change of Use” and includes Bed and Breakfast Accommodation, Forest Stay Accommodation and Host Farm Accommodation. Buildings are to be small scale and complement the existing surrounding natural landscape.

5.3.1 Council Awareness of Specialist Accommodation Operations

Town planners were first asked if they were aware of the specialist accommodation sector in their shire. The comments indicate the shire town planners are aware of the specialist accommodation sector operating in their shire; however, many of these styles of accommodation are not regulated by the council planning scheme unless these are new development applications. Interview information indicated the health department in each Shire council is responsible for the annual approval to trade as a specialist accommodation.

“Yes, approximately 10-15 in the Johnstone Shire, Mena Creek way seems quite popular” (*Johnson Shire Council*)

“Yes, bed and breakfasts are not regulated by [the] planning scheme [though]. New establishments require planning approval in rural/residential zone. Residential A zone as of right. Existing buildings only require environmental health approval, but low key boutique accommodation requires approval. – lower level of assessment for B&B and farm stays” (*Douglas Shire Council*)

“Yes, common enquiry. Mayor Ray Byrnes is a member of Tablelands Tropical Tourism and Natural Resources Management” (*Eacham Shire Council*)

“Yes. Rural is no more than two buildings for accommodation, maximum of eight people” (*Herberton Shire Council*)

“Tourism bodies represented, councillors and staff [are] part of the tourism bodies” (*Atherton Shire Council*)

“All require planning room – B&B, farm stay in draft planning scheme” (*Mareeba Shire Council*)

“Yes. Town planning approval, code assessable for B&B and farm stay accommodation. Often operators staying with continental breakfast or guests cook own breakfast pack – saves money to begin with” (*Cardwell Shire Council*)

In consideration of the awareness of specialist accommodation operations located in their shire, the town planners were asked if consideration had been given to any benefits or costs of these operators being located in the Shire near protected areas. Positive responses were received from most of the seven shire town planners.

“There are benefits. The landowner can worry about rights of private property when asked to comply too much” (*Mareeba Shire Council*)

“Increased benefits north of the river; now recognised the benefits of people staying instead of just day-trippers” (*Douglas Shire Council*)

“Sensitive tourism use [is desirable] for the future of the shire. Try to make sure there is not an impact” (*Eacham Shire Council*)

“Encourage tourism accommodation as commercial enterprise. Tourism increase is an issue, not enough power to focus on environmental. Agricultural land is kept as a unit” (*Atherton Shire Council*)

“Not really a large sector” (*Mareeba Shire Council*)

“Encouragement by council [is] by way of easier processes to get application through” (*Cardwell Shire Council*)

5.3.2 Awareness of Impacts from Specialist Accommodation Operations

The town planners were asked during the interview if they considered, or were they aware of, any direct, indirect or cumulative environmental, economic or social impacts from specialist accommodation operations being located near protected areas. The shire planners mostly pointed out these styles of operations were still a relatively small sector of the tourism industry in their shire.

“They are code assessable. In future if growth occurs in the specialist accommodation sector, would need to look at these more closely. [It] depends on the size of the operation, for example ten cabins compared to two cabins” (*Johnstone Shire Council*)

“Increase in specialist accommodation recently. Recycling now a monthly collection – certain times of the year are low recyclables, some operators are more committed. The [rubbish collection] truck does less runs (less emissions), better education might be needed as also get contaminated recycled materials” (*Douglas Shire Council*)

“Anything considered an impact is referred on to EPA, DNRM; etc and on-site effluent discharge is assessed” (*Eacham Shire Council*)

“Not [considered] how many in an area – only planning scheme and Integrated Planning Act (1997). Under IPA (1997), council’s jurisdiction not usually environmental, EPA and DNRM cover environmental issues. Frustrating for smaller councils – small rate base restricts lack of prominence to environmental issues – hamstrung by state government” (*Atherton Shire Council*)

“Size of the operation [is] considered” (*Mareeba Shire Council*)

“All applications have site inspection and health department does annual inspection and they will pass on any extra information to town planning. Operations annually register with the council health department” (*Cardwell Shire Council*)

5.3.3 Recommendations for Environmental Management Techniques

The town planners were asked if they recommended any environmental management techniques to tourism accommodations at present. Predominantly these types of recommendations are not pursued particularly for the reasons of a low resource base within the councils, although encouragement is provided on good environmental practices without hindrance to the operation of the specialist accommodation.

“Not that detailed, possibly not enough community support to push this, but we will ask [the operator] how things will be done” (*Mareeba Shire Council*)

“If people ask, information can be provided. [Now there is] an opportunity for council to start looking at reviewing accommodation north of the river (council considering). Best management practice workshops [were] ran last year for all types of operators” (*Douglas Shire Council*)

“Not yet specifically, low resourced council, but ideas in the new planning scheme. Better from the operator’s viewpoint” (*Eacham Shire Council*)

“No. Host farm rural stay with farming requires health officer visit, existing buildings no approval, new buildings do [need approval]” (*Herberton Shire Council*)

“Not for council to give advice on” (*Atherton Shire Council*)

“No. Not in detail. No limitation to number in zone” (*Mareeba Shire Council*)

“Not really. Sewage not in most of the shire [so operators send] on-site sewerage disposal report [to us]. Council is trying to encourage small/ home-based sector – no extra charge for headwork contribution; \$300 application fee; \$25 per bed for health department annual application. Three or less rooms is expected scale, more than three rooms must go through public notification and headwork contribution” (*Cardwell Shire Council*)

Following on from the recommendation of environmental management techniques, the town planners were asked if there were any sustainable design principles for new tourism accommodation. Only Johnstone Shire Council had a *Landholders Handbook* which gives advice on basic best practice environmental management suitable for the Shire and tropical North Queensland. This handbook was produced in cooperation with WTMA and the Natural Heritage Trust. Enquiries with WTMA about the production of similar handbooks

for other Shires in the region indicated a lack of financial resources is thwarting the process however it is desirable in the future.

“No, the landholder’s handbook provides a little information” (*Johnstone Shire Council*)

“There is a sustainability code coming in” (*Douglas Shire Council*)

“No, but walking tracks on a property in [a] development application is for the protected area agencies [to approve]” (*Eacham Shire Council*)

“No” (*Herberton Shire Council*)

“If written in Building Code of Australia and complies. Expertise is not in council” (*Atherton Shire Council*)

“We recommend a consultant” (*Mareeba Shire Council*)

“Site inspectors will consider environmental impacts (environmental impacts looked at when application submitted) if buildings/ cabins are near protected areas for possible future clearing, same at Esplanade areas – clearing for views. State-wide legislation – building code for energy efficiency and planning scheme limits all developments to two storeys and 50% of land area. Code in planning scheme for aesthetic/ visual 40 metres above sea level (colour, non-reflective, tree screening) particularly that you cannot see the development from lower – hill slope plan” (*Cardwell Shire Council*)

5.3.4 Environmental Codes of Conduct

Environmental codes of conduct for tourism accommodation operations in the shire were a topic of interest during the semi-structured interviews with the council shire planners. Questions centred on the existence of an environmental code of conduct in the shire, and in the absence of one would the council consider adopting an environmental code of conduct for tourism accommodation.

“No. No reason why not, but the need is not there – tourism is quite small in Johnstone Shire” (*Johnstone Shire Council*)

“Looking to implement a new ‘sustainability code’ in new planning schemes, would apply to new applications. Sustainability code is more for bigger businesses – water, energy, waste minimisation, building design principles. Council not keen to hit small ‘battlers’, we are in [the] early stage of thinking about incentives for small operators to implement environmental best practice” (*Douglas Shire Council*)

“No. In theory, yes [would consider] but resources are limited” (*Eacham Shire Council*)

“Not really; possibly. Not as environmentally pro-active, geared more toward agriculture and development. They would consider [environmental code of conduct], mayor interested but too difficult, specifications would probably turn people off it rather try to encourage. Specialist accommodation operations could be a big opportunity for Herberton Shire Council – encouragement for rural/ farm stay” (*Herberton Shire Council*)

“Hands are tied, could put an advice in development application but [its] not enforceable. In reality a state government trigger needed or pro-active council would be a focus” (*Atherton Shire Council*)

“General code, not environmental codes for B&B’s and farm stays. In future as time and staffing resources increase could consider” (*Mareeba Shire Council*)

“Good quality agricultural land (GQAL) has priority over accommodation, often works well in together. [Council would] probably not [consider code] due to being small scale operations” (*Cardwell Shire Council*)

Queensland’s local Shire Councils must complete a review of their planning schemes within eight years after the planning scheme was originally adopted to comply with Queensland’s *Integrated Planning Act (1997)* which includes sustainable development as a key aspect. At the time of interviewing the town planners, each local council was in the process of drafting new Planning Schemes. Therefore enquiries were made as to the prospect of the specialist accommodation sector and ecological sustainability being included. Only two (Douglas and Atherton) of the seven local Shire councils within this study had approached the issue of environmental sustainability for tourism growth in their Shire. The remaining five Shires (Mareeba, Eacham, Herberton, Cardwell and Johnstone) have approached the issue of environmental sustainability through desired environmental outcomes, *bed and breakfast codes*, *caravan park codes* and *farm stay codes*. Environmental management practices are not specified or detailed in any of the bed and breakfast codes, farm stay codes and caravan park codes. Johnstone Shire Council is the only council to have a *Landholders Handbook (2004)* which suggests water, waste and power alternatives, energy efficiency alternatives, site design, and recommendations for community residents living with wildlife and feral pests. The Handbook also focuses on World Heritage neighbours.

The *Douglas Shire Sustainable Futures Draft Strategy* developed in conjunction with a community working group brings together industry policies and the interests of the broader community based on the triple bottom line approach of environmental, social and economic sustainability. Four building blocks (biophysical environment, economy and employment, built environment, and community) focus on priority action areas for the Douglas Shire. Applicable to the tourism sector and related to environmental management there are a number of short to medium term action plans within each building block relevant to the specialist accommodation sector including education campaigns for residents on biodiversity and habitat conservation, the promotion of best practices for recreational and tourism use of riparian areas, the promotion of energy efficiency, landscaping education, waste management and resource conservation and water consumption.

In 2005, Douglas Shire were considering implementing a new sustainability code (water, energy and waste minimisation) in the new planning scheme however “this would only apply to new applications” (Personal communication, V. Maruna, 31 May 2005). New low key boutique accommodation requires planning approval, but it is a lower level of assessment for bed and breakfasts and farm stays. An *Interim Bed & Breakfast Policy* to assist homeowners understand current legislative requirements for establishing and operating a bed and breakfast indicate no more than four guests can be accommodated in urban zones and no more than eight guests in rural zones at any one time. Environmental best practice management is not considered in this policy. At the time of the interview, this council was also in the early stages of considering incentives for small operators to implement environmental best practice. The *Douglas Shire Corporate Plan 2003-2007* indicates the implementation of rate incentives/ conservation agreements as a strategy to preserve biodiversity, adopt eco-efficiency principles for waste management, reticulated water supply, sewerage treatment and to promote energy efficient buildings. However, “a lot hinges on lack of time, resources and the operational plan/ strategy needing to tie the corporate plan together” (Personal communication, V. Maruna, 31 May 2005).

In the 2002-2003 Annual Report (p. 46), the Atherton Shire Council commented key environmental objectives were ‘to continue to investigate ways of utilising ‘grey water’ as a conservation measure’; ‘foster land uses and attitudes which enhance the quality of the natural and built environment and support sustainable development and biodiversity’; and ‘provide and maintain environmentally enhancing programs including noxious weed control, water testing, and waste collection and disposal’.

Within the Mareeba Shire Planning Scheme a *Bed and Breakfast Code* and *Host Farm Code* exist. The *Bed and Breakfast Code* is self-assessable, whilst the *Host Farm Code* is Code Assessable. Neither of these codes specifies environmental best practice for sustainability. The Herberton Shire has a *Bed & Breakfast Code* and although not specific for environmental management practices, the Code does specify “the establishment and operation of the use protects the environmental features of the locality” and “the site is not in an environmentally sensitive area” (Herberton Shire Council Draft Planning Scheme, 2005, Part 4 p. 3). There was not a Code for Bed and Breakfast operations or other specialist accommodation style available within a Draft Planning Scheme for Eacham Shire, also on the Atherton Tablelands at the time of the interview.

The two local Council Shires covering the Mission Beach Region are the Johnstone and Cardwell Shires. The region itself is an area of high ecological value providing habitat for the endangered Southern Cassowary and other iconic species. Both the Johnstone and Cardwell Shire Councils although not having an environmental code-of-conduct for tourism accommodation does prescribe to desired environmental outcomes. Johnstone Shire Council aims to position the Shire as a national tourist destination having an overall outcome of “ecological systems, environmental qualities and scenic landscape values are protected and enhanced through:

- Retention and expansion of habitat corridors
- Management of coastal development
- Identifying land uses that are sympathetic to and do not adversely impact on the protection of ecological values and processes (terrestrial and aquatic)” (Draft Johnstone Shire Council Planing Scheme, 2003, Part 3 p. 14, 3.11)

Johnstone Shire specifies in a development application for farm stay or bed and breakfast accommodation for on-site effluent disposal and bore water supply in rural areas only.

The Cardwell Shire Council Planning Scheme's Bed and Breakfast Accommodation Code states this style of accommodation must be of a low scale nature (up to three bedrooms) and the visual impact is to be predominantly of a residential nature to an adequate standard (Cardwell Shire Council Planning Scheme, 2005, Part 6 p. 116). Environmental management practices for ecological sustainability are not stipulated, however the Shire's desired environmental outcomes demand "the standard of the built environment reflects the community's desires, economic constraints, existing low scale character and the unique location of the settlements within the Shire" (Part 2 p. 10, 2.2.3) and "the values of significant natural areas and features including but not limited to the world heritage rainforest, cassowary habitats, mahogany glider habitats, wetlands, declared fish habitat areas and adjoining marine parks are not compromised by development or the effects of development that may significantly reduce those values in terms of

- ecological function;
- continuity of habitat;
- habitat corridors;
- water quality; and
- visual detractor" (Part 2, p. 11, 2.2.11)

5.3.5 Environmental Certification

The issue of environmental certification for a community and individual tourism businesses were also discussed with the shire town planners. These interviewees in general stated that the process for community environmental certification would require the support of an environmentally pro-active council.

"Previous councils had a proactive environment; this new council doesn't seem as environmental"
(*Johnstone Shire Council*)

“We are Green Globe 21 Benchmarked, but it is an extra curricular activity for planning. Green Globe 21 Benchmarked to Benchmarking really needs a sustainability officer if possible in the organisational change, plus look after Cities for Climates” (*Douglas Shire Council*)

“No – staff resources; don’t know how the residents would take it” (*Eacham shire Council*)

“No, resources are lacking unfortunately” (*Atherton Shire Council*)

“We are part of the Greenhouse Program but not a real pro-active environmental council” (*Mareeba Shire Council*)

“No – council not 100% pro-environmental” (*Cardwell Shire Council*)

The queries about environmental certification for individual businesses yielded similar results with most of the interviewees stating no and that it is not the place of council to encourage tourism businesses to seek out environmental certification individually.

“Council needs to get Green Globe 21 up to date before trying to get businesses to do the same. We need to review the Tourism Strategy. We do have an environmental awards program with a small business category; past winners have had their own personal environmental code. Sustainability and environmentally friendly seem like catchcries though” (*Douglas Shire Council*)

“No, [council] possibly not aware” (*Eacham shire Council*)

“No, not in near future. No backing from state government, Queensland is behind the rest of the states – a trigger is needed from the state government” (*Atherton Shire Council*)

“Not at the moment” (*Mareeba Shire Council*)

“Not really council’s role; up to private business to consider” (*Cardwell Shire Council*)

5.3.6 Voluntary Conservation Agreements

Voluntary conservation agreements on private freehold land can be an important mechanism for the future protection of a Shire’s terrestrial habitats and ecological diversity. Enquiries were made during the interviews as to the encouragement of voluntary conservation agreements for private landholders by the council.

“Approximately 50% of the shire is protected. Johnstone Shire has its own conservation covenant that registers on the title deed” (*Johnstone Shire Council*)

“Council can provide information regarding agreements. Prior to the temporary planning instrument north of the river everyone was supposed to sign a conservation agreement, but process not in place to do easily and council is lacking resources to follow up” (*Douglas Shire Council*)

“With some approvals, conservation covenant encouraged. Minimum subdivision if considered in public interest, trade off with conservation” (*Eacham Shire Council*)

“Couple in Herberton, up to individual property owner” (*Herberton Shire Council*)

“18 months for application process, revolving funds for voluntary conservation agreements good start; only down south through ‘Trust for Nature’” (*Atherton Shire Council*)

“No, not yet, lack of shire planning staff. Nature conservation out at Julatten though” (*Mareeba Shire Council*)

“Few nature refuges in the shire, private with National Parks and Wildlife Service. If a development application is in an environmentally sensitive area, will have a conservation covenant attached to the title deed to ensure protection” (*Cardwell Shire Council*)

This study of specialist accommodation operations found 18.6% (n=19) of the respondents had a voluntary land conservation agreement in place on their property, with most of these (11.8%) holding Land for Wildlife agreements. Management of Land for Wildlife has recently been taken over by Greening Australia and was formerly managed by the Queensland Parks and Wildlife Service (QPWS).

5.3.7 Corporate Plans and Environmental Accountability

Finally, questioning within the interviews focused on the completion of Corporate Shire Plans and whether environmental codes of conduct for tourism accommodation operations within the Shire and near protected areas had been considered. The interviewees most often indicated recent corporate plans were in a draft completion stage and the detail of environmental accountability was minimal.

“Yes, the 2004 – 2008 Corporate Plan is almost complete. Tourism accommodations are not detailed; reference is better to planning development codes. In the future would like to see an environmental code of conduct accounted” (*Mareeba Shire Council*)

“The Draft planning scheme is about to be implemented – biodiversity and scenic overlays taken off. The corporate plan has vision, there is no operational to tie into it [though]. More businesses are not as green as they say they are, there seems to be a lack of knowledge of what green should be” (*Douglas Shire Council*)

“The corporate plan is up for review. In draft planning scheme, limit clearing. Unknown if accommodation near protected areas is considered, but rural stay accommodation has environmental and cultural factors” (*Eacham Shire Council*)

“The draft planning scheme to be in mid next year (2005). The draft planning scheme has B&B’s code assessable, if near protected Wet Tropics area will trigger environmental impact assessment, more consulting, maximum of five rooms including cabins or the like” (*Herberton shire Council*)

“Atherton Shire corporate plan – new one coming (redone every four years). In the planning scheme, 4.10 Tourism codes impact assessable and code assessable. In the corporate plan review hoping it will address sustainability and environmental responsibility” (*Atherton shire Council*)

“There is a draft planning scheme and the Mareeba corporate plan. Tourism accommodations near protected areas are not considered – need more staffing and resources to account for this. The [planning] scheme is a starting point and would like to introduce [environmental codes] in future” (*Mareeba Shire Council*)

5.4 Wet Tropics Management Authority

The environmental management agency interviewed was the Wet Tropics Management Authority. The Wet Tropics Management Authority (WTMA) is responsible for the protection, conservation and preservation of the World heritage listed rainforests of North Queensland for future generations. Day-to-day management of the WTWHA including national parks within its boundaries are the responsibility of the Queensland Parks and Wildlife (QPWS) who are under the direction of the Queensland Environmental Protection Authority (EPA). EPA, QPWS and WTMA are a cohesive unit charged with the responsibility of the conservation of protected land areas within the Wet Tropics of North Queensland.

An interview conducted with C. Clarke, the Senior Planning Officer of WTMA on the 4 March 2005 investigated the interaction of WTMA with specialist accommodation operations located near the Wet Tropics World Heritage Area (WTWHA) rainforests of

North Queensland. There are approximately 300 private freehold land holdings within or neighbouring the WTWHA in North Queensland. All quotations in section 5.4 are the result of this interview unless otherwise stated.

5.4.1 Awareness of Specialist Accommodation Operations

Historically, “when the world heritage area was claimed in 1988 there was protest against the loss of the logging industry, now [this is] turning around with tourism helping to conserve the Wet Tropics”. There is an awareness of specialist accommodation operations located near the protected Wet Tropics. The benefits of these businesses in their location are that specialist accommodation operations are a “preferable land use rather than agriculture; rehabilitation of the rainforest occurs by specialist accommodation operators; and thirdly they are presenting the World Heritage values to the visitor”. This presentation of world heritage values has a “marketing bonus for both the WTMA and the specialist accommodation operators”. However, “tourism operators are more of an asset”. There is the “strength of bed and breakfasts for local town economies, [especially] with the wildlife attraction and rainforest as well”.

This was followed this up by asking if there were any direct, indirect or cumulative impacts identifiable from the presence of these specialist accommodation operations within the Wet Tropics. There are a “few existing but no real impacts, a small problem with water, access and weed control – all minor”.

5.4.2 Recommendations for Environmental Management

Enquiries were made as to whether recommendations for environmental management practices and sustainable design principles were offered to the specialist accommodation operators located near the WTWHA. According to the Senior Planning Officer, there are recommendations in place and “more operators are changing to sustainable techniques” and attitudes have also changed with “people more supportive of the Wet Tropics Management Authority”. WTMA will “where possible promote aesthetic [design], and scenic values are

a criteria”. “WTMA comments on all Shire planning schemes, especially roads and aesthetics”. It was noted by the interviewee “many people (like B&B’s) are already doing environmental management, [particularly] due to their markets targeted”. The “Johnstone Shire Landholders book has information in it” and “funding for other Shire handbooks is being chased”. In sum, “a cooperative approach works better”.

The *Johnstone Shire Landholders Handbook* (n.d.) is a joint collaboration between the Johnstone Shire Council, Natural Heritage Trust and the Wet Tropics Management Authority. Topics include an introduction to the natural attractions of the shire; planning your new home including site analysis; sustainable house design; water, waste and power options; environmental guidelines and assistance; agriculture and nature conservation; ecology management; weed management; feral pests; and about living with wildlife. These handbooks are available from the Johnstone Shire Council office and WTMA office. At the time of the interview, WTMA were in the process of seeking out funding for future editions of the landholders handbook for other local council shires within the region.

5.4.3 Environmental Codes of Conduct and Licensing

Information was sought regarding the presence of an environmental code of conduct for tourism accommodations put forward by WTMA. There is no environmental code of conduct for these operators but there is a “code of practice for infrastructure operators, visitor centres and the tourism operators group [however] the tourism operators group is not quite extended to the accommodation operators”. “Accreditation is starting” though mainly for licensed tour operators using the WTWHA. The “landholders/ neighbours liaison group has just fallen” but there was hope of rebuilding this group as “working with the community is great”.

Enquiries were made as to whether the specialist accommodation operators neighbouring the protected area required a permit or license to operate. In reply, “walking is not regulated, [but] vehicle access is regulated. A permit [is required] from Queensland Parks

and Wildlife to get a World Heritage information sticker [for vehicle access]” into the WTWHA. All accommodation properties advertising their proximity to walking tracks and natural attractions in National Parks and the WTWHA also require a permit from QPWS.

5.4.4 Voluntary Conservation Agreements

Finally, questioning turned to the encouragement of voluntary conservation agreements for private landholders located near the protected areas to protect ecological biodiversity. The information provided indicated WTMA “do encourage and promote voluntary conservation agreements, especially for cassowary corridors. There are new covenants under the *Land Protection Act* [and] at present there are approximately 40 conservation management agreements outside the Wet Tropics World Heritage Area”. The *Wet Tropics Conservation Strategy* (2004a, p. 36) proposes “voluntary conservation mechanisms will often achieve better and more equitable conservation outcomes than regulation”.

Table 5.2 illustrates the voluntary conservation agreements and their characteristics in place as at April 2004. There are approximately 257 voluntary conservation agreements in the Wet Tropics area. All of the conservation management agreements are within the Douglas Shire covering almost 135 hectares (Carmody & Zeppel, 2004). Advice and assistance is available for all of the voluntary conservation agreements. All conservation agreements except Land for Wildlife have financial incentives, can have a set term of years or are held in perpetuity.

Table 5.2: Summary of Voluntary Conservation Agreements and Characteristics in the Wet Tropics

<i>Agreement Type</i>	<i>Financial Incentives</i>	<i>Advice & Assistance</i>	<i>Set Term of Years</i>	<i>In Perpetuity</i>	<i>Binds Future Owners</i>	<i>Low Level of Security</i>	<i>High Level of Security</i>	<i>Number of Agreements in Wet Tropics</i>
Conservation Covenants	√	√	√	√	√		√	40 (perhaps more)
Cooperative Management Agreements	√	√	√	√		√		38 CMAs 2 other agreements
Land for Wildlife		√				√		154 properties (1987 ha)
Nature Refuge	√	√	√	√	√		√	24 properties (5679 ha)
Commonwealth Conservation Agreements	√	√	√	√	√		√	None as yet

Source: Wet Tropics Management Authority (2004a)

5.5 Tourism and Accommodation Associations

This section presents the results about environmental codes of conduct from relevant tourism and accommodation associations. These associations were taken from results obtained with the *Specialist Accommodation Survey* whereby respondents identified membership. A one page questionnaire was posted or emailed to nineteen (19) tourism and accommodation associations identified in the *Specialist Accommodation Survey* (see Appendix C). Local, State and National tourism and accommodation associations were included in the sample (see Table 5.3).

Table 5.3: Tourism and Accommodation Association Sample

Local Tourism Associations	Port Douglas Daintree Tourism Association (PDDTA)	Daintree Village Tourism Association (DVTA)	Mission Beach Tourism (MBT)	Daintree Cape Tribulation Tourism Association (DCTTA)	Tourism Tropical North Queensland (TTNQ)	Tropical Tablelands Tourism (TTT)
Local Accommodation Associations	Bed & Breakfast Farmstay Association of Far North Queensland (BNBNFNQ)	Atherton Tablelands Accommodation Group				Yungaburra Business & Citizens
State Tourism Associations						
State Accommodation Associations	Caravan Parks Association of Queensland	Queensland Hotels Association (QHA)	Queensland Bed & Breakfast Association (QBBA)			
National Tourism Associations	Wildlife Tourism Association (WTA)					
National Accommodation Associations	Hotel Motel Accommodation Association (HMAA)	Australian Hotels Association (AHA)	Top Tourist Parks of Australia	Big 4 Holiday Parks	Campervan & Motorhome Club of Australia (CMCA)	Youth Hostels Australia (YHA)

The 101 specialist accommodation operators identified 191 memberships for a multiple response question on the *Specialist Accommodation Survey* (see Section 4.4.3). Membership with tourism and accommodation associations by individual businesses in this study was mostly undertaken for marketing reasons. Membership was highest with the Bed and Breakfast and Farmstay Association of Far North Queensland (BNBNFNQ) (30.7%), Tropical Tablelands Tourism (TTT) (26.7%) and Mission Beach Tourism (MBT) (18.8%). Membership was lowest with Ecotourism Australia (3.0%) and Wildlife Tourism Australia (5.0%). Only 5.9% of the specialist accommodation respondents reported not being a member of any tourism or accommodation association. Five other accommodation groups (Malanda, Kuranda, Mission Beach, Innisfail, and Mareeba) were identified by the specialist accommodation operators, however, postal or email addresses were unobtainable

for these and thus omitted from the sample. Ecotourism Australia was not included in the sample as their EcoCertification benchmarks are discussed and utilised for the purpose of this study examining ecological sustainability of specialist accommodation operators.

In total, fourteen (14) associations returned a completed questionnaire resulting in a 73.7% response rate. The questionnaire posted to the tourism and accommodation associations briefly enquired about membership size (see Table 5.4); the purpose of the association (see Table 5.5); environmental policies; the provision of an environmental code-of-conduct for members; recommendations for environmental best practice; and if the association offered environmental awards to encourage best practice.

