TABLES

FIGURES

ABSTRACT

Tourism is one of the largest industries in Cairns. Situated at the coast of tropical North Queensland, the region experiences several tropical cyclones every year. Tourists, especially backpackers are considered to be relatively vulnerable to the impacts of these natural disasters.

The purpose of this study was to investigate the cyclone awareness and preparedness amongst backpacker accommodation providers and backpackers in Cairns. The main aim of the project was to make a positive contribution to natural disaster preparedness, awareness and safety amongst backpacker accommodation providers and backpackers. This paper reports that the backpacker community is reasonably vulnerable to the impacts of tropical cyclones since their concern about cyclones as well as their level of awareness and preparedness is relatively low. This is mainly due to the lack of previous experience of cyclones as well as the lack of efficient information about this natural disaster. In regards to the accommodation providers, it was found that although they have had considerable experience with cyclones, their awareness and perception of risk was relatively low. However, there was a general interest in receiving assistance in the improvement of the current cyclone safety situation.

Recommendations include ensuring an improvement of the cyclone information system for the backpackers, as well as the accommodation providers, and the establishment of a documented Cyclone Safety Emergency Plan for the backpacker accommodation providers in Cairns.

ACKNOWLEDGEMENTS

The author would like to thank the staff of the Centre for Disaster Studies, James Cook University of North Queensland for their assistance with this project. Special thanks for my supervisor Dr David King, for the advice, direction and support with the survey. Very much assistance was provided by Scott Cunliffe and Linda Berry, who offered help with the survey design, the data analysis and the project report. I also like to thank the Cairns City Council, in particular, Geoff Reynolds (Executive Director, Cairns Local Government Counter Disaster Committee), Jeff Wilson (Senior Environmental Health Officer, CCC) and Geoff Mustard (Planner, CCC). Further thanks go to the backpacker accommodation providers who so willingly gave their time to participate in this project. I also would like to thank all the backpackers who participated in the survey.

1 INTRODUCTION

The purpose of this report is to present the results of the investigation of cyclone awareness and preparedness amongst backpacker accommodation providers and backpackers in Cairns, North Queensland, Australia. The aim of the study was to make a positive contribution to natural disaster preparedness, awareness and safety amongst accommodation providers and backpackers in Cairns. Particularly, their previous experience with tropical cyclones, their general knowledge and awareness, their preparedness and perceptions of risk were investigated. The information for this report was gathered through a social survey with the use of two questionnaires, one for the accommodation providers, and one for the backpackers. Altogether, 21 accommodation providers and 158 backpackers were included in the survey.

Cairns is one of the major tourist destinations in Queensland, with a high percentage of backpacker visitors. Situated in the tropical North of Australia and therefore in a cyclone prone area, Cairns has experienced more cyclones in the last four years than in the preceding thirty years. There has been a considerable amount of research done about the community vulnerability in Cairns. However, only very little research has been done about visitor including backpacker vulnerability. These communities are expected to be especially exposed to natural disasters. Amongst other things, their vulnerability is depending upon the preparedness and the safety status of the accommodation providers.

Generally, the aims of the study were achieved. It was possible to identify that although most of the accommodation providers already had some previous cyclone experience, their awareness, preparedness and perception of risk was not as high as expected. Their level of preparedness and safety is therefore to be further improved. However, the respondents showed a relatively high interest in improvement of the cyclone safety situation and in receiving some assistance by the CLGCDC (Cairns Local Government Counter Disaster Committee).

In regards to the backpackers, they generally showed a very low cyclone awareness. Concerning their perception of risk, there was an equal split amongst respondents who stated they would like to witness a cyclone, people who would rather leave the area in case of a cyclone, and people who would seek more information before making a decision. This indicates that there is possibly no clear idea what to do. It became obvious that there is a lack of information about cyclones. They generally tend to rely on local residents who themselves are considered to be not very cyclone aware. The backpacker community must therefore be considered as extremely vulnerable. There is the significant need in improving the natural disaster information system in order to increase the backpackers 'cyclone awareness and therefore to diminish their vulnerability.

2 LITERATURE REVIEW

Hazard, risk and disaster

During the past two decades, natural disasters have been world-wide responsible for about 3 million deaths and have adversely affected at least 800 million people through homelessness, disease, serious economic loss and other hardships, including immediate damages in the hundreds of billions of dollars ' (Jones 1993). In recent years a steady upwards trend in the number of natural disaster has been reported. The reason for this is probably not an actual increase in the frequency of natural disasters, but more likely several impacts of modern development. It seems like a paradox that despite all the achievements in science and medicine which make life safer and healthier, death and destruction in form of natural disasters are continuing (Smith 1996). Reasons for the increasing number of reported natural disasters probably include improved reporting; substantial growth in the world population; especially in LDC's (Less Developed Countries), the occupation of hazardous locations; the increasing vulnerability of marginal groups; and the mismanagement of the environment (Chapman 1994).

Meteorological or atmospheric disasters are the most common catastrophic natural hazards (Chapman 1994). Everybody is exposed to the natural variability

of weather and climate. However, compared to other natural disasters, the death rates are relatively low, whereas economic losses are of a greater size. For instance, tropical cyclones are estimated to cause average losses of $260 million per year in Australia (AWRC 1992 in Chapman 1994).

Before the further discussion of the features and impacts of natural hazards, it is important to make a clear distinction between the terms 'hazard', 'disaster', and 'risk'. Hazards are natural phenomena or inescapable parts of life which induce potential threats to humans and their welfare.

Community and vulnerability

Since disasters involve people, it is very important to consider the socio-economic background of disasters. According to Blaikie (1994), social, economic and political origins of the disaster remain as the root causes. The human characteristics of a hazard threatened area influence significantly the impact of disasters, as well as the vulnerability and the response of the community (Oliver 1980).

Human sensitivity to environmental hazards is dependent on both human vulnerability which is reflecting the degree of tolerance to the hazard, and the physical exposure which is the intensity and the duration of the hazardous event (Smith 1996). It also depends on the level of human awareness and perception, depending upon the individual or community attitudes (Oliver 1980). Not all individuals view hazards alike, neither do all groups (Chapman 1994). This question of perception is a dynamic one, since further experiences change people's perceptions continuously and people are constantly adjusting to environmental pressures (Oliver 1980). Resulting from that the community response to a natural disaster will also vary. Human responses to hazards can modify both the natural events in, and the human use of, the environment (Smith 1996).

The definition of a community is very difficult. Until recently, a community was seen as 'all the people in a given area (ignoring internal diversity and external links and relationships)' (Buckle 1998). However, this definition is not adequate to meet the needs either of emergency managers or of local people themselves. According to Buckle (1998:385), a community is 'any grouping of people that have something in common, something shared (and believing that they have something in common and having only that as a common attribute may be sufficient to define a community)'. A type of community could be people living in the same district, people who vote for the same party, or tourists visiting the same area. Following from that, a person may belong to several communities at the same time.

The concept of vulnerability refers to a measure of risk combined with the level of social and economic ability to cope with the resulting event. It may be defined as the 'degree to which a system, or part of a system, may react adversely to the occurrence of a hazardous event '(Smith 1996:25). Until recently vulnerability was seen as an attribute inherent to certain groups of people, such as aged, poor or disabled people (Buckle 1995). Recent empirical research has shown that all types of people may suffer from some sort of loss, depending upon individual needs and capacities to recover from damage and loss. The exposure to different types of loss may vary between different groups and individuals within the groups (Buckle 1998). Anybody may be vulnerable to a range of different hazards and types of loss and this vulnerability may change over time. Vulnerability is therefore rather a dynamic process than a state (Buckle 1995).

last thing they want, is to be confronted with natural disasters. They happen to ignore the risk and show a very low level of natural disaster awareness. This issue is emphasised since there is generally a trend to offer the tourists access to outstanding views and activities in hazardous or high-risk zones (Murphy and Barley 1989), such as beachside sites that are most exposed to the full impact of tropical cyclones (Faulkner 1999). Because tourists are often more vulnerable

3 METHODOLOGY

3.1 STUDY AREA

Cairns is the regional capital of Tropical Far North Queensland, Australia with a population of 113,954 (ABS 1999). Situated in the tropical North, it is a major tourist destination , functioning as the gateway to the Great Barrier Reef, the tropical rainforest and the outback of North Queensland. The city is concentrated along a narrow, relatively flat coastal plain of 1818 km^2, that is backed by rainforest covered mountains and faces out onto extensive, accessible coral reefs (Berry 1996). In recent years the area has experienced a rapid economic and population growth caused mainly by an expanding tourist industry. Growth is expected to continue and it is estimated that the area's population will increase by approximately 2.1% as opposed to an annual growth rate of 1.6% for Queensland (ABS 1996).