Table 5.4: Membership Size

<i>Membership Size</i>	<i>Frequency</i>	<i>Percent</i>
Less than 20 members	0	0
21 – 50 members	3	21.4
51 – 100 members	2	14.3
More than 100 members	9	64.3
Total	14	100.0

5.5.1 Association Purpose

Respondents were asked to indicate the main purpose of their tourism or accommodation association from a given list. Table 5.5 shows collective marketing (71.4%) is the most dominant purpose of an association. Environmental protection was the least cited reason for an association’s existence. Other purposes (28.6%) were to provide free information to visitors and prospective visitors; support for industrial relations, workplace health and safety and other legislation; education and training; and networking for business reasons.

Table 5.5: Purpose of Association

<i>Purpose</i>	<i>Frequency</i>	<i>Percent</i>
Collective marketing	10	71.4
Representation	6	42.9
Policy advice	4	28.6
Other	4	28.6
Social networks	3	21.4
Environmental protection	1	7.1
Total	28*	

*Multiple response question, total more than n=14

5.5.2 Environmental Policies

Enquiries of an environmental policy found only five (n=5) associations having one of these in existence. These were the Hotel Motel Association of Australia (HMAA), Caravan Industry Australia (CIA), Campervan and Motorhome Club of Australia (CMCA), the Atherton Tableland Information Centre and an unidentifiable association. Only the CMCA returned a copy of their environmental policy with the survey indicating two policies of annual tree planting to offset carbon dioxide production from the CMCA National Headquarters coordinated with the Greenfleet organisation and CMCA Headquarters are active recyclers of all office paper and cardboard. A cross-tabulation analysis of an association's membership size and the existence of an environmental policy indicate those associations with more than 100 members are more likely to have an environmental policy for their members (for example, HMAA, CMCA).

Only two (n=2) of the associations had an environmental code-of-conduct for their members and one (n=1) unidentifiable association noted an environmental code-of-conduct under construction. The two associations having an environmental code-of-conduct are the CMCA and HMAA. The HMAA indicate they will research any matters of concern and advise their members. The CMCA produce information booklets for their members; an environmental code is recommended for black and grey waste water practices, and solid waste disposal for caravan and motorhome owner members.

Three (n=3) of the associations recommended environmental best practice to their members. These were the HMAA, who advise members after researching their needs, PDDTA and the QHA. The QHA are particularly concerned with best practice water conservation techniques. The BNBFNQ recommends Wildlife Tourism Australia's principles to their members who have wildlife on their accommodation property. TTNQ and an unidentifiable respondent indicated recommendations of environmental best practice for their members were under consideration. Two (n=2) associations offered environmental awards to their members to encourage best practice environmental management. The HMAA offers an environmental award and TTNQ indicate an ecotourism award is offered to their members. The QHA and an unidentifiable respondent indicate consideration is presently being given to environmental awards to encourage best practice.

5.6 Summary

Local Shire Councils, tourism and accommodation associations and environmental protection authorities such as the Wet Tropics Management Authority are key stakeholders in the future development of the specialist accommodation sector. The third objective of the research thesis was to review environmental policies recommended by protected area management agencies, local councils and tourism and accommodation associations for specialist accommodation operations. This chapter has presented the results of the interviews held with the regulatory agencies (that is, the local Shire Councils and WTMA) and the tourism and accommodation associations that specialist accommodation operations are members of in North Queensland.

Regulatory bodies understood to interact with the specialist accommodation sector were the Local Shire Council town planning departments, the Wet Tropics Management Authority and tourism and accommodation associations. Qualitative data collected from the seven Shire town planners and senior planning officer at WTMA focused on the encouragement and provision for environmental management practices and future sustainability of the

specialist accommodation sector located near protected areas in Far North Queensland. The postal survey sent to tourism and accommodation associations focused on the existence of environmental policies, environmental codes-of-conduct and environmental awards to encourage best practice for their members. In essence, this investigation was concerned with the existence of environmental policies and guidelines for the specialist accommodation operators located near the Wet Tropics and other protected areas.

There are seven local Shire Councils in this study who have substantial areas of high ecological value. The Wet Tropics forms a backdrop to the nature-based tourism sector in the North Queensland region. Although the specialist accommodation sector may be considered small, there has been a noticeable increase in this style of accommodation within the past eight years located near protected areas. An examination of the local councils indicates local by-laws do not carry environmental best practice within all Shires.

Shire planning schemes do however have the opportunity and are a reasonable mechanism for the control of environmental impacts and deliverance of environmental best practice advice to this sector of the nature-based tourism industry. What does stand out though, is the absence of a mechanism to encourage environmental best practice management for existing specialist accommodation operations as only new developments will be assessed under recent relevant codes. This is supported by the recent addition of codes for bed and breakfasts, farm stays, caravan parks and vegetation by some Shires in recent updated planning schemes (Atherton, Mareeba, Johnstone, Douglas).

Corporate Plans (Atherton and Douglas) and desired environmental outcomes for the Shires of Mareeba, Eacham, Herberton, Cardwell and Johnstone indicate the recognition of the need to protect natural biodiversity for future sustainability. Environmental codes-of-conduct for tourism accommodation within each Shire are not available and there appears to be agreement from each Shire town planner that this may discourage specialist accommodation operators if these were directed by the local council. Only Johnstone Shire has a *Landholders Handbook* indicating environmental best practice for water, energy,

waste, sustainable design, feral pests and living with wildlife. Douglas Shire is the only council to offer monthly environmental awards to small business recognising their commitment to environmental sustainability. Only Johnstone Shire Council had its own conservation covenants for landowners, although these were encouraged by Eacham and Cardwell Shires where development applications involved environmentally sensitive areas.

The Wet Tropics Management Authority recognised a cooperative approach between stakeholders of the Wet Tropics is imperative for the future sustainability of this icon. WTMA iterates there are environmental recommendations in place however people appear more aware and adept changing to sustainable techniques. There is no environmental code-of-conduct for specialist accommodation operators initiated by WTMA however there is an environmental code of practice for infrastructure operators, visitor centres and tour operators. Accreditation mainly for tour operators using the Wet Tropics by WTMA was in the initial stages at the time of the interview (March, 2005). A landholders/ neighbours liaison group had just collapsed but there was hope of this rebuilding as the benefits of working with the community are recognised. WTMA encourage and promote voluntary conservation agreements with private landowners within the Wet Tropics region particularly where cassowary habitat corridors are located.

Tourism and accommodation associations were examined for the existence of environmental codes-of-conduct, best practice policies and certification for their members. Specialist accommodation operators were largely members of local tourism and accommodation associations, most frequently citing the BNBNNQ. Of the 14 respondents, nine associations had more than 100 members and the most dominant purpose of the association is collective marketing. Five associations had environmental policies in place and two associations had an environmental code-of-conduct for their members. Three associations indicated recommending environmental best practice to their members and two associations offered environmental awards to encourage best practice techniques.

This chapter has provided the results of the current study investigating the level of interaction held between specialist accommodation operators and the regulatory agencies of local Shire Council town planners, the Wet Tropics Management Authority and tourism and accommodation associations. An in-depth discussion of these results with those of the specialist accommodation operations located near protected areas in North Queensland is provided in Chapter Six.

CHAPTER 6: DISCUSSION

Structure of the Chapter

6.1 Introduction

6.2 Specialist Accommodation Operations

6.3 Environmental Management Practices

6.4 Environmental Attitude Measurement

6.5 Environmental Attitudes and Environmental Behaviour

6.6 Environmental Certification

6.7 Environmental Regulation for the Specialist Accommodation Sector

6.8 Summary

6.1 Introduction

This exploratory study has examined the environmental attitudes and sustainable practices of the specialist accommodation sector in North Queensland. The thesis is guided by the research question “How do specialist accommodation operators located near protected areas manage and protect the natural environment?” The objectives of the study were to explore the implementation of environmental management techniques by the specialist accommodation operators who are located near or neighbouring protected areas and to understand the environmental attitudes held by these small tourism accommodation operators. The specialist accommodation operators’ attitude towards the environment was measured using the New Ecological Paradigm (Dunlap et al. 2000). The existing interaction between these specialist accommodations with environmental management agencies, tourism associations and local government has also been investigated. Specialist accommodation included in this research were ecolodges, retreats and spas, bed and breakfasts, farms stays, licensed public hotels, cottages and cabins, caravan parks, houseboats and backpacker hostels. These styles of accommodation have been previously identified and discussed by Moscardo et al. (1996); Morrison et al. (1996), Wight (1997) and Beeton (1998). The accommodation styles are conducive to the ecotourism, rural tourism and nature-based tourism sectors with characteristics of the alternative tourism sector. This type of tourism accommodation is similar to the adaptancy platform postulated

by Jafari (1989) and often referred to as soft ecotourism as a form of mass tourism (Weaver, 2001). The specialist accommodation styles are small scale, dispersed throughout an area, complementary to the nature-based setting and are locally owned small businesses.

Overall 101 specialist accommodation operations were surveyed in the Atherton Tablelands (n=50), the Daintree region (n=32) and Mission Beach region (n=19), all surrounding areas of Cairns in Far North Queensland. From this sample of 101 specialist accommodation operations, 30 qualitative semi-structured interviews were conducted with eight bed & breakfasts, eight caravan/ cabin/ camping operations, five cottage/ cabin style operations, three farm stays, three licensed public hotels, two retreats, one ecolodge, one backpacker hostel and one houseboat operation. As well, seven local Shire Council Town Planners and the Senior Planning Officer of the Wet Tropics Management Authority were interviewed. Postal and email surveys were collected from 14 tourism and accommodation associations.

Although differing styles of accommodation have been examined, similarities as defined by the key qualifying criteria of specialist accommodation (Morrison et al., 1996) align with the nature-based tourism sector. The qualifying criteria for specialist accommodation are a host-guest interaction; location, features or services of the establishment offer guests a special opportunity or advantage; special activities are offered to the guest; the establishment is owner-operated; and there is a small guest accommodation capacity with less than 25 rooms. The entire sample of specialist accommodation operations in this study were either neighbouring (n=30) or located within 50 kilometres of a protected area in the world heritage listed Wet Tropics bio-region.

This chapter provides a discussion of the results achieved in terms of the objectives of the study. Comparative studies of the specialist accommodation sector, the socio-demographics of the specialist accommodation operators and their accommodation sector are first reviewed. Following, is a discussion of the results in terms of the objectives of the study - the implementation of environmental management practices; the measurement of environmental attitudes; perceptions of environmental certification; and the interaction

between regulatory agencies and the specialist accommodation sector. The situational factors affecting the implementation of environmental management practices as defined by the Framework of Environmental Behaviour (Barr, 2004; Gilg & Barr, 2005) are also provided.

6.2 Specialist Accommodation Operations

This study described the 101 specialist accommodation operations surveyed and the demographic characteristics of the operators of these types of establishments. As the question of accommodation style was a multiple response answer question, recoding of the 101 specialist accommodations was undertaken for further analysis. This process resulted in the sample comprising 35 bed and breakfasts (B&B), 17 cottage and cabin styles, 17 caravan parks, 10 farm stays, nine licensed public hotels, six retreats, four backpacker hostels and three other specialist accommodations that included a guesthouse, ecolodge and houseboat operation. The focus of the caravan parks are their cabin accommodation. Bed and breakfasts, cabins, cottages and caravan parks comprise more than 60.0% of the sample.

The thirty interviews conducted with the owner/ s of specialist accommodation operations included all styles of accommodation from the sample based on the number of survey responses from each region. The interviews conducted on the Atherton Tablelands (n=15), in the Daintree Region (n=9) and Mission Beach Region (n=6) involved eight bed & breakfasts, eight caravan/ cabin/ camping operations, five cottage/ cabin style operations, three farm stays, three licensed public hotels, two retreats, one ecolodge, one backpacker hostel and one houseboat operation. All of the specialist accommodation operators in the sample are located within 50 kilometres of a protected area and 30.0% are neighbouring a protected area, mostly the WTWHA. The information collected at the specialist accommodation interviews and although beyond further discussion in this study, indicates the specialist accommodation operators in North Queensland are primarily targeting and attracting local domestic markets from Cairns to Townsville. In turn, these local domestic

visitors do not appear to want to travel far to enjoy nature-based features or activities offered at these accommodation styles. There is a lack of information about the market demand for this tourism accommodation industry in Australia.

6.2.1 Various Styles of Specialist Accommodation Operations

This study is concerned with fixed roof specialist accommodation styles in natural areas both rustic (hut, cabin) and comfortable (ranch, lodge, inn, B&B) as delineated by Wight (1997; refer Figure 1.2). Many of these accommodation styles are similar in characteristic. For example, there are farm stays with cottage accommodation and cabins offering breakfast hampers on arrival. These styles of accommodation may also be divided into detached (that is, being freestanding cottages or cabins isolated away from each other) or they are attached to or within a main accommodation homestead, similar to the Australian Bed and Breakfast Council (ABBC) who identify two types of B&B in Australia. Traditional B&B include homestay, farmstay, inn, guest house and country retreats. Self catering B&B include cottages and apartment suites (Australian Bed & Breakfast Council, 2001). The advantage of cottages and cabins is the ability for owners to distance these accommodation styles where land area permits away from each other. This siting technique allows the owner to take advantage of natural light and ventilation flows, grants privacy for the guest, and maintains an atmosphere of environmental significance, availing the guest a feeling of isolation and contributing to rest and relaxation. As Wight (1998) argues, resource situated accommodation operators in natural or rural areas should be aware it may well not be the accommodation itself which is the attraction, but the overall experience provided. A similar point is also made by McIntosh and Siggs (2005) who outlined five key dimensions – unique character, personalised, homely, quality and there is value added for boutique or specialist accommodation that contributes to the overall experience. Indeed, the current study acknowledges the importance of the Wet Tropics rainforests and native birdlife/ wildlife species which contribute to the nature-based experiences provided by the specialist accommodation sector. Although the majority of the specialist accommodation operators indicated using their own freehold land for guest activities, the

surrounding rainforest and protected areas are enhancing and contributing to the visitor experience.

All of the accommodation styles in the study fit the specialist accommodation defining criteria. All of the accommodations were owner-operated and had a personal guest-host interaction, enabled by the small guest capacity fulfilling three of the characteristics defined by Morrison et al. (1996). The average number of guest rooms or cabins in this study is 5.8. The location, features of an establishment or service as special features was evident at each of the specialist accommodation operations visited. Examples include, many of the specialist accommodations having platypus, tree kangaroos, cassowary, possum or other endangered species habitat on their property. Nineteen of the specialist accommodation operators had undertaken voluntary land conservation agreements to protect areas of ecological significance on their property for future generations. The features of an establishment include the sustainable design of the accommodation particularly private balconies overlooking natural rainforest or bushland, large spa baths on the balconies, and farm activities. Examples of service being a special feature include a backpacker hostel which interacts with the local farming community to engage backpackers in work facilitated by a daily bus service to the individual farms provided by the hostel; cabin and retreat style accommodations which call in personal masseuses on guest requests in the privacy of their own cabin; or the cottage operator who will drop guests off at nearby protected area walking trailheads and leaves their car at the other end for their guest's convenience.

Various opportunities for rest and relaxation are provided by the specialist accommodation sector often emphasised by the surrounding natural bush and rainforest environments. Visiting and on-site masseuse, spa treatments, and mud baths are offered to the guest, as are homemade chocolates and jams, local fresh produce, local fruit wine, and locally grown coffee and tea. Some of these specialities are provided in breakfast hampers, in the accommodation itself or with meals cooked by the host. Other accommodation styles notably cabins, cottages and caravan parks provide self-catering opportunities. The licensed public hotels located within close proximity to protected areas and nature-based

scenic attractions, have individual character, historical significance, and provide meals and comfortable accommodation. Often history, relics, and information about the local area are displayed inside the licensed hotel for the guests understanding whilst contributing to the atmosphere of the hotel. Specialist accommodation operations situated near or neighbouring protected areas have a locational advantage to rainforest, waterfalls, lakes, craters, limestone caves, walking trails, and other significant nature-based attractions.

Lastly, special activities are offered to guests. Within this study the most popular activities were opportunities for relaxation and reading, bird watching, native wildlife viewing, bushwalking/ walking tracks and swimming. Many specialist accommodation operations offer purposely created bushwalking tracks educating guests of the natural floral species of an area through identification tags and brief literature; others introduce guests to indigenous bush tucker plants, previously sighted bird species and wildlife. Cabin and cottage style operations provide wildlife and birdwatching opportunities from the accommodation regardless of the guest's level of interest. Bird lists of sighted species are often provided in the accommodation for the guest. Farm stays provide farm activities (for example, animal feeding and egg collecting), although increasing insurance costs appear to be limiting the range of farm activities allowing guest participation (for example, horse riding). Opportunities for fishing, trapping red claw and night-spotting of wildlife are other types of nature-based activities provided by houseboats, retreats, B&Bs and cabin and cottage style specialist accommodation.

Previous studies of the specialist or boutique accommodation operations have predominantly had a consumer focus (Lee, 2002; Beaumont, 2001; Weaver & Lawton, 2001; Weaver, 1997; Pearce, 1990). This study provided an owner-operator focus to the specialist accommodation sector located near protected areas, specifically their environmental attitudes and adoption of environmental management techniques. Although the study is undertaken in North Queensland, the results are applicable to other regional and rural areas within Australia where these styles of accommodation are located, particularly near protected areas of ecological significance. For example, in the past decade there is

evidence of increased numbers of these styles of accommodation on the Gold Coast and Sunshine Coast hinterlands to the north and south of Brisbane, Queensland. As well, climatic conditions of the Wet Tropics to other tropical global locations near the equator may assist other specialist accommodation operators and regulatory agencies to adopt various environmental management techniques and other principles of sustainability identified from this study.

6.2.2 Demographic Characteristics of the Operators

There is a lack of research of the specialist accommodation sector in Queensland, Australia or even globally as to who are the operators of these styles of accommodation. Although this study was centred on the environmental attitudes held and the environmental management practices implemented by specialist accommodation operations, there is of course the question of “who are these people” which must precede the question, “what are they doing to manage and protect surrounding high-order protected areas?”

All of the participants in this study are owner-operators of specialist accommodations. The specialist accommodation operations in North Queensland are operated by a husband/ wife/ de facto team and/ or with immediate family. As such, these accommodation establishments can also be considered a family business. More females than males comprise the sample, although it appears the female partner of the specialist accommodation is responsible for the administrative matters of the business, including correspondence. Owner-operators were predominantly aged over 40 years with the largest age group being those 50–59 years. Regarding education, 55.0% of the specialist accommodation operators surveyed held tertiary or trade qualifications. The predominant reason for respondents to move into the specialist accommodation sector was for personal reasons, mostly for a change of lifestyle and financial reasons. This was particularly evident with those aged between 48 and 60 years of age. The majority of specialist accommodation operators had operated their business for eight years or less (80.2%). Of interest is the recent growth (within the past eight years) of cottages and cabins (n=15) and bed and breakfast (n=26) accommodation styles in the geographical regions studied in Far

North Queensland. Correlations were not found between a specialist accommodation operator's previous occupation, education or primary reason for entering the specialist accommodation sector.

A seminal review of specialist accommodation in Queensland by Morrison et al. (1996) suggest owners of these establishments are predominantly couples aged 40 to 55 years, have higher education levels and worked in professional, educational, administrative, sales, computer or human-services sectors. It was also suggested these entrepreneurs were becoming younger and entering the business for lifestyle opportunities and financial betterment. These demographic characteristics reported by Morrison et al. (1996) and others (Moscardo et al., 1996) are supported by this doctoral study, with the exception of younger operators entering the market. In this study, the specialist accommodation operators were mainly aged 48-60 years. However, during the data collection phase (2004-2005) approximately 10% of operators indicated they were considering, intending or already did have the specialist accommodation property for sale, mostly for retirement reasons. There appears to be a generational move occurring from the Baby-Boomers to Generation X entering the specialist accommodation sector, related to an individual's life cycle stage. This possible change to younger specialist accommodation operators entering the market could be expected to bring a different environmental attitude and level of concern for the surrounding environment to the sector.

Comparative to this study, research by Getz and Carlsen (2000) of 198 family or owner-operated tourism businesses in Western Australia resulted in 75% of their sample being accommodation operators of farm stays (25.1%), campground/ resort/ self-catering styles (22.6%) and B&B operations (21.4%). Getz and Carlsen's (2000) study also found females to be the largest gender within these styles of accommodation and counters this imbalance as possibly reflecting the dominance of women in B&B and farm stay operations. These operators were similar in age groups to the present study, although slightly younger (dominant age group 45-54 years, 41.4% and 35-44 years, 24.1%) and a similar level of education (57.7% had trade or tertiary qualifications). These authors discovered 65.1% of the respondents within their sample had established the business less than ten years prior to

the research being conducted. The reasons for respondents to move into the accommodation sector are very similar to this study, that is, lifestyle reasons are dominant. Getz and Carlsen (2000) found the appealing lifestyle, living in the right environment, money and independence to be important start-up goals for rural family businesses in Western Australia. The results of Morrison et al. (1996), Getz & Carlsen (2000) and this study are comparative. Hence, the findings of this present study are also representative of the specialist accommodation operations sector within regional areas of Australia.

6.3 Environmental Management Practices

Identifying the environmental management practices implemented by specialist accommodation operations located near protected areas in Far North Queensland was the first objective of the study guided by the following questions:

- a) What environmental management techniques do specialist accommodation operators implement?
- b) Are there differences in environmental management techniques used by the various styles of specialist accommodation operations?
- c) Is environmental monitoring of the surrounding area undertaken by specialist accommodation operators?
- d) Is environmental education and interpretation provided to guests by specialist accommodation operators?

Comparisons of the adoption of environmental management techniques with previous studies at similar accommodation styles within the Australian tourism industry are provided. Quantitative research methods (i.e. postal surveys) provided much of the data about the environmental management techniques implemented by the specialist accommodation sector located near protected areas in Far North Queensland. Qualitative data collection techniques (i.e. face-to-face interviews and observation) provided depth to the survey results. The 48 environmental management techniques explored were sourced from benchmarked practices of Ecotourism Australia's EcoCertification Programs, Green Globe's Company Standard and AAA Tourism's Green STARS program. Previous studies

of environmental management techniques in tourism accommodations were also consulted (Buckley & Araujo, 1997; Firth & Hing, 1999; Getz & Carlsen, 2000; Carlsen et al., 2001). Water conservation, energy conservation, liquid waste management and solid waste management, sustainable design and other sustainable practices are discussed across the styles of specialist accommodation. It was difficult to ascertain differences in the adoption of individual environmental management techniques by the style of accommodation or location due to insignificant statistical results. For the same reasons, links between the operators' implementation of environmental management practices and their environmental attitude were difficult to ascertain.

6.3.1 Adoption of Environmental Management and Differences

The results of this study of 101 specialist accommodation operations implementing environmental management techniques showed the highest responses for dual flush toilets (85.1%); the purchase of goods in bulk (78.2%); purchasing of local goods and services (97.0%), the use of biodegradable cleaning products (85.1%) and the regular mulching of gardens (80.2%) which assists in water conservation. Within the area of sustainable design, operators indicated the use of natural ventilation (91.1%), landscaping reflecting the surrounding environment (89.1%) and the use of natural light in buildings (86.1%). Lowest responses across all of the environmental management techniques in this study are for alternative options such as solar hot water (16.8%), wind turbines (1.0%), cogeneration (3.0%), composting toilets (5.0%), the use of recycled building materials (30.7%), permaculture (9.9%) and involving guests in conservation (6.9%). Low responses for the intention to adopt environmental management techniques within the next 12 months may be indicative of the owner-operators perception that they are currently implementing environmental management practice to the best of their knowledge and ability.

Comparatively, the study of 198 Augusta-Margaret River Tourism Operators in Western Australia by Carlsen et al. (2001) indicated family business farm stays, bed and breakfasts, self-catering camping grounds and cabins implemented water conservation procedures (79.5%), separated recyclable waste (58.5%) and provided guest education of

environmental matters (51.0%). Education on conservation matters to guests was highest with the farm stay operators and campground operators in their study. The lowest participation rate was for the implementation of alternative non-polluting energy sources (39.2%). However, Carlsen et al. (2001) only enquired about seven broad environmental management practices, not a large range of individual techniques, as did the present study. The seven environmental practices in the study by Carlsen et al. (2001) were follow water conservation procedures, follow a recycling program, educate guests on conservation matters, eliminate non-organic chemicals, targets for waste reduction, targets for energy conservation, and use alternative non-polluting energy sources. All but setting targets for energy and waste reduction were enquired about in the current study. Firth and Hing (1999) showed from 30 specific environmental management practices the provision of easy to implement conservation measures prevailed such as low flow shower heads, energy efficient light bulbs and recycling bins for guests were in use by six backpacker hostels in Byron Bay, New South Wales. Although, the environmental management techniques explored are comparative to this study, a small sample of six hostels is questionably representative of the backpacker accommodation sector.

This obvious lack of implementation of alternative environmental management techniques using solar, wind or water, may indicate a slow pro-environmental shift within the green tourism sector but as discussed further in this chapter, consideration needs to be given to internal and external factors impeding the uptake of these practices. As noted by Peters and Turner (2004), the voluntary implementation of environmentally sustainable initiatives will rely largely on whether participants believe the benefits will outweigh the costs.

6.3.2 Water Conservation

The importance of water conservation has been espoused by many. Australia is characterised as being the driest inhabited continent in the world (Kavanagh & Keller, 2000). The environmental management techniques for water conservation explored within this research were dual flush toilets (85.1%), low flow shower heads (56.4%), the provision of showers only (49.5%), drip irrigation for gardens (40.6%), rainwater tanks (36.6%), tap

aerators (36.6%), solar hot water (16.8%) and other water conservation techniques (5.9%). Although, dual flush toilets (85.1%) are the most dominant water conservation technique implemented, these are now standard systems designed to use less water and explain the higher implementation of this technique. Approximately half of the respondents indicated their accommodation provided showers only (49.5%) and used low flow shower heads (56.4%). These results may be attributed to the purpose of the accommodation and the activities provided. That is, the majority of these accommodations provide the opportunity for guests' rest and relaxation (77.2%) and baths/ spa baths are one method of accommodating this activity. As expected, caravan parks, licensed public hotels and houseboats provide showers only. Intentions by specialist accommodation operators to adopt water conservation practices in the next twelve months included the installation of low flow shower heads (5.0%) and solar hot water systems (4.0%).

The results of this study indicate all four backpacker hostels, 94.0% of the cottages and cabins, 90.0% of the farm stays, and 85.0% of the B&Bs had installed dual flush toilets. Rainwater tanks were mostly installed by retreats (50.0%) and B&B (41.2%) accommodation operations. Although, the qualitative results maintain rainwater tanks and holding tanks for spring water are common methods of water storage on the Atherton Tablelands and within the Daintree region, many indicated the installation of rainwater tanks is considered difficult with space limitations, initial cost and the concern for running out of water on a guest. The case studies of environmental management practices presented for Couran Cove Resort, Daintree Wilderness Lodge, Jemby-Rinjah Lodge and Kingfisher Bay Resort (Section 2.3) also verify fresh spring water delivered via bore to the property is a predominant practice. This can be attributed to the size of these properties in comparison to the specialist accommodation operations in this study. Backpacker hostels, farm stays, cottages, cabins, and licensed public hotels appear to be more water conservation conscious than the operators of caravan parks and retreats. Analysis of the water management techniques by location and accommodation style found no significant results. Carlsen et al. (2001) also found water conservation to be a priority for his sample of Augusta-Margaret River family tourism business operators. However at the time of their study, dry weather conditions and drought were prevalent in Western Australia. Unlike the current

study and that by Carlsen et al (2001), Firth and Hing (1999) discovered the least implemented environmental management technique by backpacker hostel operators in Byron Bay were water conservation practices (i.e. dual flush toilets and solar hot water).

6.3.3 Energy Management

Energy management techniques explored in this study were the installation of ceiling fans only (i.e. no air conditioners) (59.4%), energy efficient light bulbs (55.4%), the use of diesel or ethanol blend fuel (26.7%) and solar power (14.9%). Other innovative and efficient energy management techniques (6.9%) include the charging of lights by 4-stroke outboards on houseboats, the use of a donkey boiler for pool water heating while having a fire for guest comfort in a recreation outdoor area, and various timer and smart key tags for controlled energy use in cabins. Less than 6.0% of the specialist accommodation operators had implemented alternative methods such as hydroelectric power, cogeneration or wind turbines.

Related to sustainable or passive design, the use of ceiling fans combined with a north facing building orientation and maximisation of natural ventilation is an efficient method of cooling room spaces, particularly in tropical North Queensland (Wet Tropics Management Authority, n.d.). The use of ceiling fans only which are more cost and energy efficient than air conditioners is prevalent (59.4%) across the sample. Ceiling fans were used by 79.4% of B&B operators and 66.0% of the licensed public hotels. Energy efficient light bulbs were implemented by 55.4% of the specialist accommodation operators and another 5.0% were intending on installing these within the next twelve months. From the qualitative interviews though, the reasons for not using this type of light bulb appear to be focused on the incompatibility of these with humidity and generator use. A Kruskal-Wallis Test suggests a higher uptake of energy conservation practices ($p=0.086$; mean rank=59.9) within the Daintree region. This can be attributed to the absence of grid connected electricity north of the Daintree River and thus specialist accommodation operators are relying on alternative sources of power, particularly generators.

The adoption of alternative energy conservation practices by specialist accommodation operators is low, particularly solar hot water (16.8%) or solar energy (14.9%). Reasons for not using solar include cost; perceptions of the inefficiency of solar due to a lack of sunlight/ overcast days and often rainforest cover; and the suitability of solar techniques for the style of accommodation are existing factors inhibiting the implementation of these sustainable energy techniques. A small number of operators with suitable accommodation (for example caravan parks with central amenity blocks) stated they would like to install solar for hot water but due to cost and concern for running out of hot water, gas is the most efficient method. The implied benefits of gas hot water are instant heating and consequently not needing to store and maintain heated water temperatures. Previous research has shown financial rebates are motivating factors for tourism operators to adopt some environmental management practices such as alternative energy methods (Whiley & Carter, 2002), but only one cottage operator in this study had received a financial rebate for alternative energy practices and this was more than ten years ago. Increased knowledge of solar systems would alleviate the impacts of noise and air pollution on the environment if they were encouraged. This point is also made by Lloyd et al (2000) who reiterate a lack of knowledge hinders the adoption of renewable energy in remote areas. Overall, energy management techniques were adopted by the accommodation operators in this study more than ecotourism certified establishments investigated by Warnken et al (2005) whereby only 35% of their sample implemented energy efficient lighting.

6.3.4 Waste Management

Both liquid waste and solid waste management techniques in use by specialist accommodation operations located near protected areas in Far North Queensland are discussed. Almost half (n=40) of the respondents indicated some form of liquid waste management practices in use. The techniques explored were grey water reuse (21.8%), treated sewage reuse (17.8%) and composting toilets (5.0%). Other liquid waste management techniques (6.9%) in use by specialist accommodation operators are septic tanks, aerobic and anaerobic biocycle systems, and the collection and storage of black and grey water for breakdown and irrigation. These other liquid waste management techniques

and treated sewage reuse techniques were predominantly in place where municipal sewerage systems are not connected.

Grey water systems discussed with specialist accommodation operators on the Atherton Tablelands appear similar in principle. That is, grey water is either directed through septic tanks to soakage pits at least 15 metres away from natural water courses or is sent to an on-site biocycle system that uses aerobic and anaerobic digestion tanks. The latter technique allows treated grey water to then be used for lawn and garden irrigation purposes. Queensland's plumbing legislation reformed in 2006 now provides a legal framework for councils to allow the use of greywater in seweraged areas. The diversion of bath, basin, laundry or shower greywater to lawns and gardens by surface irrigation by manual bucketing or connecting a flexible hose to a washing machine outlet does not require council approval. However, subsurface greywater diversion requires council approval for the installation of greywater devices or treatment plants by a licensed plumber (Department of Local Government, Planning, Sport and Recreation, 2007).

Solid waste environmental management practices investigated within the *Specialist Accommodation Survey* were the purchasing of goods in bulk (78.2%), adherence to the slogan 'reduce, reuse, recycle' (59.4%), composting organic matter (57.4%), purchasing goods in recyclable packaging (56.4%) and separating recyclables (49.5%). The implementation of all of the solid waste practices is highest within the Atherton Shire. B&B operations are also more likely to implement all of the solid waste management techniques. For example, 85.2% of B&B operators purchased goods in bulk, composted organic matter (76.5%), practiced 'reduce, reuse, recycle' (73.5%) and separated recyclables (64.7%). The most desirable method of waste minimisation after avoidance according to the waste management hierarchy (Healey, 1999; Allen, 1994) is to purchase goods in bulk which reduces packaging waste, followed by reuse. In this study, almost 60% of operators indicated adhering to the 'reduce, reuse, recycle' slogan.

Differing from the study by Carlsen et al. (2001), the separation of recyclable waste was low in this study. The reasons for specialist accommodation operators not separating recyclable waste was mostly attributed to the non-existence of kerbside recyclable collection by the local authorities. At the time of the qualitative interviews, this service was not available within the Atherton Shire, Mareeba Shire, Eacham Shire, Cardwell Shire, Johnson Shire, and Herberton Shire. However, some operators did separate recyclables without kerbside collection dependent on the location of municipal infrastructure, storage space and time. Others collected and donated aluminium cans to local schools or community groups for fundraising purposes. A number of specialist accommodation operators encourage guests to separate rubbish by providing recycling bins in the accommodation (especially cabins and cottages). Other innovative sustainable waste practices include a licensed hotel operator reusing newspapers to make sturdy stubby coolers for customers. The best waste, energy and water efficient environmental management technique encountered was Clivus Multrum dry composting toilets installed in each of three guest cabins at a retreat on the Atherton Tablelands. These require no water, use a small fan generated by solar for drying waste, do not smell and only need emptying of the collection tank once every two to three years. The collected waste can be used on ornamental gardens for fertiliser. Kavanagh and Keller (2000) propose dry composting toilets are the ultimate sustainable environmental management practice.

6.3.5 Sustainable Design

The importance of sustainable design concepts can not be underestimated for specialist accommodation located near protected areas in tropical North Queensland. The advantages of sustainable building design have been espoused by notable authorities (Wet Tropics Management Authority, n.d.; Ceballos-Lascurain & Mehta, 2002; Cock & Pfueller, 2000). The techniques investigated through the postal survey to specialist accommodation operations were the use of natural ventilation (91.1%), landscaping reflecting the natural environment (89.1%), the use of natural light (86.1%), the use of locally sourced building materials (66.3%) and recycled building materials (30.7%). Previous research of environmental management techniques in tourism (Schaper & Carlsen, 2004; Firth & Hing,

1999; Buckley & Araujo, 1997; Morrison, 1996) has not included sustainable design practices. This discussion of sustainable design is focused on the quantitative and qualitative results achieved for this study and the relationship between the age of the accommodation and the principles of sustainable design.

Architecture styles change through the decades. The principles of sustainable design will feature more prominently in recently developed accommodation styles than those of earlier years. This study indicates retreats, cottages and cabins have implemented more sustainable design principles than caravan parks and licensed public hotels. Licensed public hotels, particularly within this study are predominantly historical establishments, many of which were established during the gold rush era of the early 1900s when sustainable design was not a coined phrase; however they still provide ample light and ventilation via large surrounding verandas. Indeed, two thirds of the licensed public hotels in this study have operated for more than 20 years, the longest operating for 124 years. This can be contrasted with 76.5% of the B&B and 88.0% of the cottage and cabin accommodation styles in this study operating for eight years or less utilising natural light and ventilation flows and locally sourced building materials. Only three of the 17 caravan parks have operated for less than eight years. The majority of caravan parks operating 20 years or more (n=9) have established landscaping to reflect the natural environment, use natural light and natural ventilation. Respondents who have built cabins and cottages in the past eight years had purposely given consideration to natural light and ventilation flows, the use of renewable forest timbers for building and the importance of a minimal ecological footprint. The accommodation facilities of a nature-based tourism operation should be harmonious with the cultural and natural landscape of the environment (Gardner, 2001).

6.3.6 Other Sustainable Practices

The list of other sustainable practices compiled in the *Specialist Accommodation Survey* was sourced from Ecotourism Australia's EcoCertification Program, Green Globe and previous literature examining the implementation of environmental management techniques at tourism accommodations (Firth & Hing, 1999; Carlsen et al., 1998; Buckley & Araujo,

1997). Purchasing policies, gardening practices, cleaning practices, environmental monitoring, local community interaction and environmental education of guests were included. The overall results of the quantitative survey found 97.0% of respondents purchased local goods and services. Other sustainable practices mostly employed are the use of biodegradable cleaning products, regular garden mulching, employing local residents, and non-chemical cleaning. Responses were lowest for involving guests in conservation and permaculture. Permaculture is a sustainable gardening practice; however the majority of specialist accommodation operators indicated limited time and natural impediments (i.e. pigs, bandicoots, white-tailed rats) for growing fruit and vegetables in this manner. These reasons would contribute to the prevalence of landscaping reflecting the natural environment in the results, a less time consuming practice due to minimal watering and attention required, especially when they are regularly mulched.

Further analysis suggests a higher uptake of 'other sustainable practices' (see 4.6.6) within the Daintree region ($p=0.012$; mean rank=63.2) and within the local jurisdictions of Atherton Shire ($p=0.006$, mean rank=65.4) and Douglas Shire ($p=0.006$, mean rank=60.8). There are many specialist accommodation operators who have replanted their properties with native bird and butterfly attracting flora species, and ceased using chemical sprays to encourage healthy populations of frogs and other iconic wildlife species. Cleaning practices are linked, with a high uptake of biodegradable, non-chemical cleaning products evident including the use of 'Enjo' cloths, citrus based products and vinegar. Comments were received however from some operators who have found no match for bleach and other chemical products in the battle of mould and mildew on walls, characteristic of the Wet Tropics region. Sustainable purchasing, gardening and cleaning practices have all been heavily advertised in television, radio and print media to the general public within the past decade and may therefore contribute to the higher uptake of these practices.

Local community interaction by the specialist accommodation operators is enabled in a variety of ways. Foremost is the purchasing of local goods and services from the small communities within the Atherton Tablelands, Daintree region and the Mission Beach

region. Local residents are employed by preference although most specialist accommodation operators undertake all of the duties themselves. Many operators are happy to support the local school and community groups through donations. Beeton (1998) indicates the above practices are characteristic of 'green' accommodation, particularly in rural areas.

Environmental education of guests and environmental monitoring is also implemented. That is, specialist accommodation operators are undertaking these sustainable practices for the purposes of guest enjoyment and by having a personal concern for their own piece of surrounding natural environment. Bed and breakfasts, cabins and cottages typically provide in each detached accommodation a list of bird species, flora species and wildlife sighted on the property with literature about iconic species and their protection. However, a list of bird species is useful to a seasoned birdwatcher but for the uninformed, lists accompanied by pictures would more likely encourage greater awareness and appreciation of the natural environment. Other initiatives observed are information sheets for identified floral species along bush walking tracks, the provision of extensive literature about the area and its characteristics provided in common reading areas and cabin style accommodation. Guests are also warned of the dangers of feeding native wildlife. In some specialist accommodation operations, environmental conservation initiatives are explained to the guest and have the dual purpose of making the guest aware of the importance of protecting the natural environment.

As discussed, specialist accommodation operators are implementing a range of environmental management practices for water, energy, waste, sustainable design and other sustainable practices. The successful implementation of some environmental management practices is dependent upon factors such as the style of the accommodation, cost, and efficiency. As pointed out by Moscardo et al. (1996, p. 50), "it is highly unlikely that any situation will arise in which one accommodation type is clearly better on all dimensions of ecological sustainability". Environmental monitoring of wildlife, birdlife and feral pests is undertaken by many operators due to a personal concern for the environment and personal

service standard. Environmental education and interpretation is provided to guests in the form of relevant literature of the area provided in guest accommodation and signs reminding guests of water and energy conservation practices. These techniques have an underlying purpose of making the guest aware of the importance of conservation for nearby protected areas.

6.3.7 The Implementation of Environmental Management Practices and Previous Research

Previous studies of environmental management techniques implemented within the specialist accommodation industry are limited. Most have examined these practices from the focus of the guest (Lee, 2002; Beaumont, 2001) or within large-scale hotels (Buckley & Araujo, 1997; Wei & Ruys, 1999; Curtis, 2002; Carter et al, 2004; Warnken et al, 2005). The majority of this research has focused on Australian establishments in urban environments. Comparative studies of environmental management practices have not been as extensive as the present study which investigated approximately 40 individual environmental management techniques, nor have they solely focused on the specialist accommodation sector. Carlsen et al (2001) provided insight into rural family business practices in Western Australia, although only limited environmental management practices were investigated. Firth and Hing (1999) shed some light on the adoption of environmental sustainability practices by backpacker hostels in Byron Bay, New South Wales. Although this study only looked at all six backpacker hostels in the region, a comprehensive list of 30 environmental management techniques was included in their survey.

Case studies of best practice environmental management techniques provided in Chapter 2 implemented by four Advanced Ecotourism certified accommodation establishments suggests the specialist accommodation establishments in this study are comparative in their ecological sustainability. Although all but one of these establishments is a large-scale eco-resort, it is a positive result to realise the specialist accommodation sector is not lacking, in consideration of the financial resources and staffing available to these larger establishments. Common environmental management techniques implemented by the

specialist accommodation sector and these eco-resorts are ceiling fans only, the use of natural ventilation and cooling, energy efficient light bulbs, bulk purchasing, composting of organic waste and the use of biodegradable cleaning products. It is the larger hotels, such as Couran Cove Resort on Stradbroke Island and Kingfisher Bay Resort on Fraser Island that have the advantage of employing more initial costly techniques such as gas power supplemented by wind turbine. Although, it must be realised that these larger establishments are accommodating a much larger number of guests and therefore more costly sustainable environmental management techniques will be inevitable. Education of the guests on environmental management and protection of the surrounding environment, particularly those neighbouring high-order protected areas like the WTWHA is minimal (38.6%) when interpreting the quantitative results of this study. However, it is often that many of these accommodation operators are indeed providing guest education materials in the form of books/ literature about the local environment for recreation in their accommodation. Many of the environmental management techniques implemented by the specialist accommodation sector would indeed meet the requirements for eco-certification, however the demand for this level of recognition is minimal amongst the sector.

6.4 Environmental Attitude Measurement

The second objective of this thesis was to assess the environmental attitudes of the specialist accommodation operators in North Queensland. The following question guided the objective:

- a) Are specialist accommodation operators located near protected areas pro-environmental?

Environmental attitudes were measured using the New Ecological Paradigm (NEP) as developed, revised and tested by Dunlap, Van Liere, Mertig and Jones (2000). The 15 NEP statements are worded positively or negatively to assess an individual's ecological worldview. A Likert scale of 1= strongly disagree to 5= strongly agree is used to measure agreement with the NEP statements. Odd-numbered statements have a biocentric viewpoint and the even-numbered statements are anthropocentrically worded. Therefore

agreement with the odd-numbered items and disagreement with the even-numbered items indicate pro-NEP responses (Dunlap et al., 2000). Three statements are each designed to tap one of five hypothesised facets of an ecological worldview. These are ‘the reality of limits to growth’ (statements 1, 6, 11); ‘anti-anthropocentrism’ (2, 7, 12); ‘the fragility of nature’s balance’ (3, 8, 13); ‘rejection of exemptionalism’ (4, 9, 14); and the ‘possibility of an ecocrisis’ (5, 10, 15). The even-numbered statements were reverse coded for analysis purposes first. Table 4.14 showed the 15-statement NEP with the percentage of respondents (n=90) who rated the statements on a Likert scale from strongly disagree to strongly agree. A normal distribution resulted.

Reliability analysis results suggest it is appropriate to treat the 15 NEP statements designed to measure endorsement of an ecological worldview as constituting a single “New Ecological Paradigm Scale”. The alpha of .87 in this study is stronger than others previously employing the New Ecological Paradigm (for example Dunlap et al., 2000, alpha of .83). Stern, et al. (1995) used only seven of the 15 NEP statements and attained an alpha of .78 from a sample of 199 residents of Virginia, U.S.A. Arcury, Johnson and Scollay (1986) used only six items of the earlier New Environmental Paradigm with 441 Kentucky residents and attained a scale alpha of .69. The reliability (Cordano, et al., 2003; Scott & Willits, 1994; Noe & Snow, 1990; Albrecht et al., 1982) and unidimensionality of the NEP scale (Grenstad, 1999) are supported by the results of this study.

The methods of analysis for the NEP in this study were a replication of the study by Dunlap et al. (2000) involving principal component factor analysis with varimax rotation. Three environmental attitude types appear to exist amongst the specialist accommodation operators (Table 4.15). These are labelled ‘co-exist with nature’, ‘anthropocentrics’ and ‘pro-environmentalists’. Only NEP statement 6 “the earth has plenty of natural resources if we just learn how to develop them” did not load heavily on any of the three factors (i.e. .23 to .28). Reliability analysis was performed on each of the NEP statements loading on each factor. Results of .78 (Factor 1), .69 (Factor 2) and .71 (Factor 3) support the strength of the NEP. The means surpass the value of 4=agree for the NEP statements ‘plants and

animals have as much right as humans to exist' (4.24), 'despite our special abilities humans are still subject to the laws of nature' (4.19) and 'the balance of nature is very delicate and easily upset' (4.16) indicating there is a general tendency for specialist accommodation respondents to endorse pro-ecological beliefs.

Interpretation of the first rotated factor (36.24% of variance) suggests this group of operators labelled 'co-exist with nature' are aware of the impact people's actions can have on the natural environment. There is a concern for the state of the environment and a realisation humans and nature need to co-exist for the benefit of future environmental sustainability. In an ecological worldview, these operators appear to be aware of limitations to what the natural environment can support and realise the impact tourism, population growth and overcrowding can have on the natural environment. This group indicate agreement with statements such as "we are approaching the limit of the number of people the Earth can support"; "the so-called 'ecological crisis' facing humankind has been greatly exaggerated"; "the Earth is like a spaceship with very limited room and resources" and "if things continue on their present course we will soon experience a major ecological catastrophe". These operators appear to hold a realist approach, mindful of the environmental impacts that can occur from increased tourism if sustainable management practices are not in place.

The second rotated factor group (8.89%) of specialist accommodation operators labelled 'anthropocentrics' appear to be the least pro-environmental displaying an ecological worldview that the natural environment is available for their benefit without recourse. Characteristic of anthropocentrism is the dominance of humans over nature, that is, nature is considered explicitly for human use and contains no intrinsic value (Barr, 2003). It appears these operators have the view environmental protection is unnecessary and at any rate, humans will be able to rectify any impacts caused by their own actions. This group loaded heavily on statements including "humans have the right to modify the natural environment to suit their needs"; "human ingenuity will ensure that we do not make the Earth unliveable"; "the balance of nature is strong enough to cope with the impacts of

modern industrial nations”; and “humans were meant to rule over the rest of nature”. It would appear these operators are the least likely to implement environmental management practices for the protection of the environment, rather adopting sustainable practices for the benefit of cost savings.

The third group (7.86% of variance) of specialist accommodation operators have been labelled ‘pro-environmentalists’. This group supported the NEP statements “when humans interfere with nature it often produces disastrous consequences”; “humans are severely abusing the environment”; “plants and animals have as much right as humans to exist”; and “despite our special abilities humans are still subject to the laws of nature”. These specialist accommodation operators realise the importance of conservation and environmental protection for future generations. These operators appear to realise there is a limit to the impacts the natural environment can sustain and therefore, the onus is on the specialist accommodation operator to implement sustainable environmental management practices to the best of their abilities.

Others have found four factors to exist within the NEP (Dunlap et al., 2000; Jones et al., 2000). Jones et al. (2000) used the 15-item NEP with a sample of 1,069 host community rural residents located near a National Park in Virginia, USA. Four attitude types were found to exist by Jones et al. These were labelled ‘limits of nature’, ‘humans can manage nature’, ‘humans over nature’ and ‘humans abuse and interfere with nature’. The ‘limits of nature’ attitude type includes the same statements with similar factor loadings as the present study labelled ‘co-exist with nature’. The second attitude type in the current study ‘anthropocentric’ are similar to that of the study by Jones et al. having three of the four statements the same. Finally, the third attitude type found to exist in this study, ‘co-exist with nature’ loads on the same statements found by Jones et al., that is, ‘humans over nature’ and ‘humans abuse and interfere with nature’ attitude types. Dunlap et al. (2000) did not label his four factors and the statements loaded quite differently to the present study and the study by Jones et al. (2000). These differing results may be explained by the different respondent samples. Similar to this study, the respondents in the study by Jones et

al. (2000) were all rural residents in close proximity to a National Park. The study by Dunlap, et al. however involved urban residents of Washington State and these residents may hold a different ecological worldview when located a further distance away from a natural protected area than those located within close proximity.

The above results from this study and compared with that of Dunlap et al. (2000) and Jones et al (2000) supports the original research question of this thesis; that is people located near protected areas are contributing to the management and protection of the environment. The overall pattern of endorsement of the NEP in this North Queensland study provides support for arguments that an ecological worldview is dominant amongst this specialist accommodation sector of the tourism industry. This study found that the specialist accommodation operators located near or neighbouring protected areas in North Queensland are indeed predominantly pro-environmental. The majority of the sample had a moderate to high ecological worldview (n=69) when summing of the respondent's NEP score was undertaken. In the present study, correlations of the NEP with demographic or ecological predictors (e.g. age, gender, education, membership or support with conservation/ environmental groups, environmental auditing) are generally non-existent or statistically weak. Grenstad (1999) generated similar results of correlations between 14 predictors (e.g. age, gender, residence) and the NEP scale in his sample of organised environmentalists and a general population sample in Norway.

6.5 Environmental Attitudes and Environmental Behaviour

The Framework of Environmental Behaviour (Barr, 2004) conceptualises environmental action around the intention-behaviour relationship (refer Figure 2.4). Previous research has indicated a link between the actual performance of an environmental behaviour is governed by the environmental attitudes or values held by an individual. Barr (2004) and others have shown that this is not a linear linkage as first postulated by Fishbein and Azjen (1975), rather there are situational and psychological factors which will impact upon the actual environmental behaviour in question.

Barr (2004) determined from a review of environmental literature that environmental values, situational variables and psychological variables influence the essential intention-behaviour relationship for the implementation of environmental actions. Situational variables include socio-demographic variables; knowledge of environmental problems and awareness of performing environmental behaviour; and an individual's involvement in other environmental actions (Barr, 2004; Hines et al., 1986-1987). The measurement of psychological variables is beyond the scope of this thesis; however the measurement of environmental attitudes does provide some insight into the environmental values or ecological worldview held by the specialist accommodation operators. Environmental values are an individual's personal orientations towards the environment and represent a general worldview of the natural environment (Barr, Ford & Gilg, 2003). The Framework of Environmental Behaviour has not been previously applied to the tourism industry, although it has been developed from an exploratory study of residents' attitudes and practices of waste and recycling behaviour.

In this study a number of internal and external factors have been found to contribute to the adoption and rejection of environmental management techniques by the specialist accommodation operators. The qualitative interviews with the 30 specialist accommodation operators provided insight into the barriers affecting the implementation of many environmental management techniques. Internal factors include knowledge of best

practice environmental management possessed by the owner-operator, cost, impact on lifestyle, the ability to implement a technique, and time available. External factors also became apparent during the data collection phase. Factors such as geographical location, height above sea level, climate and availability of municipal infrastructure appear to affect varying implementation levels of environmental management techniques. It appears from this study, climatic conditions and location will affect the use of alternative environmental management practices requiring solar or wind energy.

These internal and external factors are similar to the enablers and disablers identified by Gilg and Barr (2005) and contribute to the environmental behaviour-intention literature. The enablers and disablers identified are service availability, behavioural knowledge, behavioural experience, residential/ work environments, socio-demographics, policy knowledge, policy interventions/ instruments and global environmental knowledge. Figure 6.1 provides an extension of the Framework of Environmental Behaviour (Barr, 2003; Barr, 2004; Gilg & Barr, 2005) as conceptualised from the present study's results highlighting the internal and external situational factors appearing to contribute to the successful adoption of environmental management practices.

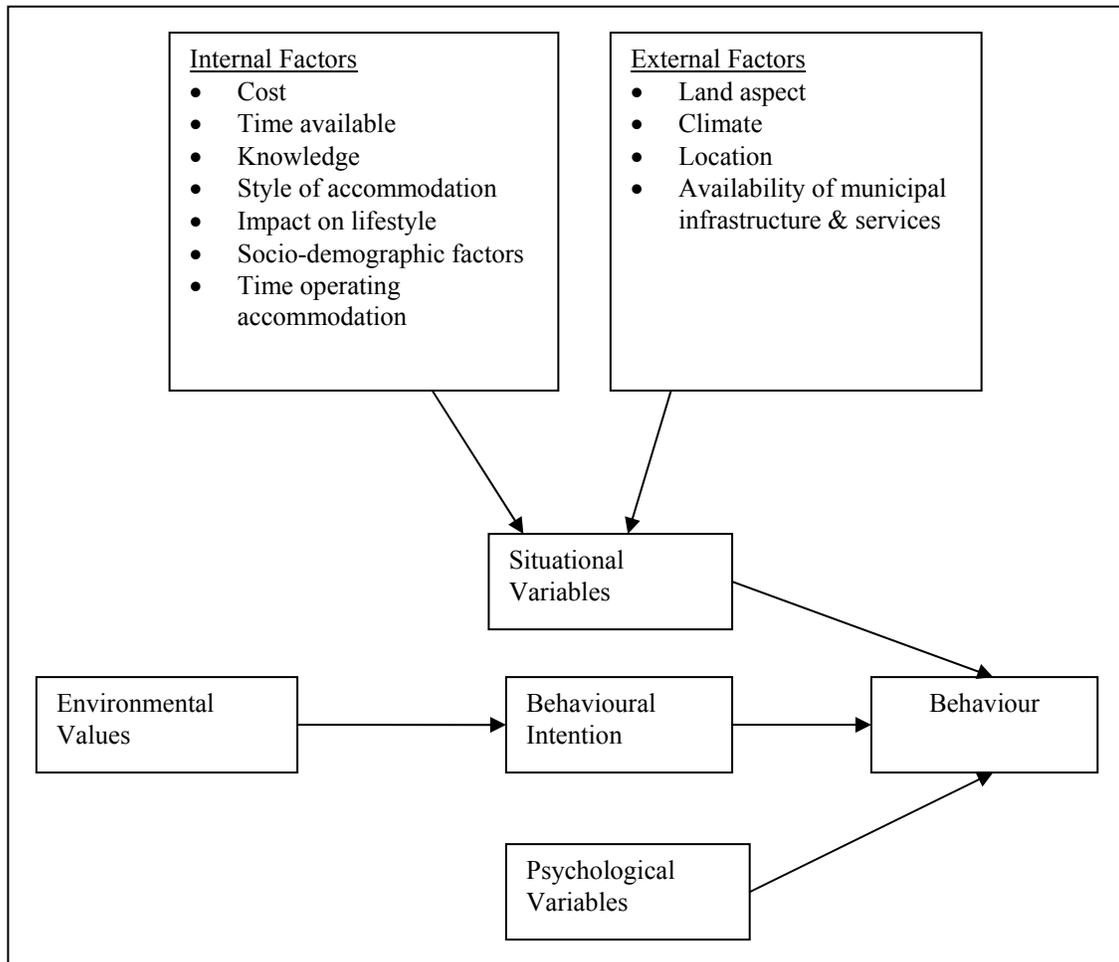


Figure 6.1: Extended Framework of Environmental Behaviour (adapted from Barr, 2003; Barr, 2004)

Supporting the results of the present study, the reasons for and against the adoption of environmental management techniques by the tourism sector have been previously discussed by others (Tzschentke et al. 2004; Schaper & Carlsen, 2004; Carter et al. 2004; Carlsen et al., 2001; Donovan & McElligott, 2000; Buckley, 2003; Goodall & Stabler, 1997). It is suggested small scale tourism businesses will adopt environmental management practices for the purpose of cost savings, when the environmental practice is easy to install, for compliance, community and customer pressure or out of a personal concern for the environment. Others (Barr, 2004; Buckley, 2003; Donovan & McElligott, 2000; Wei & Ruys, 1999; Stabler & Goodall, 1997) have suggested environmental management practices may not be implemented for one or a number of the following reasons. These include a lack of knowledge, time, the potential benefits being difficult to

identify, preference for increased income rather than protect the environment, maintenance of lifestyle, perceptions of reduced service quality, climatic conditions, geographical location and the availability and access to municipal infrastructure and services. Additionally, Eagly and Chaiken (1993, cited in Trumbo & O'Keefe, 2005) acknowledge the addition of past behaviour and also previous occupation may also indicate behaviour influenced by habit or learned predispositions.