The accommodation, cafes and restaurants sector is the second largest industry in Cairns after retail trade with an employment rate of 9.7% (ABS 1996). Takings from tourist accommodation for the Cairns region (not including Mareeba Shire) in 1999 were $234 million, accounting for 21.9% of Queensland's takings from accommodation. The Cairns region provided 18,4% of Queensland's hotel, motel, resort, guesthouse and serviced apartment rooms in December quarter 1999. Of the total number of the rooms, 47.2% were located in Cairns City, which is the area where the study has been conducted. In Cairns City there are currently 55 accommodation establishments with a total number of 4,511 guestrooms and 13,648 bed spaces; there are 2,153 people employed in the accommodation industry in 1999 (ABS 1999).

3.2 STUDY AIMS AND OBJECTIVES

In June 2000 a study of backpacker accommodation providers and backpacker visitors to Cairns was commenced. The overall aim of the study is to make a

positive contribution to natural disaster preparedness, awareness and safety amongst accommodation providers and backpackers in Cairns.

The specific objectives are:

1. To survey accommodation providers in the Cairns area in order to ascertain natural disaster preparedness of those establishments.
2. To survey natural disaster awareness (cyclones and associated hazards) amongst low-budget travellers (backpackers).
3. To investigate the possibility and interest in establishing a system of Cyclone Safety Accreditation for accommodation providers.

The expected outcomes of this project include

- Developing an understanding of the attitudes towards, as well as awareness of and preparedness for tropical cyclone and associated hazards
- Developing a clearer understanding of backpackers 'attitudes towards cyclone safety and associated hazards.
- With regard to the accommodation providers, the facilities with established cyclone safety plans were to be determined and those declaring the need for assistance in developing such plans would be offered guidance.
- Finally, it was expected to develop an understanding whether cyclone safety preparedness (or the potential for accreditation) affected the choice of accommodation amongst backpackers.

3.3 Survey Design

The survey was carried out using two different questionnaires. One was designed to evaluate the cyclone awareness and preparedness amongst accommodation providers whereas the other one was designed to evaluate the cyclone awareness and preparedness amongst backpackers in Cairns. The accommodation questionnaire contained about 20 questions, whereas the backpacker one contained about 30 questions.

The survey questions were designed to achieve the aim of the study, i.e. to make a positive contribution to natural disaster preparedness, awareness and safety amongst accommodation providers and backpackers in Cairns.

Concerning the accommodation providers, the survey included questions about previous experience of cyclones, the availability of cyclone safety information at the facility, the knowledge about cyclones as well as the interest in the establishment of a Cyclone Emergency Safety Plan or the improvement of the current cyclone safety situation. The questionnaire for the backpackers contained demographic questions, questions about their travels, about their knowledge of cyclones and storm surges, previous experience with cyclones, as well as their source of information about natural disasters.

The questionnaires were presented on a two-side printed A4 sheet. They were accompanied by a covering letter, which explained the aim of the survey and introduced the researcher's name, the James Cook University as well as the Counter Disaster Committee. Confidentiality of responses was guaranteed and the participants were thanked for their contribution. A copy of each questionnaire is included in Appendix 8.2.

3.4 Sample Population Selection

For the accommodation survey, only officially registered facilities were selected, taken off a list provided from the CCC (Cairns City Council). Due to time and transport constraints only accommodation places in a central location were chosen, such as Cairns, Cairns North and Parramatta Park. However, from these areas, all accommodation providers from the list were included, unless it was not possible to contact them or they refused to participate.
Concerning the backpacker survey a non-probability convenience sampling technique was decided upon. It refers to the convenient selection of the individuals, i.e. the first individuals that are found at a certain place will be interviewed. It was chosen due to time constraints as well as a lack of statistical information about the 'backpacker population'.

3.5 SURVEY TECHNIQUE

The survey was carried out between the 13th and the 22nd

4 RESULTS

4.1 ACCOMMODATION PROVIDERS

4.1.1 Accommodation characteristics

In order to be able to categorise the accommodation providers, questions concerning the size and occupancy rate were asked.

Out of the accommodation facilities included in the survey many establishments were of a small or medium size, as indicated in Table 4.1.1. Seventy six percent of the facilities had less than 120 beds, the majority out of these had between 40 and 69 beds.