Ideally, it would have been more insightful to be able to show a link between the specialist accommodation operators' environmental attitude and the implementation of specific environmental management practices. For example, one could reasonably hypothesise that a specialist accommodation operator who actively seeks out sustainable environmental management practices, particularly alternative practices or engages their property in voluntary land conservation agreements would be more likely to have a pro-environmental attitude. Due to the limited sample size though, statistical testing was unable to confirm or disconfirm this link.

Above all, what is evident from this study is that there are a number of factors contributing to the implementation of environmental management practices by the specialist accommodation operators. The geographic location, inherent climatic conditions and ecological characteristics; the availability of infrastructure to assist with various practices (for example, the provision of roadside recycling collection); and the required knowledge of availability, suitability and types of sustainable environmental management techniques are the main considerations. This knowledge factor is dependent upon the motivation and ability to research suitable techniques for ecological sustainability. Similarly, Whiley and Carter (2002) point out the adoption of environmental practice requires knowledge of the causes of environmental impacts and knowledge of the technologies and techniques to minimise environmental harm. Awareness of these internal and external factors is potentially a powerful piece of knowledge for regulatory agencies and government bodies to realistically encourage this sector of the tourism industry to be sustainable.

6.6 Environmental Certification

Environmental certification in this study is focused on the performance-based programs of Ecotourism Australia, Green Globe and AAA Tourism Green STARS. These three benchmarking organisations operate within the Australian tourism industry, only Green Globe has an international presence as well. The third objective of this study was to examine the uptake of environmental certification within the specialist accommodation sector and its impact on the implementation of environmental management techniques. The question which guided this objective is:

- a) Do specialist accommodation operators have environmental certification? Why/why not?

Outstanding from the results of this study is the lack of environmental certification held by the specialist accommodation sector in North Queensland. Only six of the 101 specialist accommodations in this study had a current environmental certification standard from Ecotourism Australia (n=4) or AAA Tourism Green STARS (n=2). Respondents indicated attaining environmental certification for the reasons of marketing an environmental product and for better environmental management. None of the respondents had achieved accreditation, benchmarking or certification standards with Green Globe. To date, Green Globe has scarcely penetrated the tourism industry in North America or Europe. Although reasonably successful in Australia, its presence in North Queensland is minimal in all sectors including the specialist accommodation sector.

Specialist accommodation operators not pursuing environmental certification held the perception that it is not necessary, nor is it considered beneficial for the business. Others indicated they did not know about certification, had no reason for not attaining certification or felt the time required to complete the application was difficult while conducting an owner-operated accommodation business. Information gained from the interviews further clarified the survey responses with many of the specialist accommodation operators stating it would not be a marketing advantage, suitable for the accommodation style or believed

they were already implementing to their knowledge and ability the best possible environmental management practices. Only one cottage operator indicated he had previously gained environmental certification with Ecotourism Australia for the purpose of personal satisfaction although he had now let this lapse and was not interested in renewing his certification. Many of the specialist accommodation operators have the perception that their guests are not interested in whether the business is environmentally certified. The results of the current study support submissions to the Australian Commonwealth Government's *Green Paper for Tourism* (2003, p. 34) regarding accreditation whereby it would seem there is a "lack of consumer awareness about the benefits of accreditation and that operators see no clear incentive to become accredited, especially when there is an annual cost and input of time required for the application process".

The adoption of numerous environmental management practices in the current study indicates an overwhelming response by specialist accommodation operators who have a personal concern for the environment and strengthens the argument that environmental certification may not be suitable for this style of tourism accommodation. This point is also discussed by Issaverdis (2001) implying the cost of certification may be perceived to outweigh the marketing or environmental benefits. The Department of Industry, Tourism and Resources (2003, p. 50) also identifies that many small businesses are "reluctant or unable to commit the time or resources" to implementing a certification program even if they know it will improve their environmental standards. However, Ecotourism Australia has recently, in 2006, put their certification application online allowing operators the opportunity to complete the application when time permits, which may encourage an uptake of environmental certification in the near future.

This study found that a personal concern for the environment is evidenced by more than 50.0% of operators stating the reason for voluntarily adopting an environmental code-of-conduct is for the purpose of better environmental management. Specialist accommodation operators mainly followed environmental legislation or guidelines from local councils, QPWS and WTMA. Therefore, it is reasonable to assume that small accommodation

operators in natural areas would be willing to adopt or be educated with a voluntary code-of-conduct with flexible guidelines to ensure future ecological sustainability of the surrounding natural environment and protected areas.

6.7 Environmental Regulation for the Specialist Accommodation Sector

The fourth objective was to review the environmental policies currently recommended by protected area management agencies, local councils, and tourism and accommodation associations for the specialist accommodation sector located near protected areas in Far North Queensland. This final objective was guided by the questions:

- d) How do environmental management agencies of protected areas interact with the specialist accommodation sector located near protected areas?
- e) Are local councils supportive of environmental management techniques and do they provide assistance with environmental guidance for the specialist accommodation sector in their shire?
- f) Do tourism and accommodation associations encourage best practice environmental management techniques to specialist accommodation operations?

6.7.1 Environmental Management Agencies

The environmental protection agencies contacted were the Environmental Protection Agency (EPA) and the Wet Tropics Management Authority (WTMA). A one hour semi-structured personal interview was conducted with the senior planning officer of WTMA. Only a telephone interview was possible with the recreational planning officer from EPA. The reason for this is discussed in the limitations (refer 3.4.3). The WTMA appear to be the most aware of the specialist accommodation sector near protected areas in North Queensland. A cooperative approach has been previously evidenced by the neighbouring landholders group facilitated by WTMA in past years. As stated by Clarke (personal communication, WTMA, 2005) specialist accommodation operations are a “preferable land use rather than agriculture; rehabilitation of the rainforest occurs by specialist

accommodation operators; and thirdly they are presenting the World Heritage values to the visitor”. There is the “strength of bed and breakfasts for local town economies, [especially] with the wildlife attraction and rainforest as well”. In the present study however, less than 20.0% of respondents indicated paying attention to environmental guidelines provided by QPWS, EPA and WTMA.

Transmitting knowledge of the Wet Tropics WHA and other protected areas to the specialist accommodation sector located near protected areas will require attention in the near future. Visitation to protected areas throughout Australia are estimated at 60 million visitors per year (Worboys et al, 2001) with national parks and World Heritage areas an important nature-based destination for national and international tourists seeking recreational opportunities. From the estimated 12.2 million nature-based visitors in Australia 2002-2004, Tourism Australia (2005) also indicates bushwalking/ rainforest walks and national parks/ state parks are the most important nature-based activities for domestic overnight, domestic day and international visitors. The specialist accommodation sector would appear to be aware of this tourism demand. Consequently there has been growth in the sector over the past decade and it is reasonable to assume this trend will continue. Many of these specialist accommodations are providing nature-based walks on their properties with identical faunal and floral characteristics. Although the accommodation operator may like to provide quality interpretative material of their area, not all operators will actively acquire this information. This role should be supported by the environmental agencies to ensure protection and conservation of the surrounding natural environment.

6.7.2 Local Shire Councils

Comparative studies of local council support for environmental practices for tourism accommodations are non-existent and therefore this study has provided an exploration of this regulatory body’s interaction with the tourism accommodation industry. Almost half of the specialist accommodations respondents indicated attention to council regulations although only six of these operators paid attention to the local council by-laws. The

specialist accommodation operators who did pay attention to voluntary environmental codes of conduct indicated a personal concern for the environment, for better environmental management and to a lesser degree to comply with environmental legislation. The seven Shires included in the study are Atherton, Mareeba, Eacham and Herberton on the Atherton Tablelands, Douglas Shire in the Daintree region, and both Johnstone and Cardwell Shires in the Mission Beach region. These local Council Shires are all covering regional and predominantly rural areas peripheral to the tourism hub of Cairns. Characteristically, the Shires have a relatively small population base, yet large land areas.

Although all of the local Council Shires were supportive of the specialist accommodation sector within their jurisdiction, only the Johnstone Shire Council in the Mission Beach region had a *Landholders Handbook* advising of best practices for building siting and design, waste, water and energy practices and information on wildlife interactions and feral pest management. It is unknown how or if this *Landholders Book* was distributed to the specialist accommodation operations in the Shire, although it was made available for collection from the Shire Council Chambers and the WTMA office. Most of the local councils did want to provide environmental best practice advice but this is often limited by staff and financial resources, though they will provide best practice information if requested by the specialist accommodation operators or direct them to appropriate industry businesses or government agencies. The need to protect natural biodiversity for future sustainability is recognised in corporate plans by Atherton and Douglas Shires, and desired environmental outcomes by the Shires of Mareeba, Eacham, Herberton, Cardwell and Johnstone Shires.

Shire council planning schemes appear to be the best mechanism for the conveyance of environmental best practice to the tourism industry although this will only impact upon new development applications and material change of use applications. There does not appear to be a mechanism apart from purposely directed education that will effect already established specialist accommodation operations within the Shire. One town planner pointed out provision of information about environmental management practices for the tourism industry within the Shire will only occur if it is triggered by state government

proposals. Others have the opinion it is not the council's desire or best interest to heavily regulate or dictate environmental best practice to the specialist accommodation operations in their Shire. This is a sector they would rather encourage for alternative economic development based on nature tourism.

6.7.3 Tourism and Accommodation Associations

Only 6.0% of the specialist accommodation operators surveyed indicated not being a member of a tourism or accommodation association in this study. Therefore 94.0% of the respondents were members of an association and interestingly, these were predominantly with local and regional tourism and accommodation associations. Membership was highest with the Bed & Breakfast & Farmstay Association of Far North Queensland (BNBNFNQ, 30.7%), Tropical Tablelands Tourism (26.7%) and Mission Beach Tourism (18.8%). It would appear membership with these associations has the benefit of marketing within a collective manner. A one-page survey returned from 14 tourism and accommodation associations in this study revealed only one association was in existence for the purpose of environmental protection, only five associations had an environmental policy, two had an environmental code-of-conduct and one was in the process of drafting an environmental code of conduct for its members. Only three associations recommended environmental best practices to their members and only two associations offered environmental awards to encourage environmental best practice.

Stabler and Goodall (1997) suggest small tourism firms who are not members of industry or trade associations may remain unaware of current best practice environmental management. Others have pointed out knowledge of environmental management practices will contribute to the implementation of these techniques; however a lack of knowledge will impede the improvement of environmental practices (Vernon et al., 2003). The provision of this information by an association will underpin the uptake of environmental management practices. "While there is clear acknowledgement of the need to take the environment into account in the planning and development stages of tourism, much less guidance is available to existing tourism businesses seeking practical advice on how to

make best practice environmental management operational (Goodall & Stabler, 1997, p. 281). This argument is supported by the present study. Environmental guidance is not available to existing specialist accommodation from local Shire Councils unless requested, nor is it the purpose of tourism and accommodation associations to provide this type of information.

6.8 Summary

This discussion of the study findings has provided further support to the proposition that specialist accommodation operations are more conscious of, and compatible with, the principles of ecologically sustainable tourism than traditional accommodation (Morrison et al., 1996). From the 101 surveys and the 30 interviews with the specialist accommodation operators, a personal concern for the environment was apparent and widespread. The majority of these specialist accommodation operators are aware of the importance of their environmental actions and the consequences of improper environmental management. However, there are internal and external factors impeding the implementation of some environmental management practices. These are knowledge of best practice environmental management practices, cost, impact on lifestyle, the ability to implement a technique, time available, geographical location, height above sea level, climate, location and availability of municipal infrastructure. The barriers found to exist in the implementation of environmental management practices by the specialist accommodation operators extends the enablers and disablers put forward in the Framework of Environmental Behaviour by Barr (2003, 2004) and Gilg and Barr (2005).

Analysis of the 15-statement New Ecological Paradigm (Dunlap et al, 2000) used to measure the environmental attitudes of the specialist accommodation operators within the study resulted in three attitude types existing amongst the specialist accommodation operators – those who co-exist with nature, anthropocentrics and pro-environmentalists. In an ecological worldview, this first rotated factor group, 'co-exist with nature' (36.2% of variance) seem to be aware of limitations to what the natural environment can support and

realise the impact tourism, population growth and overcrowding can have on the natural environment. The 'anthropocentric' group (8.8% of variance) appear to hold the view environmental protection is unnecessary and where there are environmental impacts, humans will be able to rectify any damage caused by their own actions. The third rotated factor group, 'pro-environmentalists' (7.8% of variance) realise there is a limit to the impacts the natural environment can sustain and therefore, the importance of conservation and environmental protection for future generations.

Although only a small number of operators have environmental certification, the study found the majority of the specialist accommodation operators are willing to accept voluntary guidelines for environmental best practice. Knowledge transfer is vital for the future ecological sustainability of tourism operations located near or neighbouring protected areas in North Queensland. Command-and-control mechanisms (Carter, et al., 2004) are not suitable for this sector of the tourism accommodation industry. From the interviews held with the local Shire Council town planners, the general consensus appears to be that these regulatory bodies are reluctant to implement laws or regulations that direct specialist accommodation operators how to be environmentally sustainable. However, as discussed earlier, the specialist accommodation operators appear to be satisfied with guidelines delivered by the local Shire Councils. Guidelines distributed through the QPWS and WTMA may also increase the adoption of environmental management techniques. The Wet Tropics Management Authority appears to have the highest level of interaction with the specialist accommodation sector near protected areas in North Queensland.

The size of the specialist accommodation sector is increasing within the Australian tourism industry with many operations establishing near protected areas in peripheral destinations. Statistics regarding the number of these operations are not readily available however listings with bed and breakfast and farm stay associations indicate an increase within the past decade. This style of accommodation appears to be principally targeting the short break holiday market, particularly marketing to residents within less than a day's driving distance. Characteristics of the specialist accommodation styles are similar to those of the

alternative tourism era as explained by Jafari's (1989) 'adaptancy' platform and his 'knowledge-based' fourth platform involving objective, science-based methods to obtain an understanding of the tourism sector. More recently, the accommodation sector can be explained within the realms of soft ecotourism as opposed to mass tourism (Weaver, 2001). The adoption of sustainable environmental management practices by the owner-operators of these accommodation establishments is often undertaken based on factors such as knowledge of the area and climate, an understanding of the market demand and the cost to implement sustainable practices. Purposely built accommodations have the ability to incorporate sustainable practices into the design of the property, whereas those already established (for example licensed public hotels) will have other factors (for example, heritage legislation, aesthetic appearance and practicality) to consider in the incorporation of some environmental management practices.

This study has shown these specialist accommodation owner-operators in North Queensland are contributing to the protection and management of protected areas with ecological significance through a personal concern for the environment, the implementation of sustainable environmental management practices and principles, and the provision of guest education initiatives. They are implementing environmental management practices to the best of their knowledge and abilities.

CHAPTER 7: THESIS IMPLICATIONS & CONCLUSION

Structure of the Chapter

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7.2 Key Findings

7.3 Contributions to the Existing Knowledge

7.4 Specialist Accommodation Operations and Ecological Sustainability

7.5 Implications of this Research

7.6 Limitations of this Study

7.7 Future Research

7.8 Conclusion

7.1 Introduction

The purpose of this research was to explore the implementation of environmental management practices and the environmental attitudes held by specialist accommodation operators near the Wet Tropics World Heritage Area (WTWHA) in North Queensland, Australia. While investigating the ecological sustainability of the specialist accommodation sector, barriers (both internal and external) to a sustainable tourism operation were identified. An understanding of the existing interaction between the specialist accommodation operators and environmental agencies, tourism associations and local government planning was also developed. The research question which guided this study was “How do specialist accommodation operators located near protected areas manage and protect the environment?”

A multi-methodological approach was taken to gain insight into the environmental practices of this small but growing specialist accommodation sector. Evidence of the growth of these styles of specialist accommodation, particularly those located within close proximity of protected areas and significant nature-based attractions, is evident in accommodation listings and the travel media since the 1990s.

Specialist accommodation has also been referred to as boutique, small or micro-business accommodation (McIntosh & Siggs, 2005; Vernon, Essex, Pinder & Curry, 2003). This style of accommodation has a small guest capacity, is owner-operated, provides a specialist opportunity or advantage to guests through location, features or services, and offers special activities to its guests (Morrison, et al. 1996). The literature has shown specialist accommodation is characteristic of the concept of alternative tourism and more recently can be recognised within the nature-based tourism sector, rural tourism sector and the ecotourism sector.

7.2 Key Findings

Specialist accommodation operations are a rapidly expanding part of the nature-based tourism sector within Australia. These styles of accommodation are contributing to the expansion of tourism in regional and rural areas and with growing demand, are providing opportunities for tourists to experience areas of high ecological importance. There is a limited understanding of the owner-operators in the specialist accommodation sector and their contribution to ecological sustainability of nearby protected areas. The key findings from this study are listed below.

7.2.1 Specialist Accommodation Operations

Specialist accommodation not attached to the owner-operator's residence is prevalent. That is, self-contained individual cabins and cottages are a popular style of nature-based accommodation provided near protected areas in North Queensland. Rest and relaxation, bird watching, native wildlife viewing, bush walking/ walking tracks and swimming are the most common activities provided for guests. The average number of guest rooms at the specialist accommodation operations is 5.8.

7.2.2 Specialist Accommodation Operators

These operations are owned and operated by husband and wife teams with some having family or business partners assisting in the daily management duties where needed. The operators are predominantly a mature population of operators aged over 40 years with most being in the 50 – 59 year age group. Their reason for moving into the specialist accommodation operations market is for a change of lifestyle and personal reasons. More than half of the operators have trade or tertiary education qualifications. The majority of specialist accommodation operators were previously employed in the trades sector, hospitality/ tourism sector, small business or the professional sector. The present owners have operated their specialist accommodation for eight years or less, averaging 4.5 years. More than 40% of the accommodation establishments had been in existence for 9 years or more.

7.2.3 Environmental Management Practices

Environmental management practices in the present study included water management techniques, energy management, waste management practices, sustainable design and other sustainable practices. Basic and easy to implement environmental management practices are generally achievable by the majority of specialist accommodation operators. Widespread practices include dual flush toilets, bulk purchasing practices, natural ventilation and natural light building design principles, landscaping reflecting the surrounding environment, the purchase of local goods and services, use of biodegradable cleaning products, and regular mulching of gardens. Alternative environmental management practices utilising solar, wind or water are not readily adopted by the majority of the specialist accommodation operators for reasons including cost, suitability and location.

7.2.4 Environmental Certification and Codes of Conduct

Environmental certification by an industry organisation such as Ecotourism Australia, Green Globe or AAA Tourism Green STARS provides assurance a tourism product conforms to a benchmarked standard. Almost all of the specialist accommodation operators in this study do not have environmental certification. Specialist accommodation operators hold the perception that environmental certification is neither necessary nor beneficial to their business. Others did not know about certification or gave no reason for not pursuing environmental certification. For the six operators who had gained certification, this was undertaken for the marketing of their tourism accommodation as environmental or for the purpose of better environmental management.

Voluntary codes of conduct however are more readily adopted by the specialist accommodation sector for the reasons of personal concern for the environment, better environmental management and to abide by environmental legislation. Voluntary codes of conduct provide advice for sustainable environmental management practices which can be implemented where it is perceived suitable and necessary by the specialist accommodation operator.

Codes of practice are mainly provided by caravan park associations, to member caravan parks, for example the *Top Tourist Parks Policy, Procedures and Emergency Management Manual*, and nature-based tourism associations such as Wildlife Tourism Australia. These codes are adopted by operators who have a personal concern for native wildlife and the protection of habitats on their property.

7.2.5 Environmental Attitudes of Specialist Accommodation Operators

The environmental attitudes of the specialist accommodation operators were measured using the New Ecological Paradigm (NEP). The NEP developed and tested by Dunlap et al. (2000) has previously been limited to studies of mainly urban residents in various locations particularly in the United States. Previous use of the 15-statement NEP within the

Australian tourism industry to measure people's attitude towards the environment is non-existent. The results of this study found although there is generally an overriding concern for the environment, three attitude types exist amongst the specialist accommodation operators. These three groups were labelled as those who 'co-exist with nature', 'anthropocentrics' and 'pro-environmentalists'. The 'co-exist with nature' group (36.2% of the variance) appear to hold a concern for the state of the environment and realise humans and nature need to co-exist for future environmental sustainability. The 'anthropocentrics' group (8.8% of the variance) hold the least concern for the future preservation for the environment holding an attitude that the natural environment is available for their use without recourse. The third group of operators, 'pro-environmentalists' (7.8% of the variance) realise there are limits to the impacts the natural environment can sustain and have the view that it is their duty to contribute to the future conservation and protection of the natural environment.

Ideally, the identification of links between the environmental attitude types and the implementation of environmental management practices by specialist accommodation operators would have been ideal in hindsight, however this was not possible due to a small sample size which yielded statistically weak and insignificant results

7.2.6 Interaction with Regulatory Bodies

Environmental management agencies (WTMA and EPA), local shire council town planners and tourism and accommodation associations were included in the study to understand the interaction between these regulatory bodies and the specialist accommodation sector in North Queensland. There is recognition by the Shire councils of the need to protect natural biodiversity for future sustainability. However, local shire council by-laws do not carry environmental best practice requirements, and although Shire council planning schemes have the opportunity to provide environmental restrictions and regulations, these are only directed at new development and material change of use applications whereby an application triggers an impact assessment. Environmental codes of conduct for tourism accommodations are not provided by any of the local Shire councils in this study and there

is a general consensus from the councils that these would discourage landowners to embrace tourism if this was in place.

The WTMA recognise a cooperative approach between private landowners and the agency is imperative to the future sustainability of the World Heritage listed Wet Tropics. It appears the landholders/ neighbours liaison group, understanding the value of the Wet Tropics WHA to the community, and the encouragement of voluntary land agreements are key mechanisms to sustaining the future conservation and protection of the Wet Tropics.

Tourism and accommodation associations are primarily in existence for marketing purposes. More than 90% of the specialist accommodation operations in the present study are members of an accommodation or tourism association. Membership with local associations is prominent. These associations are in a prime position to disseminate environmental management practice information in a non-regulatory manner to their members. Presently only a small number of associations have environmental policies or codes of conduct for their members in place.

7.2.7 Specialist Accommodation and Ecological Sustainability

The main aim of this study was to understand the implementation of environmental management practices and the attitude towards the environment held by the specialist accommodation operators and their resultant contribution to ecological sustainability of protected areas. The Framework of Environmental Behaviour (Barr, 2004) conceptualises environmental action around the intention-behaviour relationship. Environmental values, situational variables and psychological variables influence the essential intention-behaviour relationship believed to predict an individual's intention to act environmentally.

The qualitative data methods (i.e. semi-structured interviews) employed in this study identified barriers to the uptake of various environmental management practices by many of the specialist accommodation operators. These barriers can be identified as situational

variables (Barr, 2004) that are both external and internal factors affecting the specialist accommodation operator's ability to be ecologically sustainable. Internal factors include cost, knowledge of sustainable practices, style of accommodation and operation, and time. External factors include cloud cover, rainforest cover, availability of municipal infrastructure and services (for example, roadside recycling collection and distance to refuse transfer stations).

7.3 Contributions to Existing Knowledge

This doctoral thesis has contributed new knowledge about the environmental attitudes and environmental practices of specialist accommodation operators located near protected areas. The study has achieved this outcome in three ways. The Australian Government's *Tourism White Paper* (2003) identifies key information gaps in small accommodation and caravan accommodation. The literature itself also recognised a lack of knowledge about this growing style of accommodation.

Firstly, the study has provided an understanding of specialist accommodation and the type of people operating these styles of accommodation located near protected areas. In this case, the study is focused on the specialist accommodation sector located near one of Australia's most significant protected rainforest areas, the Wet Tropics World Heritage Area. Prior to this study, knowledge of the specialist accommodation sector or boutique accommodation sector in Queensland, Australia or even globally was virtually unknown. The study has provided a profile of the specialist accommodation operations consistent with one other notable study of family-based tourism businesses in rural Australia by Getz and Carlson (2000).

Secondly, an understanding of the future ecological sustainability of the specialist accommodation sector through an exploration of the implementation of environmental management practices has been provided. This new knowledge from surveys and

interviews provided insight into the internal and external barriers affecting an accommodation operator's ability to implement environmental management practices for future ecological sustainability.

Thirdly, the study has successfully used a well tested attitude measurement instrument, the New Ecological Paradigm to gain an understanding of the attitudes towards the environment held by tourism accommodation operators located within close proximity to protected areas in Queensland. The 15-statement NEP has not previously been used in its entirety within the Australian tourism industry and in the present study was able to identify three attitude types amongst the specialist accommodation operators: co-exist with nature, anthropocentric and pro-environmentalists. Overall though, there is a high level of personal concern for the environment held by the specialist accommodation operators, as identified by the NEP and the adoption of environmental management techniques.

7.4 Implications of this Research

There are a number of implications of this doctoral study which will aid in the future ecological sustainability of the specialist accommodation sector located near protected areas. Evident from the present study is that specialist accommodation operators are implementing environmental management practices to the best of their ability and knowledge. As discussed in section 7.3, there are situational factors which will affect the implementation of environmental management practices and consequently the ecological sustainability of the specialist accommodation operations located near protected areas.

In light of the results of the implementation of environmental management practices in this study, I now question the term environmental 'best' practice. What is best practice for some may not be best practice for others in consideration of situational factors. Rather, it is sustainable environmental management techniques that are implemented dependent on both internal and external factors affecting the owner-operators of these establishments. The

development of a flow chart allowing the owner-operator to work through a series of questions related to their property, operation and personal abilities to identify site-specific sustainable environmental management technique options has the potential to assist small accommodation owner-operators in their ecological sustainability. The ability of specialist accommodation operators to financially resource many sustainable environmental management techniques would need to be considered as an internal factor. However, the incentive of rebates and tax relief may have the ability to lessen some of the costs involved.

A preliminary example is provided in Figure 7.1 outlining sustainable options for water use. Beginning with the location of the property and connection to town water, suitable water conservation techniques could be incorporated into the flowchart. Following on with questions about the natural water features available on a property, climatic conditions and distances to municipal facilities for example, could further exemplify suitable water management practices. Each step of questioning would provide suitable options with the objective being to identify appropriate site-specific environmental management practices for future ecological sustainability. A diagrammatic flowchart such as this could identify site-specific environmental management practices for energy, waste and other sustainable practices.

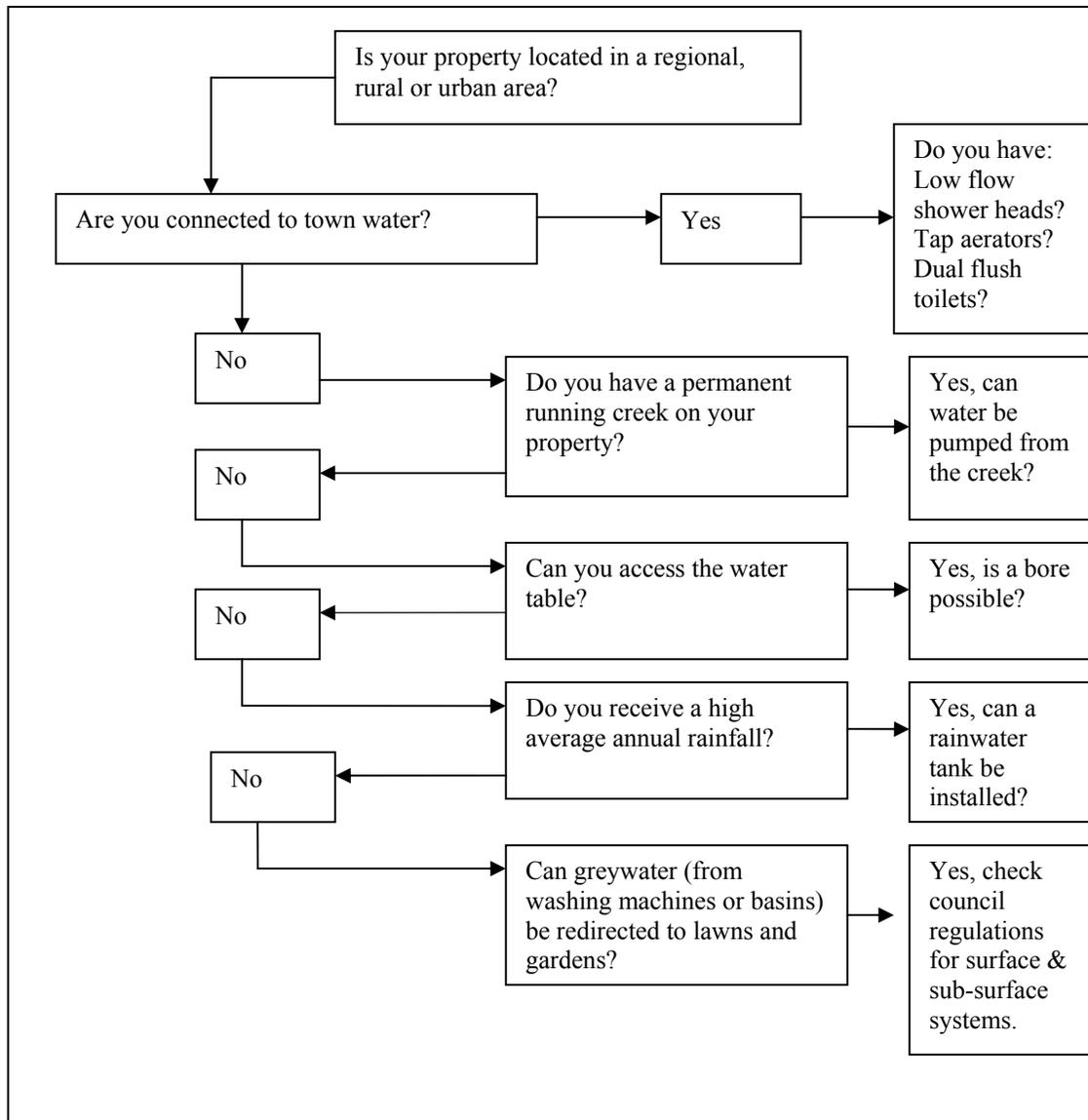


Figure 7.1: Example of Flow Chart for Suitability of Water Management Techniques

The results of the present study indicate 45% of the specialist accommodation operators pay attention to council regulations. Although the local Shire councils are reluctant to dictate mandatory environmental management practices to the specialist accommodation sector, the distribution of a landholder's handbook on environmental practices similar to the *Johnstone Shire Landholders Handbook* produced by the Wet Tropics Management Authority in conjunction with the Johnstone Shire council would be beneficial to all stakeholders involved. As stated by Pigram (2000), and supporting this study, an agreement on environmental codes of practice, encouragement of environmental audits, and

education and awareness will assist the public sector to achieve a balance between regulation and self-regulation for sustainable tourism development for the specialist accommodation sector. Partnerships between the tourism industry and government agencies have the ability to strengthen and progress the future ecological sustainability of an area.

Although the majority of tourism and accommodation associations have a marketing purpose, these organisations are also in a position to disseminate information on sustainable environmental management practices in an effective yet unobtrusive manner to their members. Sustainable environmental management information or practices being used by other local association members in a newsletter format may initiate an interest in possible environmental management practices for another. The provision of local information would be the most effective. “It would seem highly unlikely that information campaigns aimed at highlighting global or even national concerns will have a significant impact on behaviour, given the embedded nature of local environmental discourse” (Hajer, 1995, cited in Barr, 2003, p. 228). For example, global warming is more than likely hard to conceptualise for a person who is living on the Atherton Tablelands surrounded by World Heritage rainforest with no evident pollution. However, knowledge of feral pigs rampaging through this same rainforest and causing destruction is more of a concern to the specialist accommodation operator neighbouring the World Heritage listed rainforest. This further supports the results indicating the specialist accommodation operators do support local environmental conservation groups and are members of local tourism and accommodation associations rather than national organisations.

The encouragement of voluntary conservation agreements particularly with those properties neighbouring protected areas or retaining habitat as wildlife corridors can not be underestimated. Voluntary conservation agreements have the ability to highlight the ecological importance of the land. Increased incentives in the form of property rates reductions and other financial incentives or marketing benefits would more than likely be the most attractive to specialist accommodation operations. This point was made by Carter

et al. (2004) in their review of reasons to voluntarily adopt environmental best practice techniques. Motives will be driven by either economic reasons or by an individual's personal ethics.

The discovery of approximately 10% of the interviewed specialist accommodation operators were intending on leaving the sector through the sale of their business has implications for the future ecological sustainability of this sector. Although this study has examined the current specialist accommodation operations in North Queensland near the WTWHA, there will be new accommodations appearing and new operators. The provision of information on sustainable practices and environmental certification should be undertaken on a continuous basis by tourism associations, government agencies and local Shire councils to inform the next generation of specialist accommodation operators.

Finally, an information liaison officer for the specialist accommodation sector from the Wet Tropics Management Authority or State government who could visit these owner-operators at least once a year may be a valuable method of ensuring and encouraging future ecological sustainability of the specialist accommodation sector near protected areas. Being able to provide information or at least have the ability to direct operators to appropriate sources or people who have the knowledge and ability to assist would be beneficial to the future ecological sustainability of this tourism sector and the future management of protected areas.

7.5 Research Limitations

There were a number of limitations in this research which should be brought to the attention of the reader. Although the method of telephoning specialist accommodation operators first to ask if they would participate in the study enabled a high response rate, it is possible only those accommodation owners who believed they were environmentally sustainable agreed to participate in the research. Due to the nature of the study, other

measures of environmental concern or behaviour (such as, an in-depth examination of intentions to behave environmentally) could have been included in the survey to further support the results of the implementation of environmental management practices. However, the NEP was adopted as a well-tested instrument measuring environmental attitudes.

The sample size of specialist accommodation operations (n=101) was limited by the actual size of the sector in this North Queensland study (n=180, 61.6% response rate). Only one specialist accommodation operation in the Cook Shire participated in the study but was omitted from the analysis and from interviews for the reasons of distance and cost. The Cook Shire is now embracing tourism with the recent completion of the sealed development road into Cooktown from Cairns. Obviously this study is only concentrated on regional or peripheral areas of the popular nature-based tourism destination of Cairns. To examine the sector in other locations intra-state, interstate or even internationally would add comparative depth and understanding of this niche accommodation industry.

With permission from the specialist accommodation owner-operators, photographs of the various accommodation styles and environmental management practices in place were taken at each of the 30 specialist accommodation operation interviews. These photographs have not been analysed as it is beyond the scope of the present study. However, the photographs were used to visually remind the researcher of accommodation styles and environmental management practices adopted at the specialist accommodation operations.

An in-depth semi-structured interview was not conducted with the Environmental Protection Agency. Only a brief telephone interview was achievable. In hindsight, further persistence with management staff of the Environmental Protection Agency for an interview may have proved beneficial, although the initial conversation indicated it was not the role of the EPA to interact with the specialist accommodation sector normally.

7.6 Future Research

This research has provided a valuable insight into the environmental attitudes of the specialist accommodation sector located near protected areas and contributed to an understanding of how these operators help to manage and protect the natural area their business is based upon. The study has focused on specialist accommodation operations located within 50 kilometres of the Wet Tropics WHA in the Atherton Tablelands, Daintree and Mission Beach areas of North Queensland.

There is wide scope for more applied research about the specialist accommodation sector and their ecological sustainability. Similar studies conducted in other nature-based tourism areas where specialist accommodations are located within close proximity to or neighbouring protected areas would be beneficial for identifying environmental practices and barriers to achieving future ecological sustainability. Further application of the Framework of Environmental Behaviour (Barr, 2003; 2004) and the New Ecological Paradigm (Dunlap, et al., 2000) to these other nature-based tourist settings, areas or attractions has the opportunity to further understand the situational and psychological factors affecting the environmental intention-behaviour nexus. The key objective should be to understand and develop strategies to assist these styles of accommodation operation to be ecologically and socially sustainable. A secondary objective should be to nurture a custodian role in specialist accommodation operators for nearby protected areas. Comparable studies of environmental attitudes and environmental practices of specialist accommodation operators in other nature-based destinations may also reveal cultural differences impeding ecological sustainability. For example, studies conducted in Asia or even New Zealand may reveal different environmental attitudes to those found in the current study.

There is merit in further investigating the role undertaken by Shire councils, tourism associations and government agencies in promoting environmental best practice measures to specialist accommodation operations. These regulatory bodies themselves are often

constrained by financial and expert resources. Mechanisms for the encouragement and reward of voluntary codes of practice, the implementation of environmental management practices and voluntary conservation agreements by the tourism accommodation sector would encourage future sustainable growth of this economic industry. Tourism and accommodation associations in their collective marketing role have the ability to assist the specialist accommodation sector by disseminating environmental management information, by understanding the visitor markets attracted to specialist accommodation establishments, and encouraging environmental management practices through rewards.

Further understanding of these minimally regulated small accommodation styles could be enhanced by the use of a geographic information system (GIS) to plot these accommodation styles located around protected areas. This spatial analysis method would enable the protected area management agencies and local government to visually appreciate the clusters of specialist accommodation around nature-based sites of significance. In future, research of this nature may prove useful in determining Shire council town planning approvals for new developments in specialist accommodation and the regional tourism industry.

Finally, comparing the relative advantages and disadvantages of small and large-scale accommodation establishments adopting environmental management policies and practices would contribute to a better understanding of the support needed to manage these small accommodation enterprises both nationally and across countries in a sustainable manner. There is anecdotal evidence of the growth of this sector as opposed to the mainstream mass tourism styles of accommodation.

7.7 Conclusion

The specialist accommodation sector within Australia is a growing niche sector. There is evidence of increased interest in nature-based tourism and the visitor's desire to stay in

places which are not standard mass accommodation styles. Nature-based tourists have a desire to learn about the environment they are visiting. There are many domestic tourists who are interested in short breaks at specialist accommodation allowing them to get back to nature, rest and relax, and escape modern day technologies. The focus of this study was the adoption of environmental management techniques by specialist accommodation owner-operators near protected areas in North Queensland and the environmental attitudes held by these people in consideration of their proximity to protected areas.

Key findings of the study indicate self-contained individual cabins and cottages are popular nature-based styles of accommodation with the average number of rooms (cabins/ cottages) being 5.8. The owner-operators are husband and wife teams aged over 40 years entering the sector for a change of lifestyle or personal reasons. Bulk purchasing practices, purchasing local goods and services, the use of biodegradable cleaning products, landscaping reflecting the surrounding environment, regular mulching of gardens and dual flush toilets are readily adopted by specialist accommodation operators. The majority of the specialist accommodation operations take advantage of natural ventilation and natural light building design principles in North Queensland. Environmental certification is not readily accepted, although voluntary codes of conduct and a personal concern for the environment would appear to often govern the ecological sustainability of the accommodation establishment.

Specialist accommodation operators located near protected areas have a responsibility to be ecologically sustainable and to manage and protect the surrounding natural environment on which their business depends. Similarly, regulatory agencies should take responsibility for the encouragement of ecologically sustainable practices by specialist accommodation operations within their jurisdiction. This present study has provided an initial understanding of the environmental attitudes and practices of the specialist accommodation sector and their contribution to the preservation of natural areas. The specialist accommodation operators investigated in this study are generally displaying a predominantly pro-environmental concern for the surrounding natural environment.

However, there are situational and geographic variables which impede or limit the adoption of some sustainable environmental practice measures. Further investigation of these variables will help to identify appropriate techniques that assist in the ecological sustainability of specialist accommodation establishments located near protected areas.

REFERENCES

- AAA Tourism. (2005). National accommodation classification guidelines for STAR rating assessments: Green STARS assessment criteria. Retrieved 15 December 2005, from www.aaatourism.com.au
- AAA Tourism. (2006). Green STARS. Retrieved 24 October 2006, from <http://www.aaatourism.com.au/AAATDefault.aspx?sit=1&pid=152>
- Ajzen, I. (1988). *Attitudes, personality and behavior*. Milton Keynes: Open University Press.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Albrecht, D., Bultena, G., Hoiberg, E., & Nowak, P. (1982). Measuring environmental concern: The new environmental paradigm. *The Journal of Environmental Education*, 13, 39-43.
- Allcock, A., Jones, B., Lane, S. & Grant, J. (1994). *National Ecotourism Strategy*. Canberra: AGPS.
- Andersen, D., L. (1993). A window to the natural world: The design of ecotourism facilities. In K. Lindberg & D. Hawkins (Eds.), *Ecotourism: A Guide for Planners and Managers*. North Bennington: The Ecotourism Society.
- Arcury, T. A., Johnson, T. P., & Scollay, S. J. (1986). Ecological worldview and environmental knowledge: The "new environmental paradigm". *Journal of Environmental Education*, 17(4), 35-40.
- Ateljevic, I., & Doorne, S. (2000). 'Staying within the fence': Lifestyle entrepreneurship in tourism. *Journal of Sustainable Tourism*, 8(5), 378-392.
- Ateljevic, J. (2007 forthcoming). Small tourism firms and management practices in New Zealand: The Centre Stage Macro region. *Tourism Management*, 28(1), 307-316.
- Atherton Shire Council. (2005). *Atherton Shire Council annual report 2002-2003*. Retrieved from www.athertonsc.qld.gov.au
- Australian Bureau of Statistics. (2004). Characteristics of small business, Australia (Reissue) Cat. no. 8127.0. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2005a). Environmental issues: People's views and practices. Cat. no. 4602.0 Retrieved 17 July 2006, from www.abs.gov.au/ausstats/abs@.nsf/
- Australian Bureau of Statistics. (2005b). Tourist accommodation, Australia, Cat. no. 8635.0. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2007). Tourist accommodation, Australia, Cat. no. 8635.0. Canberra: Australian Bureau of Statistics.
- Baldock, T. E., Tomkins, M., Dalton, G., Skyllass-Kazacos, M., & Kazacos, N. (2006). *Renewable energy sources for the Australian tourism industry*. Brisbane: CRC for Sustainable Tourism.
- Barr, S. (2003). Strategies for sustainability: Citizens and responsible environmental behaviour. *Area*, 35(3), 227-240.
- Barr, S. (2004). Are we all environmentalists now? Rhetoric and reality in environmental action. *Geoforum*, 35, 231-249.

- Barr, S., Ford, N. J., & Gilg, A. W. (2003). Attitudes towards recycling household waste in Exeter, Devon: Quantitative and qualitative approaches. *Local Environment*, 8(4), 407-421.
- Bates, M. P., & Phillips, P. S. (1999). Sustainable waste management in the food and drink industry. *British Food Journal*, 101(8), 580-589.
- Beaumont, N. (1998). *Promoting pro-environmental attitudes and behaviours through ecotourism: That's the theory but does it happen in practice?* Paper presented at the Ecotourism Association of Australia 1998 National Conference, Canberra.
- Beaumont, N. (2001). Ecotourism and the conservation ethic: Recruiting the uninitiated or preaching to the converted? *Journal of Sustainable Tourism*, 9(4), 317-341.
- Becken, S., Frampton, C., & Simmons, D. (2001). Energy consumption patterns in the accommodation sector - the New Zealand case. *Ecological Economics*, 39, 371-386.
- Beeton, S. (1998). *Ecotourism: A practical guide for rural communities*. Collingwood: Landlinks Press.
- Bells, N. (1997). *Sustainable design and technology*. Paper presented at the The Ecotourism Association of Australia 1997 National Conference, Port Stephens, New South Wales, Australia.
- Bentrupperbäumer, J. M., & Reser, J. P. (2000). *Impacts of visitation and use: Psychosocial and biophysical windows on visitation and use in the Wet Tropics World Heritage Area*. Cairns: Cooperative Research Centre for Tropical Rainforest Ecology and Management.
- Blamey, R. K. (1997). Ecotourism: The search for an operational definition. *Journal of Sustainable Tourism*, 5(2), 109-130.
- Boele, N. (1996). *Tourism switched on: Sustainable energy technologies for the tourism industry*. Barton, Australian Capital Territory: Tourism Council Australia.
- Bohdanowicz, P. (2005). European hoteliers' environmental attitudes: Greening the business. *Cornell Hotel and Restaurant Administration Quarterly*, 46 (2), 188-204.
- Buckley, R. (2001). Ecotourism accreditation in Australia. In X. Font & R. Buckley (Eds.), *Tourism ecolabelling: Certification and promotion of sustainable management* (pp. 165-173). Oxon: CABI Publishing.
- Buckley, R. (2002). Tourism ecolabels. *Annals of Tourism Research*, 29(1), 183-208.
- Buckley, R., & Araujo, G. (1997). Environmental management performance in tourism accommodation. *Annals of Tourism Research*, 24, 465-469.
- Buckley, R., Rainbow, J. & Lawrance, K. (2002). *Green guide to whale watching tours*. Gold Coast, CRC for Sustainable Tourism.
- Busby, G., & Rendle, S. (2000). The transition from tourism on farms to farm tourism. *Tourism Management*, 21, 635-642.
- Bushell, R., Staiff, R., & Conner, N. (2002). The role of nature-based tourism in the contribution of protected areas to quality of life in rural and regional communities in Australia. *Journal of Hospitality and Tourism Management*, 9(1), 24-36.
- Capra, F. (1995) Deep ecology: A new paradigm. In G. Sessions (Ed.) *Deep ecology for the 21st century: Readings on the philosophy of the new environmentalism*. Boston, Shambhala Publications.
- Cardwell Shire Council. (2005). *Cardwell Shire Council*. Retrieved from www.csc.qld.gov.au
- Carlsen, J., Getz, D., & Ali-Knight, J. (1998). *Environmental management techniques for family owned rural tourism operations: Examples from Western Australia*. Paper

- presented at the Ecotourism Association of Australia 1998 National Conference, Brisbane.
- Carlsen, J., Getz, D., & Ali-Knight, J. (2001). The environmental attitudes and practices of family businesses in the rural and hospitality sectors. *Journal of Sustainable Tourism*, 9(4), 281-297.
- Carmody, J. (1999). *Managing visitor growth in protected areas: A case study of Mossman Gorge, North Queensland*. Unpublished Honours Thesis, James Cook University, Cairns, Queensland.
- Carmody, J. & Zeppel, H. (2004). *Environmental practices of tourism operators in Douglas Shire, North Queensland*. Report to Douglas Shire Council and Douglas Laboratory. Cairns, James Cook University.
- Carter, R., Whiley, D., & Knight, C. (2004). Improving environmental performance in the tourism accommodation sector. *Journal of Ecotourism*, 1(1), 46-68.
- Casey, P. J., & Scott, K. (2006). Environmental concern and behaviour in an Australian sample within an ecocentric-anthropocentric framework. *Australian Journal of Psychology*, 58(2), 57-67.
- Cater, E. (1995). Environmental contradictions in sustainable tourism. *The Geographical Journal*, 161(1), 21-28.
- Cater, E. (2004). Ecotourism: Theory and practice. In A. Lew, C. M. Hall & A. Williams (Eds.), *A companion to tourism*. Malden, USA: Blackwell Publishing.
- Catton, W. R., & Dunlap, R. E. (1980). A new ecological paradigm for post-exuberant sociology. *The American Behavioral*, 24(1), 15-47.
- Ceballos-Lascurain, H. (1998). Introduction. In K. Lindberg, M. Epler Wood & D. Engeldrum (Eds.), *Ecotourism: A guide for planners and managers* (Vol. 2, pp. 7-10). North Bennington, Vermont: The Ecotourism Society.
- Ceballos-Lascurain, H., & Mehta, H. (2002). Architectural design. In H. Mehta, A. Baez & P. O'Loughlin (Eds.), *International Ecolodge Guidelines*. Burlington, Vermont: The International Ecotourism Society.
- Charters, T. (1996). Kingfisher Bay Resort & Village. In T. Charters, M. Gabriel & S. Prasser (Eds.), *National parks: Private sector's role* (pp. 114-123). Toowoomba: USQ Press.
- Chester, G. (1995). *Ecotourism and world heritage: A case study of the Wet Tropics World Heritage Area*. Paper presented at the Ecotourism and nature-based tourism: Taking the Next Steps, Alice Springs, Northern Territory.
- Chester, G., & Crabtree, A. (2002). Australia: The Nature and Ecotourism Accreditation Program. In M. Honey (Ed.), *Ecotourism and certification: setting standards in practice* (pp. 161-186). Washington D.C.: Island Press.
- Chester, G., Crabtree, A., Drayton, A., Hundloe, T., & Lee, T. (2000). *NEAP: Nature and Ecotourism Accreditation Program* (2nd ed.). Brisbane: Ecotourism Australia.
- Clarke, J. (1996). Farm accommodation and the communication mix. *Tourism Management*, 17(8), 611-620.
- Cock, P., & Pfueller, S. (2000). *Australian Ecotourism: Contributing to Ecological and Community Sustainability*. Melbourne: Monash University.
- Commonwealth Department of Tourism. (1994). *National rural tourism strategy*. Canberra, Commonwealth of Australia.

- Cordano, M., Welcomer, S., A., & Scherer, R. F. (2003). An analysis of the predictive validity of the new ecological paradigm scale. *The Journal of Environmental Education*, 34(3), 22-28.
- Corral-Verdugo, V., & Armendariz, L. I. (2000). The "new environmental paradigm" in a Mexican community. *The Journal of Environmental Education*, 31(3), 25-31.
- Cottrell, S. P. (2003). Influence of sociodemographics and environmental attitudes on general responsible environmental behaviour among recreational boaters. *Environment and Behavior*, 35(3), 347-375.
- Crabtree, A., Hundloe, T., Lee, T., & Chester, G. (2002). *Green Globe 21: International Ecotourism Standard for Ecotourism Products*.
- Crabtree, A., & Newson, M. (2000). *Plan and implement minimal impact operations*. Warrnambool, Victoria: South West Institute of TAFE.
- CRC Tourism. (2004). Daintree wilderness lodge. Retrieved 28 March 2004, from <http://twinshare.crctourism.com.au/CaseStudies/Cs4.htm>
- Curtis, I. A. (2002). Environmentally sustainable tourism: A case study for carbon trading at northern Queensland hotels and resorts. *Australian Journal of Environmental Management*, 9(March), 27-36.
- Dale, J. C., & Kluga, T. (1992). Energy conservation: More than a good idea. *The Cornell Hotel and Restaurant Administration Quarterly*, 33(6), 30-35.
- de Kadt, E. (1992). Making the alternative sustainable: Lessons from development for tourism. In V. L. Smith & W. R. Eadington (Eds.), *Tourism alternatives: Potentials and problems in the development of tourism* (pp. 47-75). Philadelphia: University of Pennsylvania Press.
- De Lacy, T., Battig, M., Moore, S., & Noakes, S. (2002). *Public/Private partnerships for sustainable tourism: Delivering a sustainability strategy for tourism destinations*. Gold Coast: CRC for Sustainable Tourism.
- Department of Industry, Tourism and Resources. (2002). *Research Report Number 4: Tourism workforce and training*. Retrieved 24 January 2007 from www.industry.gov.au/assets/documents/intrinternet/4.ResearchReportNo4TourismWorkforceandTraining20050202121253.pdf
- Department of Industry, Tourism and Resources. (2003). *Green Paper: A medium to long-term strategy for tourism*. Canberra: Commonwealth Government of Australia.
- Department of Industry, Tourism and Resources. (2004a). *Tourism white paper: A medium to long term strategy for tourism*. Canberra: Commonwealth of Australia.
- Department of Industry, Tourism and Resources. (2004b). What are tourists looking for in nature-based tourism? Retrieved 29 June 2006, from www.industry.gov.au/assets/documents/itrinternet/survey_nature_ART20041110151915.pdf
- Department of the Environment and Heritage. (1997). *Coastal Tourism - A Manual for Sustainable Development*. Canberra, A.C.T.: Australian Government, Dept. of the Environment, Sport and Territories.
- Department of Local Government, Planning, Sport and Recreation. (2006). *Guidelines for councils: Use of greywater for residential properties in Queensland sewerred areas*. Retrieved 30 January 2007 from http://www.lgp.qld.gov.au/docs/building_codes/greywater/guidelines_councils.pdf
- Department of Tourism, Small Business and Industry. (1997). *Queensland Ecotourism Plan*. Brisbane: State of Queensland.