	Frequency	Valid Percent	Cumulative Percent
1-39	5	24	24
40-69	9	43	67
70-119	2	10	76
120-200	3	14	90
>200	1	5	95
no answer	1	5	100

Table 4.1.1: Number of beds of the accommodation facility

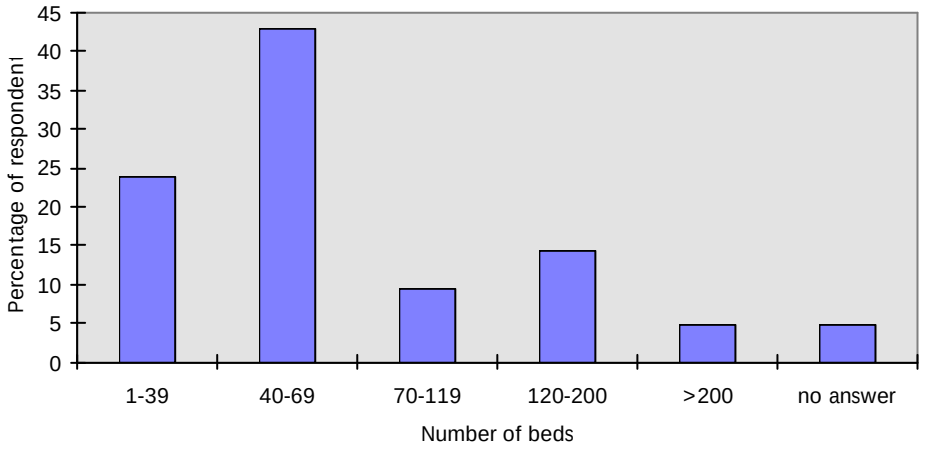


Figure 4.1.1 Number of beds of the accommodation facility

The occupancy rate between November and May is relatively low, as shown in Table 4.1.2. However, 66% of the respondents still had an occupancy rate of more than 50%.

	Frequency	Valid Percent
26-50%	6	29
51-75%	10	48
76-100%	4	19
no answer	1	5

Table 4.1.2: Occupancy rate between November and May

	Frequency	Percent
no impact, no damage	11	52
no tourists - bad business	6	29

4.1.3 General cyclone awareness/knowledge

The accommodation providers were asked several questions concerning the cyclone awareness in order to determine the existing knowledge they already have.

All of the respondents except one replied that they would be affected in some kind of way if a severe cyclone crossed the coast. Table 4.1.4 shows that the most frequent expected effects included power failure (57%), severe winds (48%), as well as damage from flying debris (38%) and flooding (33%). A relatively low number (24%) was concerned about being affected by a storm surge. Nineteen percent believed they would be affected by all of the listed impacts.

	Frequency	Valid Percent

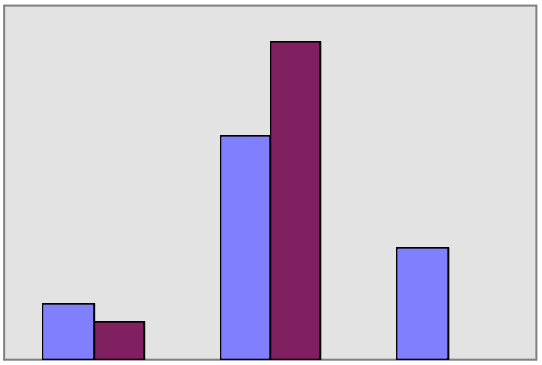
Concerning the risk of cyclones to the business, most of the accommodation providers considered financial or business risk more significant than the risk of property damage and personal safety, as indicated in Table 4.1.5.

	no risk		potential risk		medium risk		quite significant risk		significant risk		TOTAL
	F	%	F	%	F	%	F	%	F	%	F
Risk of Property damage	4	19	10	48	2	10	1	5	4	19	21
Risk of personal safety	9	43	6	29	2	10	2	10	2	10	21
?	13	62	16	77	4	20	3	15	6	29	
Risk to future business/reputation	6	29	4	19	3	14	3	14	5	24	21
Risk of financial loss	6	29	4	19	4	19	1	5	6	29	21
?	12	58	8	38							

The knowledge of the accommodation providers about the cyclone watch or warning is relatively low. Table 4.1.6 shows that in average only 12 % of the respondents could explain correctly what a cyclone watch or a cyclone warning was. However, 57% could gave at least a partially correct answer concerning a cyclone watch and 81% concerning a cyclone warning.