- Dewhurst, H., & Thomas, R. (2003). Encouraging sustainable business practices in a non-regulatory environment: A case study of small tourism firms in a UK National Park. *Journal of Sustainable Tourism, 11*(5), 383-403.
- Diamantis, D., & Ladkin, A. (1999). The links between sustainable tourism and ecotourism: A definitional and operational perspective. *The Journal of Tourism Studies, 10*(2), 35-46.
- Dickman, S., & Maddock, M. (2000). *The business of bed and breakfast*. Melbourne: Hospitality Press.
- Ding, P., & Pigram, J. (1995). Environmental audits: An emerging concept in sustainable tourism development. *The Journal of Tourism Studies, 6*(2), 2-10.
- Donovan, T., & McElligott, B. (2000). Environmental management in the Irish hotel sector - policy and practice. In M. Robinson, J. Swarbrooke, N. Evans, P. Long & R. Sharpley (Eds.), *Environmental management and pathways to sustainable tourism* (pp. 55-79). Sunderland, Great Britain: Centre for Travel and Tourism.
- Douglas, N. (2001). Travelling for health: Spa and health resorts. In N. Douglas, N. Douglas & R. Derrett (Eds.), *Special Interest Tourism* (pp. 260-281). Brisbane: John Wiley & Sons.
- Douglas Shire Council. (2004). *Douglas Shire Council*. Accessed 22 May 2004, from www.dsc.qld.gov.au
- Douglas Shire Sustainable Futures Community Working Group. (2001). Douglas Shire Sustainable Futures Draft Strategy. Retrieved March 2003 from www.dsc.qld.gov.au
- Dowling, R. K. (2000a). Ecologically sustainable tourism. In J. Jafari (Ed.), *Encyclopedia of Tourism*. London: Routledge.
- Dowling, R. K. (2000b). Environmental code of ethics. In J. Jafari (Ed.), *Encyclopedia of Tourism* (pp. 86). New York: Routledge.
- Dredge, D., & Humphreys, J. (2003). Local government, world heritage and ecotourism: Policy and strategy in Australia's Tropical Rainforests. In D. A. Fennell & R. K. Dowling (Eds.), *Ecotourism Policy and Planning*. Oxon: CABI Publishing.
- Driml, S. (1997). *Towards sustainable tourism in the Wet Tropics World Heritage Area*. Brisbane: Kinhill Economics.
- Dunlap, R. E. (2002). Environmental sociology: A personal perspective on its first quarter century. *Organization & Environment, 15*(1), 10-29.
- Dunlap, R.E. & Catton, W.R. (1979). Environmental sociology. *Annual Review of Sociology, 5*, 243-273.
- Dunlap, R. E. & Van Leire, K. D. (1978). The "new environmental paradigm": A proposed measuring instrument. *The Journal of Environmental Education, 9*(4), 10-19.
- Dunlap, R. E., Van Leire, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues, 56*(3), 425-442.
- Eacham Historical Society. (1995). *Malanda: In the shadow of Bartle Frere*. Malanda, Eacham Historical Society.
- Eacham Shire Council. (2006). *Eacham Shire Council*. Accessed 24 January 2007 from www.eachamshire.qld.gov.au
- Ecotourism Australia. (2003). EcoCertification Program. Retrieved 1 October 2005, from www.ecotourism.org.au/products.asp

- Ecotourism Australia. (2005). Products. Retrieved 14 November 2005, from www.ecotourism.org.au
- Environmental Protection Agency. (2003) Parks and forests. Retrieved 10 September 2003. Available from www.epa.qld.gov.au/parks_and_forests/
- Environmental Protection Agency. (2004). Nature Refuges [Brochure]. Brisbane: Environmental Protection Agency.
- Environmental Protection Agency. (2005a). Glossary. Retrieved 1 October 2005, from www.epa.qld.gov.au/environmental_management/sustainability/industry/sustainability_roadmap/glossary/
- Environmental Protection Agency. (2005b). Nature calls: a nature refuge publication. Issue 4: Dry Season. Retrieved 2 August 2005, from <http://www.epa.qld.gov.au/naturerefuge>
- Environmental Protection Agency. (2006). Nature refuges. Retrieved 19 September 2006, from www.epa.qld.gov.au/nature_conservation/nature_refuges#gen1
- Epler Wood, M. (2002). *Ecotourism: Principles, practices and policies for sustainability*. Burlington: The International Ecotourism Society.
- Fennell, D.A. (1999). *Ecotourism: An introduction*. London, Routledge.
- Fielding, K. S., Terry, D. J., Masser, B. M., Bordia, P., & Hogg, M. A. (2005). Explaining landholders' decisions about riparian zone management: The role of behavioural, normative, and control beliefs. *Journal of Environmental Management*, 77, 12-21.
- Finn, M., Elliott-White, M., & Walton, M. (2000). *Tourism and leisure research methods: Data collection, analysis and interpretation*. Essex: Pearson Education.
- Firth, T., & Hing, N. (1999). Backpacker hostels and their guests: Attitudes and behaviours relating to sustainable tourism. *Tourism Management*, 20, 251-254.
- Fleischer, A., & Tchetchik, A. (2005). Does rural tourism benefit from agriculture? *Tourism Management*, 26, 493-501.
- Floyd, M. F., Jang, H., & Noe, F. P. (1997). The relationship between environmental concern and acceptability of environmental impacts among visitors to two U.S. national park settings. *Journal of Environmental Management*, 51, 391-412.
- Font, X., & Harris, C. (2004). Rethinking standards from green to sustainable. *Annals of Tourism Research*, 31(4), 986-1007.
- Forshay, K., J., Morzaria-Luna, H. N., Hale, B., & Predick, K. (2005). Landowner satisfaction with the Wetlands Reserve Program in Wisconsin. *Environmental Management*, 36(2), 248-257.
- Forsyth, T. (1997). Environmental responsibility and business regulation: The case of sustainable tourism. *The Geographical Journal*, 163(3), 270-280.
- Fransson, N., & Garling, T. (1999). Environmental concern: Conceptual definitions, measurement methods, and research findings. *Journal of Environmental Psychology*, 19, 369-382.
- Gagnon Thompson, S. C., & Barton, M. A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology*, 14, 149-157.
- Gardner, J. (2001). Accommodations. In D. Weaver (Ed.), *The Encyclopedia of Ecotourism*. Oxon: CABI Publishing.
- Gellar, J. M., & Lasley, P. (1985). The new environmental paradigm: A re-examination. *Journal of Environmental Education*, 17(3), 9-12.

- Getz, D. (1999). Resort-centred tours and development of the rural hinterland: The case of Cairns and the Atherton Tablelands. *The Journal of Tourism Studies*, 10(2), 23-34.
- Getz, D., & Carlsen, J. (2000). Characteristics and goals of family and owner-operated businesses in the rural tourism and hospitality sectors. *Tourism Management*, 21, 547-560.
- Getz, D., Carlsen, J., & Morrison, A. (2004). *The family business in tourism and hospitality*. Oxfordshire: CABI Publishing.
- Gifford, R. (1997). *Environmental psychology: Principles and practice*. Boston, Allyn & Bacon.
- Gilg, A., & Barr, S. (2005). Encouraging 'environmental action' by exhortation: Evidence from a study in Devon. *Journal of Environmental Planning and Management*, 48(4), 593-618.
- Goodall, B. (2003). Environmental auditing: a means to improving tourism's environmental performance. In C. Cooper (Ed.), *Classic reviews in tourism*. Clevedon: Channel View Publications.
- Goodall, B., & Stabler, M. J. (1997). Principles influencing the determination of environmental standards for sustainable tourism. In M. J. Stabler (Ed.), *Tourism and sustainability: Principles to practice* (pp. 279-304). Oxon: CAB International.
- Goodall, B., & Stabler, M. J. (2000). Environmental standards and performance measurement in tourism destination development. In G. Richards & D. Hall (Eds.), *Tourism and sustainable community development* (pp. 63-82). London: Routledge.
- Green Globe. (2006). Green Globe. Retrieved 7 October 2006, from www.greenglobe.org
- Grenstad, G. (1999). The new ecological paradigm: Examination and scale analysis. *Environmental Politics*, 8(4), 194-205.
- Griffin, T., & DeLacy, T. (2002). Green Globe: Sustainability accreditation for tourism. In R. Harris, T. Griffin & P. Williams (Eds.), *Sustainable tourism: A global perspective*. Oxford: Butterworth Heinemann.
- Hall, C. M. (2007). *Introduction to tourism in Australia: development, issues and change*. (5th ed.). Frenchs Forest: Pearson Education Australia.
- Hardy, A. L., & Beeton, R. (2001a). *Stakeholder perceptions of sustainable tourism: Lessons learnt from a study in the Daintree region of Far North Queensland, Australia*. Paper presented at the CAUTHE National Research Conference, Canberra.
- Hardy, A. L., & Beeton, S. (2001b). Sustainable tourism or maintainable tourism: Managing resources for more than average outcomes. *Journal of Sustainable Tourism*, 9(3), 168-192.
- Harris, R., & Varga, D. (1995). Jemby-Rinjah Lodge. In R. Harris & N. Leiper (Eds.), *Sustainable tourism: An Australian perspective*. Chatswood: Butterworth-Heinemann.
- Hawkes, S., & Williams, P. (Eds.). (1993). *The greening of tourism: From principles to practice*. Burnaby, Canada: Simon Fraser University.
- Healey, J. (1999). *Recycling*. Balmain, New South Wales: The Spinney Press.
- Herberton Shire Council. (2006). *Herberton Shire Council*. Accessed 24 January 2007, www.herberton.qld.gov.au.
- Hillary, R. (Ed.). (2000). *Small and medium-sized enterprises and the environment: Business imperatives*. Sheffield, Green Leaf Publishing Limited.

- Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behaviour: A meta-analysis. *Journal of Environmental Education*, 18, 1-8.
- Hobson, K., & Essex, S. (2001). Sustainable tourism: A view from accommodation businesses. *The Service Industries Journal*, 21(4), 133-146.
- Honey, M. (Ed.). (2002). *Ecotourism & certification: Setting standards in practice*. Washington D.C.: Island Press.
- Honey, M. (2003a). Giving a grade to Costa Rica's green tourism. *NACLA Report on the Americas*, 36(6), 39-46.
- Honey, M. (2003b). Protecting Eden: Setting green standards for the tourism industry. *Environment*, 45(6), 8-21.
- Honey, M., & Stewart, E. (2002). The evolution of "green" standards for tourism. In M. Honey (Ed.), *Ecotourism & certification: Setting standards in practice* (pp. 33-71). Washington D.C.: Island Press.
- Horobin, H., & Long, J. (1996). Sustainable tourism: The role of the small firm. *International Journal of Contemporary Hospitality Management*, 8(5), 15-19.
- Hossain, A. (2004). *Bed & breakfast visitors in Australia 2002*, BTR Niche Market Report Number 3. Canberra: Bureau of Tourism Research.
- Huberman, A. M., & Miles, M. B. (1998). Data management and analysis methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials*. Thousand Oaks: Sage Publications.
- Hurlimann, A., & McKay, J. (2004). Attitudes to reclaimed water for domestic use: part 2. trust. *Water*(August), 28-32.
- Hurlimann, A., & McKay, J. (2006). What attributes of recycled water make it fit for residential purposes? The Mawson Lakes experience. *Desalination*, 187, 167-177.
- Huybers, T., & Bennett, J. (2002). *Environmental management and the competitiveness of nature-based tourism destinations*. Gloscester: Edward Elgar Publishing Limited.
- Hyde, R., & Law, J. (n.d.). *Designing tourism infrastructure: Steps to sustainable design*. Canberra: Green Globe 21 Asia Pacific.
- Issaverdis, J. P. (2001). The pursuit of excellence: Benchmarking, accreditation, best practice and auditing. In D. Weaver (Ed.), *The Encyclopedia of Ecotourism* (pp. 579-594). Oxon: CABI Publishing.
- IUCN. (1994). *Guidelines for protected area management categories*. Gland, Switzerland: The World Conservation Union.
- Jennings, G. (2001). *Tourism Research*. Brisbane: John Wiley & Sons Australia Ltd.
- Ji, Y., & Plainiotis, S. (2006). Sustainable design [Electronic Version]. Retrieved 6 October 2006 from www.reference.com/browse/wiki/sustainable_design.
- Johnstone Shire Council. (2004). *Johnstone Shire Council Draft Planning Scheme*. Retrieved 14 October 2004 from www.jsc.qld.gov.au
- Jones, D. L., Jurowski, C., & Uysal, M. (2000). Host community residents' attitudes: A comparison of environmental viewpoints. *Tourism and Hospitality Research*, 2(2), 129-156.
- Kaiser, F. G., Wolfing, S., & Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of Environmental Psychology*, 19, 1-19.
- Kavanagh, L. J. (2000). *Water management and sustainability at Queensland tourist resorts*. Gold Coast: CRC Sustainable Tourism.

- Kidder, L., & Judd, C. (1986). *Research methods in social relations*. Tokyo: CBS Publishing.
- Kingfisher Bay Resort – Fraser Island, Queensland, Australia. (n.d.) *Media fact files: Ecotourism resort*. Retrieved 24 July 2006, from <http://media.kingfisherbay.com/facts/ecoresort.pdf>
- Kirk, D. (1998). Attitudes to environmental management held by a group of hotel managers in Edinburgh. *Hospitality Management*, 17, 33-47.
- Knowles, T., Macmillan, S., Palmer, J., Grabowski, P. & Hashimoto, A. (1999). The development of environmental initiatives in tourism: Responses from the London hotel sector. *International Journal of Tourism Research*, 1, 255-265.
- Koeman, A., Worboys, G., DeLacy, T., Scott, A., & Lipman, G. (2002). Green Globe: A global environmental certification program for travel and tourism. In M. Honey (Ed.), *Ecotourism & certification: Setting standards in practice*. Washington D.C.: Island Press.
- Kokkrankal, J., & Morrison, A. (2002). Entrepreneurship and sustainable tourism: The houseboats of Kerala. *Tourism and Hospitality Research*, 4(1), 7-20.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour? *Environmental Education Research*, 8(3), 239-260.
- Kozak, M. & Nield, K. (2004). The role of quality and eco-labelling systems in destination benchmarking. *Journal of Sustainable Tourism*, 12(2), 138-148.
- La Trobe, H. L., & Acott, T. (2000). A modified NEP/DSP environmental attitudes scale. *The Journal of Environmental Education*, 32(1), 12-20.
- Lalonde, R., & Jackson, E. L. (2002). The new environmental paradigm scale: has it outlived its usefulness? *The Journal of Environmental Education*, 33(4), 28-37.
- Lam, T., & Hsu, C. H. C. (2004). Theory of planned behaviour: Potential travelers from China. *Journal of Hospitality & Tourism Research*, 28(4), 463-482.
- Lane, B. (1991). Sustainable tourism: A new concept for the interpreter. *Interpretation Journal*, 49, 1-4.
- Lane, B. (1994). What is rural tourism? *Journal of Sustainable Tourism*, 2, 7-21.
- Lanier, P., Caples, D., & Cook, H. (2000). How big is small? A study of bed & breakfasts, country inns, and small hotels. *Cornell Hotel and Restaurant Administration Quarterly*, 41(5), 90-95.
- Lawton, L., & Weaver, D. (2001). Nature-based tourism and ecotourism. In B. Faulkner, G. Moscardo & E. Laws (Eds.), *Tourism in the 21st century* (pp. 34-48). London: Continuum.
- Lee, W. (2002). *Visitors' experiences of environmental management practices in ecotourism accommodation*. Unpublished Doctoral dissertation, James Cook University, Townsville, Queensland.
- Lim, C., & McAleer, M. (2005). Ecologically sustainable tourism management. *Environmental Modelling & Software*, 20, 1431-1438.
- Lindberg, K., Epler Wood, M., & Engeldrum, D. (Eds.). (1998). *Ecotourism: A guide for planners and managers* (Vol. 2). Vermont: The Ecotourism Society.
- Loker, L. (1992). *The backpacker phenomenon II: More answers to further questions*. Townsville: James Cook University.
- Loker-Murphy, L. (1996). Backpackers in Australia: A motivation-based segmentation study. *Journal of Travel and Tourism Marketing*, 5(4), 23-45.

- Loker-Murphy, L., & Pearce, P. (1995). Young budget travelers: Backpackers in Australia. *Annals of Tourism Research*, 22(4), 819-843.
- Long, P., & Lane, B. (2000). Rural tourism development. In W. C. Gartner & D. W. Lime (Eds.), *Trends in outdoor recreation, leisure and tourism* (pp. 299-308). Oxon: CABI Publishing.
- Luzar, E. J., Diagne, A., Gan, C., & Henning, B. R. (1995). Evaluating nature-based tourism using the new environmental paradigm. *Journal of Agricultural and Applied Economics*, 27(2), 544-555.
- MacMillan, G., & McInnes, W. (2004). *The brand strength of ecotourism and the consumer value of eco-labelling*. Paper presented at the Ecotourism Australia's 12th Annual Conference, Blue Mountains, New South Wales.
- Mareeba Shire Council. (2004). *Mareeba Shire Council*. www.msc.qld.gov.au
- Mason, P., & Mowforth, M. (1995). *Codes of conduct in tourism*. Plymouth: University of Plymouth.
- McIntosh, A. J., & Campbell, T. (2001). Willing workers on organic farms (WWOOF): A neglected aspect of farm tourism in New Zealand. *Journal of Sustainable Tourism*, 9(2), 111-127.
- McIntosh, A. J., & Siggs, A. (2005). An exploration of the experiential nature of boutique accommodation. *Journal of Travel Research*, 44, 74-81.
- McKercher, B. (1998). *The business of nature-based tourism*. Melbourne: Hospitality Press.
- Mehta, H., Baez, A., & O'Loughlin, P. (Eds.). (2002). *International ecolodge guidelines*. Burlington, Vermont: The International Ecotourism Society.
- Meyer-Arendt, K. (2004). Tourism and the natural environment. In A. Lew, C. M. Hall & A. Williams (Eds.), *A companion to tourism*. Malden, USA: Blackwell Publishing.
- Miciak, A. R., Kirkland, K., & Ritchie, B. (2001). Benchmarking an emerging lodging alternative in Canada: A profile of the B&B sector. *Tourism Economics*, 7(1), 39-58.
- Middleton, V., & Hawkins, R. (1998). *Sustainable tourism: A marketing perspective*. Oxford: Butterworth-Heinemann.
- Mings, R. C. (1997). Tracking 'snowbirds' in Australia: Winter sun seekers in far North Queensland. *Australian Geographical Studies*, 35(2), 168-182.
- Mitchell, R. C., Hall, C. M., & McIntosh, A. J. (2000). Wine tourism and consumer behaviour. In C. M. Hall, L. Sharples, E. Cambourne & N. Macionis (Eds.), *Wine tourism around the world: Development, management and markets* (pp. 115-135). Oxford: Butterworth-Heinemann.
- Morrison, A. (1996). Guest houses and small hotels. In P. Jones (Ed.), *Introduction to hospitality operations* (pp. 73-85). London: Cassell.
- Morrison, A., Pearce, P. L., Moscardo, G., Nadkarni, N., & O'Leary, J. T. (1996). Specialist accommodation: Definition, markets served, and roles in tourism development. *Journal of Travel Research*, 35(1), 18-28.
- Moscardo, G. (1999). *Making visitors mindful: Principles for creating sustainable visitor experiences through effective communication*. Champaign, Illinois: Sagamore Publishing.
- Moscardo, G., Morrison, A., & Pearce, P. (1996). Specialist accommodation and ecologically-sustainable tourism. *Journal of Sustainable Tourism*, 4(1), 29-52.

- Mowforth, M. & Munt, I. (1998). *Tourism and sustainability: New tourism in the third world*. London, Routledge.
- Newsome, D., Moore, S. A., & Dowling, R. K. (2002). *Natural area tourism: Ecology, impacts and management*. Sydney: Channel View Publications.
- Nilsson, P. A. (2002). Staying on farms: An ideological background. *Annals of Tourism Research*, 29(1), 7-24.
- Noe, F. P., & Snow, R. (1990). The new environmental paradigm and further scale analysis. *Journal of Environmental Education*, 21(4), 20-26.
- Nuntsu, N., Tassiopoulos, D., & Haydam, N. (2004). The bed and breakfast market of Buffalo City (BC), South Africa: Present status, constraints and success factors. *Tourism Management*, 25, 515-522.
- Office of Economic and Statistical Research. (2002). *The contribution of international and domestic visitor expenditure to the Queensland regional economies 1998-1999*. Brisbane, Queensland Treasury. Retrieved on 14 August 2005 from http://www.oesr.qld.gov.au/data/single_publications/industry/tourism/tourism_report_4.pdf
- Olsen, M., Lodwick, D., & Dunlap, R. E. (1992). *Viewing the world ecologically*. Oxford: Westview Press.
- Oppermann, M. (1998). Farm tourism in New Zealand. In R. Butler, C. M. Hall & J. Jenkins (Eds.), *Tourism and recreation in rural areas*. Chichester: John Wiley & Sons.
- Oppermann, M. (2000). Triangulation - a methodological discussion. *International Journal of Tourism Research*, 2, 141-146.
- Orams, M. B. (2000). Towards a more desirable form of ecotourism. In C. P. Ryan, Stephen (Ed.), *Tourism management: Towards the new millenium* (pp. 315-323). ? : Pergamon.
- Osland, G., E., & Mackoy, R. (2004). Ecotourism performance goals and evaluations. *Journal of Ecotourism*, 3(2), 109-128.
- Page, S. J., & Dowling, R. K. (2002). *Ecotourism*. Essex: Pearson Education Limited.
- Page, S.J. & Getz, D. (1997). *The business of rural tourism: International perspectives*. London, ITBP.
- Pallant, J. (2005). *SPSS survival manual* (2nd ed.). Crows Nest: Allen & Unwin.
- Page, S. J. & Dowling, R.K. (2002) *Ecotourism*. Essex, Pearson Education Limited.
- Payne, D., & Dimanche, F. (1996). Towards a code of conduct for the tourism industry: An ethics model. *Journal of Business Ethics*, 15(9), 997-1007.
- Peace, A. (2005). Managing the myth of ecotourism: A Queensland case study. *The Australian Journal of Anthropology*, 16(3), 321-334.
- Pearce, D. G. (1992). Alternative tourism: Concepts, classifications, and questions. In V. L. Smith & W. R. Eadington (Eds.), *Tourism alternatives: Potentials and problems in the development of tourism* (pp. 15-30). Philadelphia: University of Pennsylvania Press.
- Pearce, P. (1990a). Farm tourism in New Zealand: A social situation analysis. *Annals of Tourism Research*, 17, 337-352.
- Pearce, P. (1990b). *The ulysses factor: Evaluating visitors in tourist settings*. New York: Springer-Verlag.

- Pearce, P., & Moscardo, G. (1992). *The boutique/ specialist accommodation sector: Perceived government needs and policy initiatives*. Townsville: James Cook University.
- Peters, M., & Turner, K. (2004). SME environmental attitudes and participation in local-scale voluntary initiatives: Some practical applications. *Journal of Environmental Planning and Management*, 47 (3), 449-473.
- Petts, J., Herd, A., Gerrard, S., & Horne, C. (1999). The climate and culture of environmental compliance within SMEs. *Business Strategy and the Environment*, 8(1), 14-30.
- Pigram, J. J. (1997). Best practice environmental management and the tourism industry. In C. Cooper & S. Wanhill (Eds.), *Tourism development: Environmental and community issues*. Chichester: John Wiley & Sons.
- Pigram, J. J. (2000a). Tourism and sustainability: A positive trend. In W. C. Gartner & D. W. Lime (Eds.), *Trends in outdoor recreation, leisure and tourism*. New York: CABI Publishing.
- Pigram, J. J. (2000b). Environmental management, best practice. In J. Jafari (Ed.), *Encyclopedia of Tourism*. London: Routledge.
- Pigram, J. J., & Ding, P. (1999). Tourism-environment interaction: The greening of Australian beach resorts. In T. V. Singh & S. Singh (Eds.), *Tourism development in critical environments* (pp. 35-50). New York: Cognizant Communication Corporation.
- Punch, K. F. (2005). *Introduction to social research: Quantitative and qualitative approaches* (2nd ed.). London: SAGE Publications.
- Queensland Department of Local Government, Planning and Sport. (2004). Accessed 12 November 2004. Available at: <http://www.lgp.qld.gov.au/applications/lgDirectory/>
- Queensland Department of Local Government, Planning and Sport. (2005). Accessed 8 February 2005. Available at: <http://www.lgp.qld.gov.au/applications/lgDirectory/>
- Rainbow, J., Warnken, J. & Buckley, R. (2002). *Green guide to scuba diving*. Gold Coast, CRC for Sustainable Tourism.
- Richards, G., & Wilson, J. (2004). Drifting towards the global nomad. In G. Richards & J. Wilson (Eds.), *The global nomad: Backpacker travel in theory and practice*. Clevedon: Channel View Publications.
- Ross, G. (1998). *The psychology of tourism* (2nd ed.). Melbourne: Hospitality Press.
- Schaper, M., & Carlsen, J. (2004). Overcoming the green gap: Improving the environmental performance of small tourism firms in Western Australia. In R. Thomas (Ed.), *Small firms in tourism: International perspectives* (pp. 197-214). Oxford: Elsevier Ltd.
- Scott, D., & Willits, F. K. (1994). Environmental attitudes and behavior: A Pennsylvania survey. *Environment and Behavior*, 26(2), 239-260.
- Sharpley, R. (2004). Tourism and the countryside. In A. Lew, C. M. Hall & A. Williams (Eds.), *A companion to tourism* (pp. 374-386). Malden, USA: Blackwell Publishing.
- Shaw, G., & Williams, A. M. (2002). *Critical issues in tourism: A geographical perspective* (2nd ed.). Oxford: Blackwell Publishers.
- Slaughter, L. (2004). Profiling the international backpacker market in Australia. In G. Richards & J. Wilson (Eds.), *The global nomad: Backpacker travel in theory and practice*. Clevedon: Channel View Publications.

- South Africa Department of Environmental Affairs and Tourism. (2003). *Responsible tourism handbook: A guide to good practice for tourism operators: Greening the WSSD*.
- South East Water. (2006). Household greywater reuse guidelines. Retrieved 7 October 2006, from www.southeastwater.com.au/sewl/index.asp
- Staats, H. (2003). Understanding proenvironmental attitudes and behavior: An analysis and review of research based on the theory of planned behavior. In M. Bonnes, T. Lee & M. Bonaiuto (Eds.), *Psychological theories for environmental issues* (pp. 171-201). Hants, England: Ashgate Publishing Limited.
- Stabler, M. J., & Goodall, B. (1997). Environmental awareness, action and performance in the Guernsey hospitality sector. *Tourism Management*, 18(1), 19-33.
- Stern, P. C., Dietz, T., & Guagnano, G. A. (1995). The new ecological paradigm in social-psychological context. *Environment and Behavior*, 27(6), 723-743.
- Sweeting, J., & Rosenfeld-Sweeting, A. (n.d.). *A practical guide to good practice: Managing environmental and social issues in the accommodation sector*. Paris: Tour Operators' Initiative for Sustainable Tourism Development.
- Tabachnick, B. G. & Fidell, L.S. (2001). *Using multivariate statistics*. (4th edition). Boston: Allyn & Bacon.
- Tarrant, M. A., & Cordell, H. K. (1997). The effect of respondent characteristics on general environmental attitude-behavior correspondence. *Environment and Behavior*, 29(5), 618-638.
- Terry, D. J., Hogg, M. A., & White, K. M. (1999). The theory of planned behaviour: Self-identity, social identity and group norms. *The British Journal of Social Psychology*, 38, 225-244.
- Thomas, R. (2000). Small firms in the tourism industry: Some conceptual issues. *International Journal of Tourism Research*, 2, 345-353.
- Thompson, C., & Mooney, M. (1998). *Is it all rubbish?: Incentives and impediments for waste minimisation in the accommodation industry*. Paper presented at the New Zealand Tourism and Hospitality Research Conference, Akaroa, New Zealand.
- Todd, S. E., & Williams, P. W. (1996). From white to green: A proposed environmental management system framework for ski areas. *Journal of Sustainable Tourism*, 4(3), 147-173.
- Tonge, R. (2002). *How to establish host farm ventures* (8th ed.). Coolumb Beach, Queensland: Gull Publishing.
- Toth, R. (2001). Exploring the concepts underlying certification. In M. Honey (Ed.), *Ecotourism & certification: setting standards in practice*. Washington: Island Press.
- Tourism Queensland. (2002a). *Environmental impact monitoring: A guide for tourism operators*. Brisbane: Tourism Queensland.
- Tourism Queensland. (2002b). *Queensland ecotourism plan 2003-2008*. Brisbane: State of Queensland.
- Tourism Queensland. (2005a). Bed and breakfast tourism. Retrieved 29 August 2005, from http://www.tq.com.au/tq_com/dms/2EEE93359D5219A6A5EC30CA4B462713.pdf
- Tourism Queensland. (2005b). Caravan parks and commercial camping industry. from www.tq.com.au/tq_com/dms/5D60CC68B418039DADFAFD1D3549DAE6.pdf
- Tourism Queensland. (2005c). Farmstay tourism. Retrieved 29 August 2005, from http://www.tq.com.au/tq_com/dms/2EF2F949B463F8F8C35C1E6850096246.pdf

- Tourism Queensland. (2005d). Health and spa tourism. Retrieved 29 August 2005, from http://www.tq.com.au/tq_com/dms/2EF5C41BD27CF5C16E84F80A2446737B.pdf
- Tourism Research Australia. (2004). Travel in Australia, 2003: Annual results of the international and national visitor surveys, 2003. Retrieved 30 December 2006, from <http://www.tra.australia.com/content/documents/IVS/travel%20in%20australia%20results%20of%20the%20international%20and%20national%20visitor%20survey%202003.pdf>
- Tourism Research Australia. (2005a). Niche market snapshot on backpackers in Australia, June 2005. Retrieved 31 August 2005, from http://www.tourism.australia.com///content/Niche/niche_snapshot_backpackers.pdf
- Tourism Research Australia. (2005b). Niche market snapshot on nature-based tourism in Australia, June 2005. Retrieved 31 August 2005, from http://www.tourism.australia.com///content/Niche/niche_snapshot_ecotourism.pdf
- Tourism Tropical North Queensland. (2006). *Tourism Fact File: October 2006*. [Brochure]
- Turner, T. (1997). Behavioural aspects of guests' environmental concern: A marketing framework. *Australian Journal of Hospitality Management*, 4, 36-41.
- Trumbo, C. W., & O'Keefe, G. J. (2005). Intention to conserve water: Environmental values, reasoned action, and information effects across time. *Society and Natural Resources*, 18, 573-585.
- Tzschentke, N., Kirk, D., & Lynch, P. A. (2004). Reasons for going green in serviced accommodation establishments. *International Journal of Contemporary Hospitality Management*, 16(2), 116-124.
- United Nations Educational Scientific and Cultural Organisation. (2005). World heritage. Retrieved 24 August 2005, from <http://whc.unesco.org/en/about>
- Upchurch, R. (2000). Code of ethics. In J. Jafari (Ed.), *Encyclopedia of Tourism* (pp. 86). New York: Routledge.
- Uysal, M., Jurowski, C., Noe, F. P., & McDonald, C. D. (1994). Environmental attitude by trip and visitor characteristics: US Virgin Islands National Park. *Tourism Management*, 15(4), 284-294.
- Valentine, P. (1992). Nature-based tourism. In B. Weiler & C. M. Hall (Eds.), *Special interest tourism*. Great Britain: John Wiley & Sons Inc.
- Vallen, G., & Rande, W. (1997). Bed and breakfasts in Arizona: Demographic and operating statistics. *Cornell Hotel and Restaurant Administration Quarterly*, 38(4), 62-68.
- Vernon, J., Essex, S., Pinder, D., & Curry, K. (2003). The 'greening' of tourism micro-businesses: Outcomes of focus group investigations in South East Cornwall. *Business, Strategy and the Environment*, 12, 49-69.
- Wall, G. (1997). Is ecotourism sustainable? *Environmental Management*, 21(4), 483-491.
- Warnick, R.B. & Klar, L.R. Jr. (1991). The bed and breakfast and small inn industry of the commonwealth of Massachusetts: an exploratory survey. *Journal of Travel Research*, 29 (1), 17-25.
- Warnken, J., Bradley, M., & Guilding, C. (2005). Eco-resorts vs. mainstream accommodation providers: An investigation of the viability of benchmarking environmental performance. *Tourism Management*, 26, 367-379.
- Weaver, D. (2001). *Ecotourism*. Milton, QLD: John Wiley & Sons Australia, Ltd.
- Weaver, D. (2006). *Sustainable tourism*. Oxford: Elsevier Butterworth-Heinemann.

- Weaver, D., & Fennell, D. A. (1997). The vacation farm sector in Saskatchewan: A profile of operations. *Tourism Management*, 18(6), 357-365.
- Weaver, D., & Lawton, L. (2001). *Attitudes and behaviour of ecotourists in Lamington National Park*. Gold Coast: CRC for Sustainable Tourism.
- Weaver, D., & Opperman, M. (2000). *Tourism management*. Brisbane: Wiley.
- Wei, S., & Ruys, H. (1999). Managers' perceptions of environmental issues in Australian hotels. *Australian Journal of Environmental Management*, 6, 78-85.
- Wet Tropics Management Authority. (1997). *Protection through partnerships: Policies for implementation of the Wet Tropics plan*. Cairns: Wet Tropics Management Authority.
- Wet Tropics Management Authority. (2000). *Wet Tropics nature based tourism strategy*. Cairns: Wet Tropics Management Authority.
- Wet Tropics Management Authority. (2001). *Wet Tropics walking strategy*. Cairns: Wet Tropics Management Authority.
- Wet Tropics Management Authority. (2003). Managing a World Heritage Area. Retrieved 15 April 2003, from http://www.wettropics.gov.au/mwha_index.html
- Wet Tropics Management Authority. (2004a). *Wet Tropics conservation strategy: The conservation, rehabilitation and transmission to future generations of the Wet Tropics World Heritage Area*. Cairns: Wet Tropics Management Authority.
- Wet Tropics Management Authority. (2004b). *Annual report and state of the Wet Tropics report 2003 - 2004*. Cairns: Wet Tropics Management Authority.
- Wet Tropics Management Authority. (n.d.). *The landholder's handbook: Johnstone Shire: living with world heritage*. Cairns: Wet Tropics Management Authority.
- Whiley, D., & Carter, B. (2002). *Motivations for the adoption of environmental practice in the Queensland tourism industry: A preliminary study*. Paper presented at the Presented at the 4th Queensland Environmental Conference, Brisbane, Queensland.
- Wight, P. A. (1993). Sustainable ecotourism: Balancing economic, environmental and social goals within an ethical framework. *The Journal of Tourism Studies*, 4(2), 54-66.
- Wight, P. A. (1997). Ecotourism accommodation: Does supply match the demand? *Tourism Management*, 18(4), 209-220.
- Williams, P. W. (1993). Environmental business practice: Ethical codes for tourism. In S. Hawkes & P. Williams (Eds.), *From principles to practice: A casebook of environmental best practice in tourism*. Burnaby: Simon Fraser University.
- Worboys, G., & De Lacy, T. (2003). *Tourism and the environment: It's time!* Paper presented at the Ecotourism Australia 11th National Conference, Adelaide, South Australia.
- Worboys, G., Lockwood, M., & De Lacy, T. (2001). *Protected area management: Principles and practice*. South Melbourne: Oxford University Press.
- World Tourism Organisation. (2004). Sustainable development of tourism: Conceptual definition. Retrieved 22 February 2005, from www.world-tourism.org/sustainable/concepts.htm
- World Tourism Organisation. (1993). *Sustainable tourism development: Guide for local planners*. Madrid: World Tourism Organisation.
- WWF-UK. (2000). Tourism certification: An analysis of Green Globe 21 and other tourism certification programmes [Electronic Version]. Retrieved 10 October 2006 from <http://wwf-uk.org/filelibrary/pdf/ter.pdf>.

Youth Hostels Australia. (2005). YHA's grading system. Retrieved 2 September 2005, from <http://www.yha.com.au/australia/standards.cfm>

APPENDIX A

SPECIALIST ACCOMMODATION STYLES

The specialist accommodation styles included in this study and discussed here are cabins, cottages and guesthouses, ecolodges, spas and retreats, bed and breakfasts, farmstays, caravan parks and camping grounds, houseboats, backpacker hostels and licensed public hotels.

Cabins, Cottages and Guesthouses

A cabin, cottage or guesthouse is a form of accommodation, usually small in size with some form of privacy provided. Cabins and cottages are usually separate small buildings detached from the main accommodation facility. In the United Kingdom, a guesthouse is a private hotel or a boarding house with a direct host-guest interaction similar to an extended family welcoming guests into the household (Morrison, 1996). A guesthouse is not a term most often used within Australia, rather a homestay style of accommodation would be comparable. The owner of the homestay establishment rents out any existing bedrooms for a nominal fee with breakfast often included in the price.

Within Australia, cabins and cottages have grown in number particularly in hinterland areas peripheral to major tourist destinations. For example in Queensland, the Gold Coast and Sunshine Coast Hinterlands and the Atherton Tableland have all observed an increase in this specialist style of accommodation for the getaway, romantic escapes and retreats. These styles of accommodation are based in nature-based areas with unique attractions or activities offered to the guests. Relatively little academic literature has examined the specialist accommodation style of cabins, cottages and guesthouses within Australia.

Ecolodges

Osland and Mackoy (2004) suggest ecolodges can be classed as a dedicated, casual, scientific or an agri-ecolodge defined by the environmental setting and the primary ecotourism activity that visitors engage in at the lodge. Generally, an ecolodge is a nature-dependent lodge that meets the philosophy and principles of ecotourism (Russell, Bottrill & Meredith, 1995, cited Osland & Mackoy, 2004). In their book, *International Ecolodge Guidelines*, Mehta, Baez and O'Loughlin (2002, p. 5) provide a framework for the design, development and operation of future ecolodges in order to “uphold the social and ecological integrity of their given environments, and thereby allow

for sustained benefits from ecotourism without damaging or destroying the very natural resources on which they depend”.

In defining an ecolodge as an accommodation facility, Mehta *et al* (2002, p.5) lists ten criteria. The general consensus for the three main principles of ecotourism is conservation of the environment; local community benefits and interpretation. At least five of the defining criteria must be satisfied and three of these must embody the main principles of ecotourism. The defining criteria for an ecolodge are:

1. Helps in the conservation of the surrounding flora and fauna.
2. Endeavours to work together with the local community.
3. Offers interpretative programs to educate both its employees and visitors about the surrounding natural and cultural environments.
4. Uses alternative, sustainable means of water acquisition and reduces water consumption.
5. Provides for careful handling and disposal of solid waste and sewage.
6. Meets its energy needs through passive design and renewable energy sources.
7. Uses traditional building technology and materials wherever possible and combine these with modern counterparts for greater sustainability.
8. Has minimal impact on the natural surroundings during construction.
9. Fits into its specific physical and cultural contexts through careful attention to form, landscaping and colour, as well as the use of vernacular architecture.
10. Contributes to sustainable local community development through education programs and research.

It can be summarised that an ecolodge is based in a natural setting and are not wholly designed for the ‘hard’ ecotourist as defined by Weaver and Lawton (2001) but can be for a variety of tourists seeking nature-based experiences. The literature tends to point towards the actual design of an accommodation facility conducive to the ecotourism sector that is more defining of an ecolodge. That is, the use of local materials, the employment of sustainable environmental and social practices, the vernacular appearance of the accommodation facility and its ‘blend’ with the local environment.

Spas and Retreats

Spa is defined in the Oxford Dictionary (2003, p. 797) as “a curative mineral spring; a resort with such a spring” and traditionally would have involved the use of thermal springs and climate. It is believed visiting spas was one of the earliest forms of tourism in Europe. Today, a spa may be defined within health tourism and involves ‘travel to specific locations for a complete spa experience’ (Van Sleipen, cited in Douglas, 2001) and as “the provision of health facilities utilising the natural resources of the country, in particular mineral water and climate” (IOUTO, 1973, cited Douglas, 2001). Often the complete spa treatment involves massages, detoxifying and exfoliation of the body for the purpose of stress management and relaxation. A retreat is “a place of shelter or seclusion” (Oxford Dictionary, 2003, p. 708), it is the actual accommodation that provides the spa and various other services and activities.

Health spas and retreats are a growing sector of the tourism industry where there is an interest in “new age” remedies and traditional remedial therapies (Tourism Queensland, 2005d). A study of the American health retreat and spa industry found the primary reason for visiting a spa was relaxation, followed by stress reduction and pampering (Yesawich, Pepperdine & Brown, 1999, cited Tourism Queensland, 2005d). There is currently no domestic statistical data or detailed industry information for the health and spa tourism industry in Australia (Tourism Queensland, 2005d). Douglas (2001) points out that the modern era of spa development in Australia began in the 1980’s with the Hyatt Regency Coolum opening in Queensland in 1989. This was the advent of the spa resort. By 2000, smaller retreats offering spa packages and ‘the ultimate getaway from busy city life’ began to expand (Douglas, 2001). Many of these are now located in environments such as hinterland areas with scenic backdrops and unique characteristics using natural fragrances and essences to invoke the soul and promote peacefulness through relaxation exercises including yoga and tai chi.

Bed and Breakfast Accommodation

A bed and breakfast (B&B) is defined by Dickman and Maddock (2000, p. 5) as a “small, privately owned establishment with a resident host and separate bedrooms and facilities for guests. Breakfast is included in the tariff”. As a general rule, B&B’s are considered to be small with less than ten rooms and include a variety of accommodation styles. According to the Australian Bed and Breakfast Council (ABBC) (1997), there are B&B homestay, B&B farmstay, B&B Inn, B&B

country house or inn, B&B cottages and even B&B apartments or suites within Australia. Table 2 below gives a brief explanation of the B&B styles as defined in Australia by the ABBC Members' Handbook.

Table A1.2: B&B Accommodation Types

<i>B&B Homestay</i>		<i>Small owner-occupied home accommodation – one to four rooms</i>
B&B Farmstay		Fully hosted rural accommodation, usually in the family farmhouse or in converted facilities such as shearers' quarters
B&B Inn		Small commercial accommodation (sometimes referred to a boutique accommodation) serving breakfast and dinner (often with a restaurant as part of the facilities)
B&B Country House or Country Inn		Commercial accommodation in rural or regional areas which serves breakfast and dinner (a restaurant open to the public may or may not be part of the business)
B&B Cottage		Self-catering accommodation which is generally self-contained (includes bathroom and cooking facilities). Breakfast may be served or guests may be provided with supplies which they can prepare themselves
B&B Apartments or Suites		Generally self-contained accommodation providing breakfast, sometimes room service, and a guest dining room

Source: Dickman and Maddock (2000)

In 2001, the ABBC updated their definitions of bed and breakfast. B&Bs may now be classed as one of two types. Traditional B&Bs serve breakfast and includes homestays, farmstays, inn, guesthouse and country house/ country retreat. Self catering B&Bs have breakfast provisions provided and include cottages and apartment/ suites (Hossain, 2004).

Lanier, Caples and Cook (2000, p.92) from the United States determine B&Bs are small independent accommodation establishments that are “primarily owner-operated, serve breakfast only and usually comprise less than 10 guest rooms”. Nuntsu, Tassiopoulos and Haydam (2004) examined the B&B market of Buffalo City, South Africa, and with similar results found B&B's to have three to four rooms, provided breakfast and amongst other facilities, a laundry service for guests, children are welcome and the provision of barbeque facilities were sought after at 94% of the establishments examined. Others have profiled the B&B industry in Arizona, United States where these establishments have grown by an estimated 700% between 1983 and 1993. The investigation by Vallen and Rande (1997) found B&B's generally comprised three to four rooms and on average had been operating for four to five years. Interestingly, Vallen and Rande revealed

a tremendous role B&B hosts play within the local community through recommendations to their guests of local restaurants and attractions.

Within Australia, the largest number of B&B operations is located in Victoria and New South Wales, although Tasmania for its restored historic homes, and South Australia for its wine areas, pioneered the development of B&B operations. In 1998, it was estimated there was approximately 5000 B&B establishments in Australia with about 80% of these located in country areas (Dickman & Maddock, 2000). According to the ABBC, homestays averaging three or four rooms and cottages were the most popular form of accommodation at this time. Slightly less than half of all B&B's had an Australian Automobile Association (AAA) quality rating of three to four stars. Tourism Queensland (2005a) considers the main target markets for the B&B sector are the empty nester, parents holidaying without children and young couples.

Farm Stays

Farm stays are accommodated on a working farm and give the visitor the opportunity to participate in the daily farm activities if they wish. This style of specialist accommodation gives guests the opportunity to have a unique rural experience and provide an economic alternative for farmers to supplement their income. A farmstay experience is considered a "total experience" allowing relaxation and a peaceful getaway in a country atmosphere (Tourism Queensland, 2005c). Nilsson (2002) proposes that farm tourism has its ideological roots in the romanticism of nature and social tourism. It is the interaction between the host's private life and the guests' experiences that emphasise the host/guest relation and as a subset of rural tourism, farm tourism accommodations are mostly small-scale enterprises with local roots based on local traditions.

Research of farm stay operations in Australia is limited within the academic literature. The potential benefits of farm stay tourism to Australia according to Tourism Queensland (2005c, p. 5) are:

- ✓ Economic diversification and revitalisation of rural communities;
- ✓ Cultural and social benefits to local communities;
- ✓ Employment opportunities as the sector expands;
- ✓ The development of a unique Australian tourism product; and
- ✓ The re-use of existing buildings.

- ✓ In general, farm stays appeal more to families with young children and empty nesters.

The 1998 Tourism Queensland Study on Farmstays and Bed and Breakfast Accommodation identified the friendliness of the host, the ease of access to other places, and the provision of interesting outdoor activities as factors that motivated guests to choose a farmstay accommodation establishment (Tourism Queensland, 2005c). Today, many farmstay operators offer additional activities including bushwalks, horse riding and fishing in addition to the option of participating in authentic daily farm tasks. There are also instances of farmers who once retired from farming practices are making use of their existing buildings and transforming these into accommodation quarters and communal cooking areas. This is not only a practical direction to take, but as well provides an opportunity to preserve the local heritage.

So where is the demarcation of farm tourism to tourism on farms? Busby and Rendle (2000, p. 640) feel the point of change occurs when “tourism revenue exceeds agriculture revenue, or once a farmer has adopted a tourism business plan”. Clarke (1996) claims it is when accommodation is divorced from the farm activity environment, whereas tourism on the farm involves the farm environment being the essence of the tourism product and there is an opportunity for the guest to participate in essential farm activities. Fleischer and Tchetchik (2005) who interviewed rural accommodation operators in Israel maintains the working farm does not hold any value for the visitor, and although it may seem the rural accommodation is divorced from the agricultural production, a farmer will still benefit from a working farm. Although visitors are exposed to the rural ambience during their recreational activities, comfortable accommodations and a variety of tourist activities on and around the farm are highly valued.

Similarly, Pearce (1990a) states that farm tourism in New Zealand is not a new enterprise, having beginnings within the notion of public relations between country and city residents, and then spread to, and is often dominated by the international traveller. His social situations analysis of farm tourism in New Zealand described the goals, cognitive structures, environmental setting, social rules and roles, communication and activity sequences present during these host-guest encounters at farm stay accommodations. Interviews with farm stay hosts in New Zealand emphasise financial motives are not the major goal of their hosting, rather social motives including the desire for interesting company and mental contributions from guests on financial matters, legal matters and education amongst other topics of interest (Pearce, 1990a; Opperman, 1998).

Others have indicated financial motives are of equal importance for farm stay operators (Weaver & Fennel, 1997; Opperman, 1998). Vacation farm sector operators in Saskatchewan examined by Weaver and Fennell (1997) showed prevailing financial motivations include income generation, the availability of spare bedrooms due to children leaving home, diversification of the farm and opportunities to access a market due to location and surrounding attractions. Pearce's (1990a, p. 351) study summarises the farmstay market by pointing out that "farms, farm families and the problems of living in the countryside represent a form of mundane reality which is interesting" to international visitors. Accommodation on farms by backpackers who take part in the Willing Workers on Organic Farms (WWOOF) should not be ignored either. In this case, travellers exchange food and accommodation for work on participating farms (Slaughter, 2004).

Caravan Parks and Camping Grounds

Caravan parks and commercial camping grounds provide affordable forms of accommodation for the self-drive traveller on a budget. Public camping grounds are usually located on crown land and managed by local government authorities and environmental protection agencies. Private caravan parks and commercial camping grounds are often located in destinations desirable by the self-drive tourist.

There are approximately 570 caravan parks in Queensland, Australia offering a range of accommodation styles including cabins, on-site caravans, powered and unpowered sites for caravans, motor homes and tents (Tourism Queensland, 2005). Statistics by Tourism Queensland (2005b) indicate for 2004, the average length of stay in a caravan park for domestic visitors was 5.6 nights and international visitors to Queensland averaged 10.9 nights in the year ended December 2004. These visitors staying at caravan and camping parks during 2004 accounted for 7% of the total domestic visitor nights spent in Queensland. Academic literature of caravan parks is mostly piecemeal. That is, caravan parks and camping grounds are often part of a study and rarely are the full focus of research. Mostly, the travellers staying at these styles of accommodation facilities are investigated and not the operator or operations of the park itself.

Recently, many caravan parks have realised the benefits of upgrading their park to include villas, cabins, and powered ensuite sites for caravans. Sadly, at the same time, there has been a decrease in the number of available caravan parks in prime locations due to the increased profits which can be made from redeveloping caravan park sites into multi-unit dwellings. However, those private

operators who are upgrading and expanding are in a win-win situation with less competition from other parks, and the increasing market presence of the 'grey nomad' and fly-drive tourist. Indeed, within Australia and New Zealand, there is a large market of international visitors who fly into the country and then hire a campervan or motor home allowing them to travel around at their own pace.

Mings (1997) study of 'snowbirds' (or grey nomads as labelled in Australia) in North Queensland noted a key difference in the caravan parks' infrastructure accommodating this segment of the market. In particular, Australian parks provide less recreational equipment/ facilities or recreational programs for long staying winter snowbirds. While a swimming pool and tropical landscaping were provided at the 41 parks sampled, additional facilities such as a games room, tennis court or television room were distinctly lacking as compared to North American van parks. Mings states this leads to decreased social interaction amongst this sector with snowbirds/ grey nomads leaving the park on daily jaunts to nearby attractions. Some parks do organise social BBQ's and morning teas, but this was certainly more regular and prevalent within the North American caravan park sector.

Houseboats

A houseboat is a vessel suitable for calm water cruising with accommodation, amenities and cooking facilities on board, essentially, it is available to live upon. Within the tourism industry, Pearce (1990) and Beeton (1998) class a houseboat as a suitable style of specialist accommodation. Academic research of houseboats *per se* within the tourism industry are relatively few, however Kokranikal and Morrison (2002) investigated the indigenous entrepreneurship of houseboat operators in Kerala, India. These authors found the houseboats to represent an innovative form of local entrepreneurship that is sustainable and supports local land-based industries, including small-scale tourism accommodation, local farmers with raw produce for sale and of course local craftsmen to build and furnish the houseboats. Concern is for the environmental impacts these houseboats may cause if they are not environmentally friendly and the risk of the increasing number of houseboats contributing to possible pollution of the waterways and the risk of oil spillages from the houseboats.

Backpacker Hostels

Tourism Research Australia (2005a, p.1) very simply defines a backpacker “as a traveller who spent one or more nights in backpacker/ hostel accommodation while travelling in Australia”. Backpacker accommodation or hostels are often perceived to be a budget priced style of accommodation providing beds for twin, 4, 6, or 8 bed (sometimes more) dormitories. Usually a communal kitchen is provided allowing guests to arrange their own meals with personal grocery purchases. Tourism Research Australia (2005a) identified an increase in backpacker/ hostel accommodation within Australia between the years 2000 – 2003. The greatest increase in bed capacity occurred in Queensland with almost 3000 more bed spaces made available during this time. The growth of the backpacker market has increased to become a notable segment of the tourism industry. In Australia, more than 800,000 international and domestic visitors spent at least one night in backpacker/ hostel accommodation during 2004 (Tourism Research Australia, 2005a). When looking at nights spent in regions of Australia, backpackers tend to have a much greater propensity to stay in regional Australia. In 2004, Tropical North Queensland was the second most popular region visited by international backpackers (Tourism Research Australia, 2005a).

Licensed Public Hotels

Academic research is scarce with regard to licensed public hotels (pubs), within Australia. Although a mainstay of many rural and regional towns and often the only business still operating in many towns of Australia since the early 1900’s, literature regarding the social and economic potential of pubs and their contribution to the tourism industry is limited. The *Hotel Proprietor Act (1956)* of the UK states a hotel is “an establishment held by the proprietor as offering food, drink, and if so required, sleeping accommodation, without special contract, to any traveller presenting himself who appears willing and ready to pay a reasonable sum for the service provided and who is in a fit state to be received” (Morrison, 1996, p. 73).

Australian licensed public hotels are unique in character. These establishments in the past have filled the void of the visitor information centre often directing travellers to other destinations and local resident addresses. The social fabric of a public hotel is unlike any other tourism accommodation facility, and acts as a community meeting place on more than one occasion. In the past and still to this day, many pubs offer accommodation, food, beverages and entertainment to local community members and visitors. Architecturally, many of the older hotels more than 50

years of age have been recognised by governmental heritage acts and are undergoing restorations to retain their original splendour and distinctive character.

APPENDIX B

VOLUNTARY LAND AGREEMENTS

Nature Refuges

A nature refuge is a voluntary conservation agreement between a landholder and the Queensland Parks and Wildlife Service (QPWS) enabled as a category of protected area under the *Nature Conservation Act 1992*. Each agreement is tailored to suit the management needs of the particular area and the needs of the landholder (Environmental Protection Agency, 2004). The QPWS will remain in contact with the landholder once a nature refuge is declared to provide advice and assistance with ongoing management of the area, including specialist advice on flora and fauna identification and the control of pest plants and animals. A landholder may enter a nature refuge conservation agreement with the agreement expiring after a set period of time or a perpetual agreement can be attached to the land title and bind successive owners of the land.

A nature refuge can cover part or all of a property protecting wildlife and wildlife habitat and emphasising the conservation of biodiversity as an important part of property management. More than 161 landholders across Queensland manage nature refuges on their properties protecting rare and threatened ecosystems, plants and animals, while maintaining and enhancing property enterprises as diverse as grazing, cropping, horticulture and ecotourism (www.epa.qld.gov.au/nature_conservation/nature_refuges/). Within the Wet Tropics bioregion of North Queensland, over 6000 hectares are protected by 35 nature refuges (Environmental Protection Agency, 2005b). Financial incentives are available to the landholder once a conservation agreement is finalised, whereby the EPA will reimburse the landholder for the land tax payable on the property, or on a pro rata basis if the Conservation Agreement is over part of the land. Purchasers of land after the 1 July 2003 who enter into a conservation agreement with the EPA are also eligible for a reimbursement of the transfer duty paid on the purchase of the land.

Land for Wildlife

Land for Wildlife is a free, voluntary non-binding conservation program, which aims to encourage and assist private landholders to conserve habitat for wildlife on their property. Recently, the coordination of the Land for Wildlife program was handed over to Greening Australia Queensland from the Queensland Parks and Wildlife Service, and is jointly managed by participating councils and community organisations (Environmental Protection Agency, 2004). Advice and assistance, a

regular newsletter and information sharing within a network of landholders managing wildlife habitat on their properties is available. Qualified Land for Wildlife Extension Officers can provide advice on:

- How wildlife habitat can be integrated with other uses of private land to the benefit of the landholder;
- The management of wildlife habitat, the fauna and flora found in the area and its ecological role and needs; and
- Assistance and incentives available to landholders.

In Queensland, there are more than 2600 properties registered with 'Land for Wildlife' covering more than 290,000 hectares of retained habitat. North of Townsville there are 184 registered properties covering more than 112,000 hectares of total terrestrial habitat. As at April 2003, there were 154 'Land for Wildlife' properties equalling 1987 hectares in the Wet Tropics region of Far North Queensland (personal comm. Martin O'Malley, Principal Conservation Officer, Community Nature Conservation, Environmental Protection Agency, 7 May 2004).

Cooperative Management Agreements

In Queensland, a Cooperative Management Agreement (CMA) is held between a private landholder and the Wet Tropics Management Authority (WTMA). WTMA may offer financial incentives and management advice as part of the agreement, and other expert advice may be supplied regarding management or activities such as vegetation audits or cultural audits (personal comm. Campbell Clarke, Principal Planning Officer, WTMA, 30 April 2004). CMA's are designed to ensure that activities on private land neighbouring the WTWHA are sympathetic with maintaining important habitat and afford protection for wildlife. These are actively canvassed with landholders, Aboriginal peoples and other parties both within and adjoining the Wet Tropics World Heritage Area (Wet Tropics Management Authority, 2004, p. 17). As at April 2004, there were 38 existing Conservation Management Agreements covering almost 135 hectares in the Wet Tropics. About 11 of these CMAs have expiry dates of 5, 10 or 20 years; others are labelled as ongoing or in perpetuity. Nearly all of these CMAs have been undertaken since the *Wet Tropics Management Plan* was established in 1998 (personal comm. Campbell Clarke, Principal Planning Officer, WTMA, 30 April 2004). Table 3 provides a summary of conservation agreements and their characteristics from the *Wet Tropics Conservation Strategy* (2004).