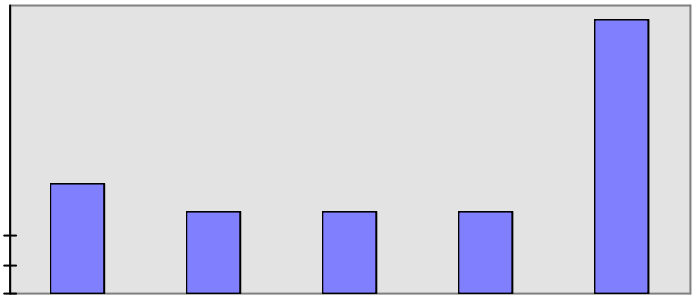
	Cyclone Watch		Cyclone Warning	
	Frequency	Percent	Frequency	Percent
correct	3	14	2	10
partially correct	12	57	17	81
incorrect	6	29	2	10
Total	21	100	21	100

Table 4.1.6: Knowledge of cyclone watch/warning



	Frequency	Percent
Staff	7	33
Pamphlets	4	19
Media	4	19
None	3	14
Internet	3	14
Other	3	14

Table 4.1.7: Cyclone emergency information available at the facility



	Frequency	Percent
Radio	19	90
TV	15	71
Internet	15	71
Weather fax	10	48
Cairns City Council	7	33
Other	3	14
Total	21	100

Table 4.1.8: Source of cyclone information for management

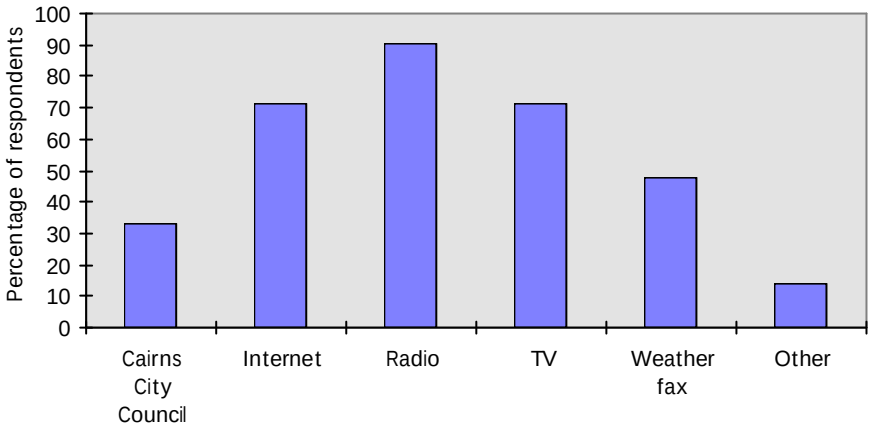


Figure 4.1.8: Source of cyclone information for management

Most of the respondents have some sort of Cyclone Safety Emergency Plan, such as a designated responsible person (81%), a means of securing business records (61%) or emergency supplies of water and food (62%) (Table 4.1.9). Ten percent of the accommodation providers had no Cyclone Emergency Safety Plan

4.1.5 Interest in the improvement of the cyclone safety situation

In order to improve the cyclone safety situation, several questions concerning the interest and the readiness in cooperation were asked.

Ninety percent of the respondents considered pamphlets as the most valuable type of information; Table 4.1.10 shows that the same number would be willing to provide cyclone safety information pamphlets in the facility.

	Frequency	Percent
pamphlets	19	90
other	3	14
videos	2	10
TOTAL	21	100

Table 4.1.10: Most valuable information for visitors (according to accommodation management)

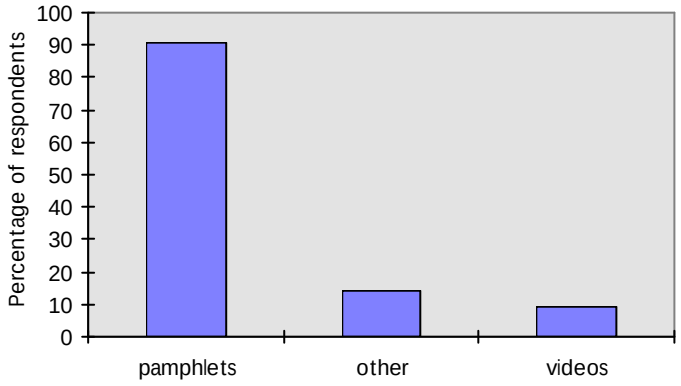


Figure 4.1.9: Most valuable information for visitors (according to the accommodation management)

Sixty two percent of the respondents would be willing to phone in to report the number of occupants at regular intervals.

A relatively high number of 71% of the accommodation providers would be willing to receive some assistance to establish a Cyclone Safety Emergency Plan or to review their existing emergency plans.

About half of the participants would be interested in an informative seminar about cyclone safety, accessing assistance, warning systems, etc.
However, less than half of the participants think their business would benefit from having a documented and well-prepared Cyclone Safety Emergency Plan.

4.2 BACKPACKERS

4.2.1 Backpacker characteristics

The participants were asked several demographic questions. The purpose of these was to get an idea of the characteristics of the backpacker population visiting Cairns.

The gender proportions of the respondents were quite equal, 51% of the backpackers were male, 49% were female.
The majority of the backpackers contributing in the survey were between 20 and 30 years old, as indicated in table 4.2.1.

	Frequency	Valid Percent
0-19	15	9
20-25		

	Frequency	

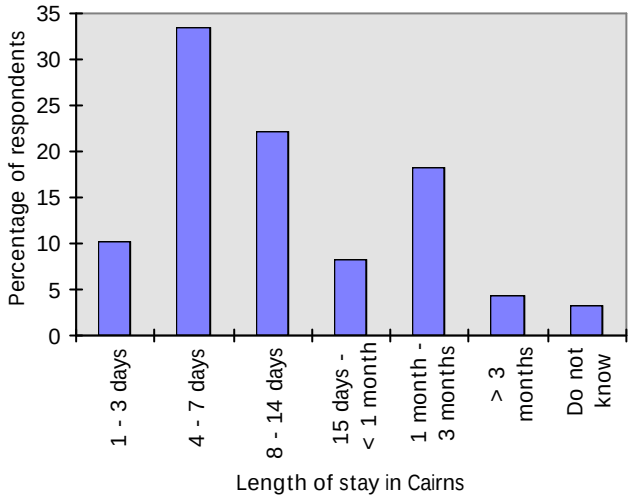


Figure 4.2.4: Length of stay in Cairns

The most frequent means of transport were bus, plane and motor car, as shown in Table 4.2.5. Whereas bus and motor car were often used for over 80% of the travel, plane was rather taken up for a shorter time period, less than 20% of the travels. About 10% of the backpackers had used 4WD between 1 and 20% of their trip.

	Percentage of use										
	1-20%		21-40%		41-60%		61-80%		81-100%		TOTAL
	F	%	F	%	F	%	F	%	F	%	

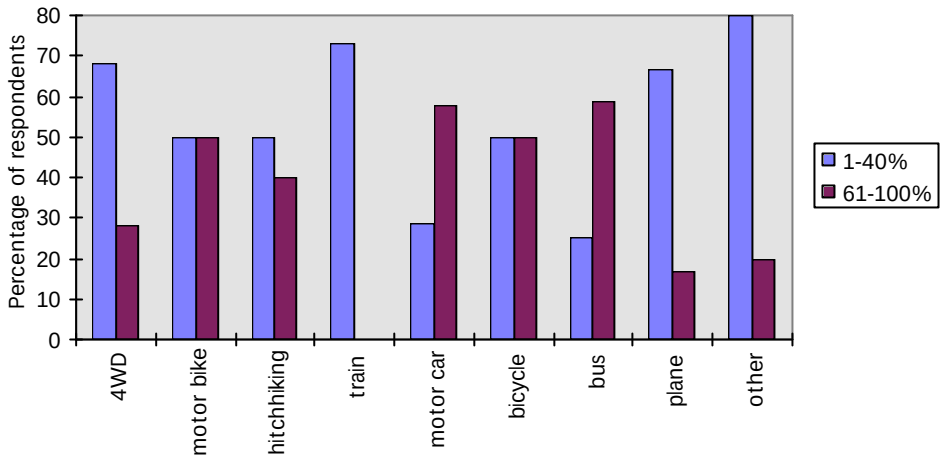


Figure 4.2.5: Transport use

Ninety eight percent of the backpackers were travelling alone or in a small informal group (Table 4.2.6).