APPENDIX C



Office Use Only:

Survey No:

SPECIALIST ACCOMMODATION OPERATION SURVEY

Dear Owner/Operator,

I am a PhD research student at James Cook University within the Tourism program located in Cairns. As part of my project I am **investigating the characteristics of the specialist accommodation operations sector** near protected areas in North Queensland. A specialist accommodation operation is defined for the purposes of this research as that having: (1) personal interaction between the guests and owner hosts; (2) provides a special opportunity or advantage for guests afforded by the location, physical structure, or services offered; (3) there are special activities offered to guests; (4) it is owner operated; and (5) there is small guest accommodation capacity (generally less than 25 rooms). I have selected your accommodation operation from marketing brochures, a website or listing with a tourism association or group.

I will be extremely grateful if you will assist me by filling in this questionnaire with information about your accommodation operation. Please note that participation in this survey is entirely voluntary and **all survey participants will remain anonymous**. A reply-paid envelope is attached to return the completed survey for your convenience. Your contribution to the project is valuable. Please do not think the size of your accommodation operation is too small to participate.

The questionnaire will take about 20 minutes to complete. The information you provide will enhance the understanding of specialist accommodation operations and create an awareness of ecologically sustainable management practices in use. An understanding of people's environmental concern is important for the development of environmental management techniques for sustainable tourism.

Thank you in advance for your participation. If you require any more information about this study or you are interested in the results, please contact any of the persons listed below.

Project Co-ordinator

Julie Carmody
School of Business – Tourism Program
PO Box 6811
Cairns QLD 4870
Telephone: (07) 40 421496
Email: julie.carmody@jcu.edu.au

Student Supervisor

Dr Heather Zeppel
School of Business – Tourism Program
PO Box 6811
Cairns QLD 4870
Telephone: (07) 40 421446
Email: heather.zeppel@jcu.edu.au

Ethics Administrator

Tina Langford
Research Office
James Cook University
Townsville QLD 4811
Telephone: (07) 47 814342
Fax: (07) 47 815521
Email: tina.langford@jcu.edu.au

SECTION A BACKGROUND INFORMATION ON YOUR BUSINESS

The following section asks you for some information **about your specialist accommodation operation.**

<p>1. What style of accommodation is your operation? <i>(Please tick all that apply)</i></p>	<p><input type="checkbox"/> Ecolodge <input type="checkbox"/> Retreat <input type="checkbox"/> Spa <input type="checkbox"/> Bed & Breakfast <input type="checkbox"/> Farm Stay <input type="checkbox"/> Guest House <input type="checkbox"/> Cottage <input type="checkbox"/> Caravan Park <input type="checkbox"/> Camping sites <input type="checkbox"/> Cabins <input type="checkbox"/> Public Hotel (Licensed) <input type="checkbox"/> Backpackers/ Hostel <input type="checkbox"/> Houseboat <input type="checkbox"/> Other <i>(please state)</i></p>
<p>2. For how many years has your accommodation business been operating?</p>	
<p>3. Is the accommodation operation a family business?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>4. How many guest rooms does your accommodation operation have?</p>	
<p>5. Which town is nearest to your accommodation operation?</p>	
<p>6. Which local council shire jurisdiction is your operation located within?</p>	
<p>7. Does your property neighbour on the boundary of a terrestrial protected area?</p>	<p><input type="checkbox"/> Yes <i>(Go to Question 8)</i> <input type="checkbox"/> No <i>(Go to Question 9)</i></p>
<p>8. If yes, what type of protected area/s do you neighbour? <i>(You may choose more than one response if appropriate)</i></p>	<p><input type="checkbox"/> Wet Tropics World Heritage Area <input type="checkbox"/> National Park <input type="checkbox"/> State Forest <input type="checkbox"/> Other <i>(please state)</i></p>
<p>9. Is your property located within 50 kilometres of a terrestrial (land) protected area/s?</p>	<p><input type="checkbox"/> Yes <i>(Go to Question 10)</i> <input type="checkbox"/> No <i>(Go to Question 11)</i></p>
<p>10. If yes, what type of protected area/s are you close to? <i>(You may choose more than one response if appropriate)</i></p>	<p><input type="checkbox"/> Wet Tropics World Heritage Area <input type="checkbox"/> National Park <input type="checkbox"/> State Forest <input type="checkbox"/> Other <i>(please state)</i></p>
<p>11. Does your accommodation operation property have any of these voluntary land agreements in place? <i>(You may choose more than one response if appropriate)</i></p>	<p><input type="checkbox"/> Land for Wildlife <input type="checkbox"/> Nature Refuge <input type="checkbox"/> Conservation Management Agreement <input type="checkbox"/> Conservation Covenant <input type="checkbox"/> Commonwealth Conservation Agreement <input type="checkbox"/> No voluntary land agreements</p>
<p>12. Which type of service does your accommodation operation provide? <i>(You may choose more than one response if appropriate)</i></p>	<p><input type="checkbox"/> Self-contained <input type="checkbox"/> Bed & Breakfast <input type="checkbox"/> Meals with the host <input type="checkbox"/> Share cooking facilities</p>

	<input type="checkbox"/> Meals included <input type="checkbox"/> Other (<i>please state</i>)
13. Do you have any intention to expand the size of your accommodation operation within the next 5 years?	<input type="checkbox"/> Yes (<i>please state how</i>) <input type="checkbox"/> No
14. Please indicate all activities that are offered to guests at your accommodation operation? <u>Do not</u> include activities booked by you with other tourism operations for the guest. (<i>You may choose more than one response if appropriate</i>)	<input type="checkbox"/> Native wildlife viewing <input type="checkbox"/> Bird watching <input type="checkbox"/> Tree planting <input type="checkbox"/> Bush walking/ Walking tracks <input type="checkbox"/> Swimming <input type="checkbox"/> Canoeing/ Kayaking <input type="checkbox"/> Massage/ Skin treatments/ Personal care <input type="checkbox"/> Fishing <input type="checkbox"/> Cookery <input type="checkbox"/> Horse riding <input type="checkbox"/> Farm animal feeding <input type="checkbox"/> Motorised bike riding (incl. ATV/Quad bikes) <input type="checkbox"/> Bicycle riding <input type="checkbox"/> Relaxation/ reading <input type="checkbox"/> Spotighting <input type="checkbox"/> Guided nature tour <input type="checkbox"/> Other (<i>please state</i>)
15. On what land areas do your activities for guests take place? (<i>You may choose more than one response if appropriate</i>)	<input type="checkbox"/> Private Freehold Land <input type="checkbox"/> Wet Tropics World Heritage Area <input type="checkbox"/> National Park <input type="checkbox"/> State Forest <input type="checkbox"/> Shire Council land <input type="checkbox"/> Lake (<i>please state which one/s</i>) <input type="checkbox"/> River (<i>please state which one/s</i>) <input type="checkbox"/> Other (<i>please state</i>)
16. Is your business a member of an accommodation or tourism association? (<i>You may choose more than one response if appropriate</i>)	<input type="checkbox"/> Australian Hotels Association <input type="checkbox"/> Bed & Breakfast & Farmstay Association of FNQ <input type="checkbox"/> Caravan Parks Association of Queensland Inc. <input type="checkbox"/> Atherton Tablelands Accommodation Group <input type="checkbox"/> Port Douglas Daintree Tourism Association <input type="checkbox"/> Daintree Village Tourism Association <input type="checkbox"/> Daintree Cape Tribulation Tourism Association <input type="checkbox"/> Tourism Tropical North Queensland <input type="checkbox"/> Tropical Tablelands Tourism <input type="checkbox"/> Mission Beach Tourism <input type="checkbox"/> Ecotourism Australia <input type="checkbox"/> Wildlife Tourism Australia <input type="checkbox"/> NOT a member of any association <input type="checkbox"/> Other (<i>please state</i>)

SECTION B OWNER/OPERATOR BACKGROUND INFORMATION

The following section asks you for information **about yourself**.

17. What is your role within the accommodation operation?	<input type="checkbox"/> Owner <input type="checkbox"/> Manager <input type="checkbox"/> Owner/ Operator <input type="checkbox"/> Caretaker <input type="checkbox"/> Other (<i>please state</i>)
18. What is the highest level of formal education you have completed so far?	<input type="checkbox"/> Primary <input type="checkbox"/> Secondary (Year 10/Junior) <input type="checkbox"/> Secondary (Year 12/Senior) <input type="checkbox"/> Trade Certificate <input type="checkbox"/> Associate Diploma <input type="checkbox"/> Tertiary (Undergraduate degree) <input type="checkbox"/> Tertiary (Postgraduate degree) <input type="checkbox"/> Other (<i>please state</i>)
19. What was your main occupation before being involved with this specialist accommodation business?	
20. What was the primary reason for you to move into the business of a specialist accommodation operation?	
21. Who do you operate this accommodation operation with ? (<i>You may choose more than one response if appropriate</i>)	<input type="checkbox"/> By myself <input type="checkbox"/> With wife/ husband/ partner <input type="checkbox"/> With immediate family <input type="checkbox"/> With other family members/ relatives <input type="checkbox"/> With friend/s <input type="checkbox"/> With colleagues <input type="checkbox"/> Other (<i>please state</i>)
22. For how many years have you operated this specialist accommodation business ?	
23. What is your age ?	
24. What is your gender ?	<input type="checkbox"/> Male <input type="checkbox"/> Female
25. Are you currently a member of any environmental or conservation-orientated groups?	<input type="checkbox"/> Yes (<i>If yes, please state which ones</i>) _____ <input type="checkbox"/> No
26. Do you subscribe to any environmental or conservation-oriented magazines?	<input type="checkbox"/> Yes (<i>If yes, please state which ones</i>) _____ <input type="checkbox"/> No
27. Does your specialist accommodation business support any environmental or conservation-orientated groups?	<input type="checkbox"/> Yes (<i>If yes, please state which ones</i>) _____ <input type="checkbox"/> No

SECTION C**ENVIRONMENTAL CERTIFICATION**

The following section asks for information **about environmental certification of your specialist accommodation?**

<p>28. Does your accommodation operation have ecotourism certification?</p>	<p><input type="checkbox"/> NO ecotourism certification (<i>Go to Question 30</i>)</p> <p><input type="checkbox"/> AAA Tourism Green Stars</p> <p><input type="checkbox"/> NEAP – Nature Tourism</p> <p><input type="checkbox"/> NEAP – Ecotourism</p> <p><input type="checkbox"/> NEAP – Advanced Ecotourism</p> <p><input type="checkbox"/> Other (<i>please state</i>)</p>
<p>29. In which year did your accommodation operation receive ecotourism certification?</p>	<p>(<i>Go to Question 31</i>)</p>
<p>30. If your accommodation operation does not have ecotourism certification, are you planning on achieving this within the next 12 months?</p>	<p><input type="checkbox"/> Yes (<i>If yes, please state which level of certification</i>) _____</p> <p><input type="checkbox"/> No (<i>Go to Question 32</i>)</p>
<p>31. What are/were your main reasons for seeking ecotourism certification for your accommodation operation?</p> <p>(<i>Choose as many responses as is applicable</i>)</p>	<p><input type="checkbox"/> Permit requirement</p> <p><input type="checkbox"/> Council requirement</p> <p><input type="checkbox"/> Better environmental management</p> <p><input type="checkbox"/> Marketing an environmentally friendly business</p> <p><input type="checkbox"/> Other (<i>please state</i>)</p>
<p>32. If your accommodation operation does not have ecotourism certification of any kind, is there a particular reason why you have not considered this procedure?</p> <p>(<i>Choose as many responses as is applicable</i>)</p>	<p><input type="checkbox"/> Cost of application</p> <p><input type="checkbox"/> Time required</p> <p><input type="checkbox"/> Feel it is not necessary</p> <p><input type="checkbox"/> Do not consider certification is beneficial to my operation</p> <p><input type="checkbox"/> Do not know about ecotourism certification</p> <p><input type="checkbox"/> No reason</p> <p><input type="checkbox"/> Other reason (<i>please state</i>)</p>
<p>33. Do you adhere to any tourism industry ‘codes of conduct’ or ‘codes of practice’ for your specialist accommodation operation?</p>	<p><input type="checkbox"/> Yes (<i>If yes, please state which code</i>) _____</p> <p><input type="checkbox"/> No</p>
<p>34. Do you adhere to any voluntary environmental ‘codes of conduct’ or ‘codes of practice’ for your specialist accommodation?</p>	<p><input type="checkbox"/> NO (<i>Go to Question 36</i>)</p> <p><input type="checkbox"/> Council regulations</p> <p><input type="checkbox"/> Wet Tropics Management Authority</p> <p><input type="checkbox"/> Environmental Protection Agency</p> <p><input type="checkbox"/> Queensland Parks and Wildlife Service</p> <p><input type="checkbox"/> Other (<i>please state</i>)</p>
<p>35. What are your main reasons for adopting voluntary environmental ‘codes of conduct’ for your specialist accommodation?</p> <p>(<i>Choose as many responses as is applicable</i>)</p>	<p><input type="checkbox"/> Cost savings</p> <p><input type="checkbox"/> Better environmental management</p> <p><input type="checkbox"/> Comply with environmental legislation</p> <p><input type="checkbox"/> Personal concern for the environment</p> <p><input type="checkbox"/> Other reason (<i>please state</i>)</p>
<p>36. Do you conduct regular environmental audits of your specialist accommodation business?</p>	<p><input type="checkbox"/> Yes, I conduct regular environmental audits myself</p> <p><input type="checkbox"/> Yes, I have an external party conduct regular environmental audits</p> <p><input type="checkbox"/> No, I do not conduct environmental audits</p>

SECTION D ENVIRONMENTAL MANAGEMENT TECHNIQUES

The following section asks you for some **information about environmental management techniques in use at your specialist accommodation business.**

Please tick if you do (**YES**) or do not (**NO**) use any of the following environmental management techniques. If you **intend to implement a technique** within the next 12 months, please tick the **INTEND** column. The **COMMENTS** column is provided for you to elaborate on any of the environmental management techniques.

Do you practice any of the following environmental management techniques?

TECHNIQUE	YES	NO	INTEND	COMMENTS
Sustainable Natural Resources – Does your accommodation operation...				
Water				
Dual flush toilets				
Low flow shower heads				
Rainwater collection tanks				
Tap aerators				
Solar hot water system				
Drip system for garden irrigation				
Provide showers only				
Other (<i>please state</i>)				
Energy Use				
Solar power				
Wind turbines				
Cogeneration (process of combined heat and water generation)				
Hydroelectric power				
Energy efficient light bulbs				
Use diesel or ethanol blend fuel				
Use ceiling fans only and not air conditioners				
Other (<i>please state</i>)				
Liquid Waste				
Sewage treated for reuse (e.g. Effluent irrigation)				
Reuse or recycle grey water				
Composting toilets				
Other (<i>please state</i>)				
Waste Management				
Separate recyclable waste				
Compost organic matter				
Purchase goods in bulk where possible				
Purchase goods in recyclable packaging				
Actively practice the slogan: “Reduce, Reuse, Recycle”				
Other (<i>please state</i>)				

Do you have any other comments about sustainable use of natural resources by accommodation operators?

TECHNIQUE	YES	NO	INTEND	COMMENTS
Sustainable Natural Resources – Does your accommodation operation...				
<i>Sustainable Design</i>				
Benefit the use of natural light				
Benefit the use of natural ventilation				
Landscaping reflects the surrounding natural environment				
Locally sourced building materials were used in the construction of the accommodation facility				
Recycled building materials were used in the construction				
Other				
<i>Sustainable Practices</i>				
Purchase local goods and services				
Grow own fruit & vegetables for personal and guest consumption				
Practice permaculture				
Practice organic gardening				
Regularly mulch gardens				
Educate guests about conservation & sustainable practices				
Monitor native wildlife for changes or impacts				
Monitor native vegetation for changes or impacts				
Monitor feral weeds or animals for impacts				
Involve guests in conservation initiatives (e.g. Tree planting)				
Report any environmental changes to the relevant authorities				
Supply recycle collection bins in guest accommodation				
Employ local residents in any aspect of your business				
Involve local or indigenous communities in your business				
Use non-chemical cleaning products e.g. vinegar, bi-carb soda, 'Enjo' cloths				
Use bio-degradable cleaning products				
Other				

Do you have any other comments about environmental practices of accommodation operators?

SECTION E ENVIRONMENTAL CONCERN

The following section is to **assess your concern for, and attitude towards the natural environment**. Please circle the extent to which you agree or disagree with the following statements.

<i>Statements</i>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. We are approaching the limit of the number of people the Earth can support.	1	2	3	4	5
2. Humans have the right to modify the natural environment to suit their needs.	1	2	3	4	5
3. When humans interfere with nature it often produces disastrous consequences.	1	2	3	4	5
4. Human ingenuity will ensure that we do not make the Earth unlivable.	1	2	3	4	5
5. Humans are severely abusing the environment.	1	2	3	4	5
6. The earth has plenty of natural resources if we just learn how to develop them.	1	2	3	4	5
7. Plants and animals have as much right as humans to exist.	1	2	3	4	5
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	1	2	3	4	5
9. Despite our special abilities humans are still subject to the laws of nature.	1	2	3	4	5
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.	1	2	3	4	5
11. The earth is like a spaceship with very limited room and resources.	1	2	3	4	5
12. Humans were meant to rule over the rest of nature.	1	2	3	4	5
13. The balance of nature is very delicate and easily upset.	1	2	3	4	5
14. Humans will eventually learn enough about how nature works to be able to control it.	1	2	3	4	5
15. If things continue on their present course we will soon experience a major ecological catastrophe.	1	2	3	4	5
16. Natural resources should be used primarily for the benefit of the present generation.	1	2	3	4	5
17. Recycling and waste management should be improved to reduce resource use.	1	2	3	4	5
18. The world's natural environment is sufficiently protected.	1	2	3	4	5
19. People should grow much of what they need in order to become more self-sufficient.	1	2	3	4	5
20. The environment should be changed to meet people's needs.	1	2	3	4	5

APPENDIX D

Specialist Accommodation Operator Interview

Date: _____

Accommodation Operation: _____

Interviewee & Position Held:

-
1. History to the specialist accommodation operation?

 2. What environmental management practices have been implemented?

 3. Have there been any barriers to implementing currently used environmental management practices?

 4. Do you have intentions to implement any future environmental management practices?

 5. Are there barriers to any planned future environmental management practices?

APPENDIX E

Atherton Shire
Source: Wet Tropics Management Authority
(2006)

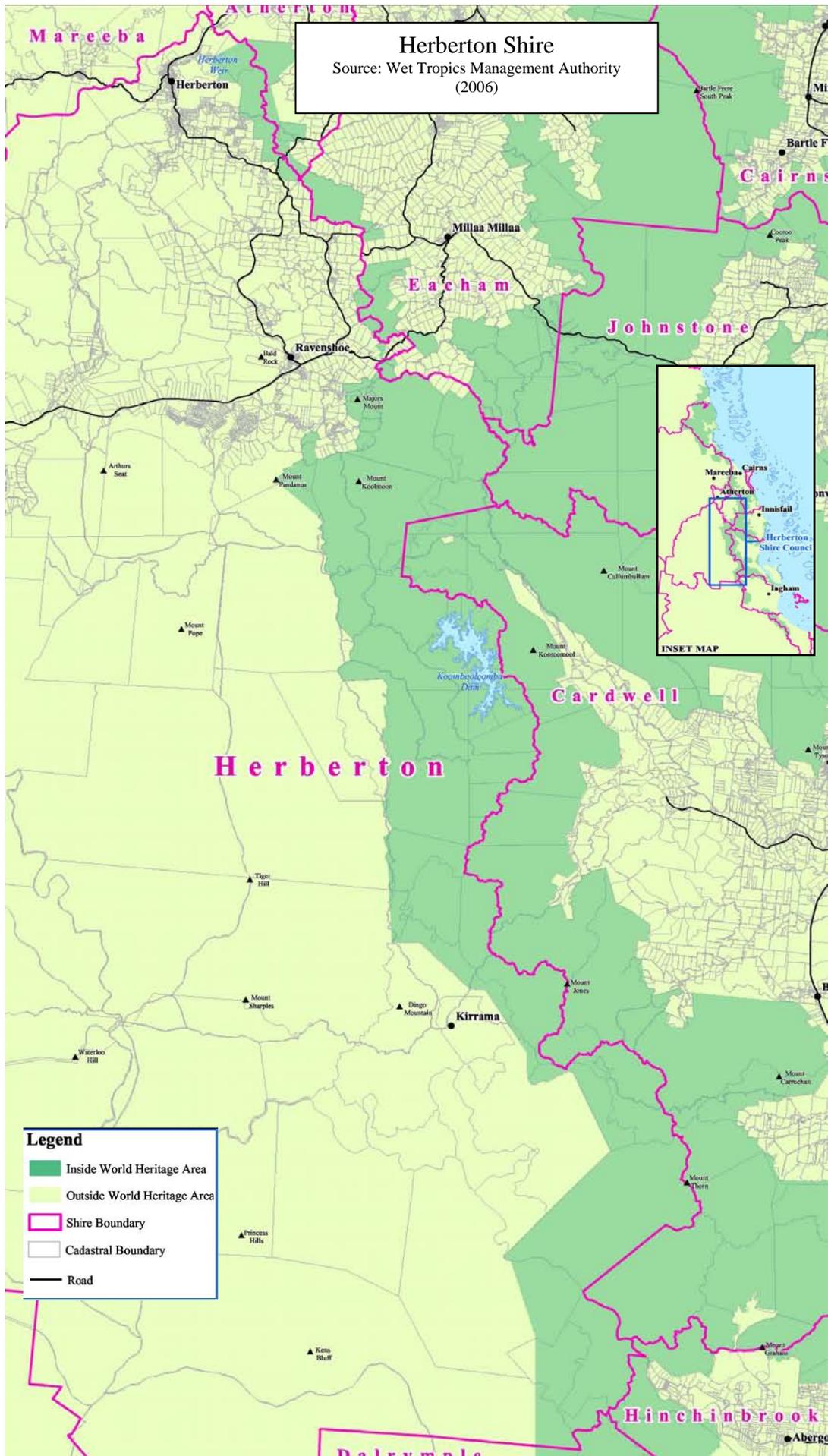


Legend

- Inside World Heritage Area
- Outside World Heritage Area
- Shire Boundary
- Cadastral Boundary
- Road













APPENDIX F



Office Use Only:

Survey No:

TOURISM ASSOCIATION SURVEY

Dear Association President and Committee,

I am a PhD research student at James Cook University within the Tourism program located in Cairns. As part of my research I am **examining the tourism associations with specialist accommodation members** in North Queensland. I have already surveyed and interviewed a number of specialist accommodation operators and I would now like to collect information from a tourism association perspective. A specialist accommodation operation is defined for the purposes of this research as that having: (1) personal interaction between the guests and owner hosts; (2) provides a special opportunity or advantage for guests afforded by the location, physical structure, or services offered; (3) there are special activities offered to guests; (4) it is owner operated; and (5) there is small guest accommodation capacity (generally less than 25 rooms). Examples of this style of accommodation are bed & breakfasts, farm stays, cabins, cottages, caravan parks and home stays.

I will be extremely grateful if you will fill in this **brief questionnaire with information about your tourism association** to assist my research. The questionnaire will take about 10 minutes to complete. Your contribution to the project is valuable. The information you provide will enhance the understanding of the specialist accommodation sector in North Queensland. Please note that participation in this survey is voluntary and **all survey participants will remain anonymous.**

Thank you in advance for your assistance. If you require any more information about this study or you are interested in the results, please contact any of the persons listed below. The James Cook University Human Ethics Approval Number for this research is H1704.

Project Coordinator

Julie Carmody

School of Business – Tourism Program

PO Box 6811

Cairns QLD 4870

Telephone: (07) 40 421496

Email: julie.carmody@jcu.edu.au

Student Supervisor

Dr Heather Zeppel

School of Business – Tourism Program

PO Box 6811

Cairns QLD 4870

Telephone: (07) 40 421446

Email: heather.zeppel@jcu.edu.au

Ethics Administrator

Tina Langford

Research Office

James Cook University

Townsville QLD 4811

Telephone: (07) 47 814342

Fax: (07) 47 815521

Email: tina.langford@jcu.edu.au

1. Please indicate the **total membership** size of your tourism association?
 - 0 – 20 members
 - 21 – 50 members
 - 51 – 80 members
 - 81 – 100 members
 - more than 100 members

2. Please indicate the **purpose** of your tourism association?
 - Collective marketing
 - Policy advice
 - Representation
 - Social networks
 - Environmental protection
 - Other (*Please explain*)

3. Does your tourism association have an **environmental policy**?
 - No
 - Under consideration
 - Yes (*please explain parameters of policy or attach separately*)

4. Does your tourism association have its own **environmental code-of-conduct** to help guide members' tourism operations?
 - No
 - Under consideration
 - Yes (*please explain parameters of code or attach separately*)

5. Do you **recommend any environmental best practice** measures to your tourism association members from another association or group?
 - No
 - Under consideration
 - Yes (*please explain parameters of best practice or attach separately*)

6. Does your association offer its members any **environmental awards** to encourage best practice environmental management?
 - No
 - Under consideration
 - Yes (*please explain*)

APPENDIX G

Local Council Shire Interview

Date: _____

Council: _____

Interviewee & Position held:

1. Is the council aware of the specialist accommodation sector in the Shire?

2. Are you aware of/ considered any impacts (direct, indirect or cumulative) of SAOs near protected areas?

3. Have the benefits or costs (economic, environmental, social) of SAOs near protected areas in your Shire been previously considered?

4. Does the council recommend/ advocate any environmental management practices (eg. low flow shower heads, solar, rainwater tanks, grey water reuse, energy efficient light bulbs) to tourism accommodations at present?

5. Is there an environmental code of conduct for tourism accommodations in the Shire?

6. If not, would the council consider an environmental code of conduct for accommodation operators?

7. Does the council support specialist accommodation operators in the Shire in any way (eg. financial, environmental advice, marketing)?

8. Are there sustainable building design principles for new tourism accommodation in the Shire?

9. Are permits/ licenses required to operate a SAO in the Shire?

10. Has the council considered environmental certification of the community (eg Green Globe 21)?

11. Has the council considered encouraging environmental certification for tourism businesses in the Shire (eg. NEAP)?

12. Has the council considered encouraging voluntary conservation agreements (eg. Land for Wildlife, Nature Refuges, Conservation Management Agreements) for private landholders in the Shire to protect ecological biodiversity?

13. Is there a recent Shire corporate plan completed or in process?

14. If there is a corporate plan are tourism accommodations near protected areas considered?

15. Are environmental codes of conduct for tourism operations accounted?

16. Are you aware that none of your Shire local laws for accommodation do not include basic environmental management conditions?

APPENDIX H

Environmental Agency Interview

Date: _____

Agency: _____

Interviewee & Position held:

-
1. Is the agency aware of the specialist accommodation sector?

 2. Are there benefits or costs (economic, environmental, social) for SAOs located near protected areas?

 3. Are any impacts (direct, indirect or cumulative) of SAOs near protected areas considered in strategic documents?

 4. Does the agency recommend/ advocate any environmental management practices (eg. low flow shower heads, solar, rainwater tanks, grey water reuse) to tourism accommodations at present?

 5. Is there an environmental code of conduct for tourism accommodations put forward by the agency?

 6. If not, would the agency consider an environmental code of conduct for accommodation operators?

 7. Does the agency offer support to specialist accommodation operators neighbouring the protected area (eg. financial, environmental advice, marketing)?

8. Are sustainable building design principles for new tourism accommodations recommended by the agency?

9. Are permits/ licenses required to operate a SAO neighbouring the protected area?

10. Does the agency encourage environmental certification for tourism accommodation businesses located near the protected area (eg. NEAP)?

11. Does the agency encourage voluntary conservation agreements (eg. Land for Wildlife, Nature Refuges, Conservation Management Agreements) for private landholders located near protected areas to protect ecological biodiversity?