	Frequency	Valid Percent	Cumulative Percent
Small informal group	99	63	63
Alone	56	35	98
Organised group	3	2	100

Table 4.2.6: Size of travel group

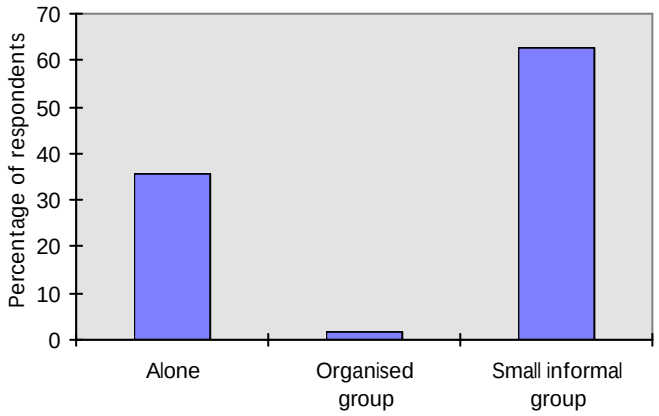


Figure 4.2.6: Size of travel group

Only 11% of the respondents planned their trip to Cairns with the cyclone season in mind.
The majority of eighty percent of the backpackers were using a guidebook on their travels.

Most of the respondents got information about Cairns from the guidebook (55%), friends (32%), word of mouth (16%) or travel agencies (10%), as indicated in Table 4.2.7.

	Frequency

Sixty seven percent of the respondents did not book their accommodation in Cairns before the arrival, and only 14% booked it from overseas (Table 4.2.8). Twenty three percent of the backpackers lodging in accommodation facilities found out about their accommodation through friends, family or travellers, and the same number got the information from the travel guidebook. Ten percent found the accommodation facility by walking or driving by (Table 4.2.9).

	Frequency	Valid Percent	Cumulative Percent
Cairns Upon arrival at the accommodation	49	35	35

	Frequency	Percent
Friends/Family/Travellers	37	23
Guidebook	36	23
Walking/Driving by	16	10
Travel agency	13	8
Advertisements	12	8
Internet	9	6
Locals	8	5
Other hostels	7	4
Upon arrival	5	3
Word of mouth	4	3
Other	3	2
Total	142	100

Table 4.2.9: Source of information about the accommodation

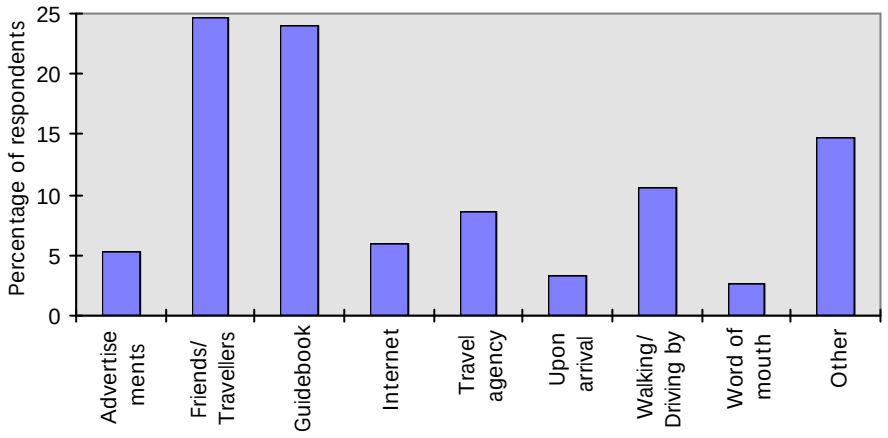


Figure 4.2.9: Source of information about the accommodation

The most common reasons for the choice of accommodation were the cheap price (37%), good reputation (20%), good facilities (18%), tour booking facilities (13%) and central location (12%), as indicated in Table 4.2.10.

	Frequency	Percent

4.2.3 Source of information about cyclones

To determine the knowledge and awareness that backpackers have of cyclones, it is necessary to investigate if and where they got cyclone information from.

Most of the people using a guidebook on their travels either did not know whether there was information about cyclones in it or there was just nothing written about cyclones. Only 21% of the backpackers knew there was information about cyclones in their guidebooks. However, 92% out of these considered the information as useful or good general information.
Concerning the cyclone safety information at the accommodation facilities, only 4% of the respondents stated there was some information available. Out of these, 80% considered it as useful or good general information.

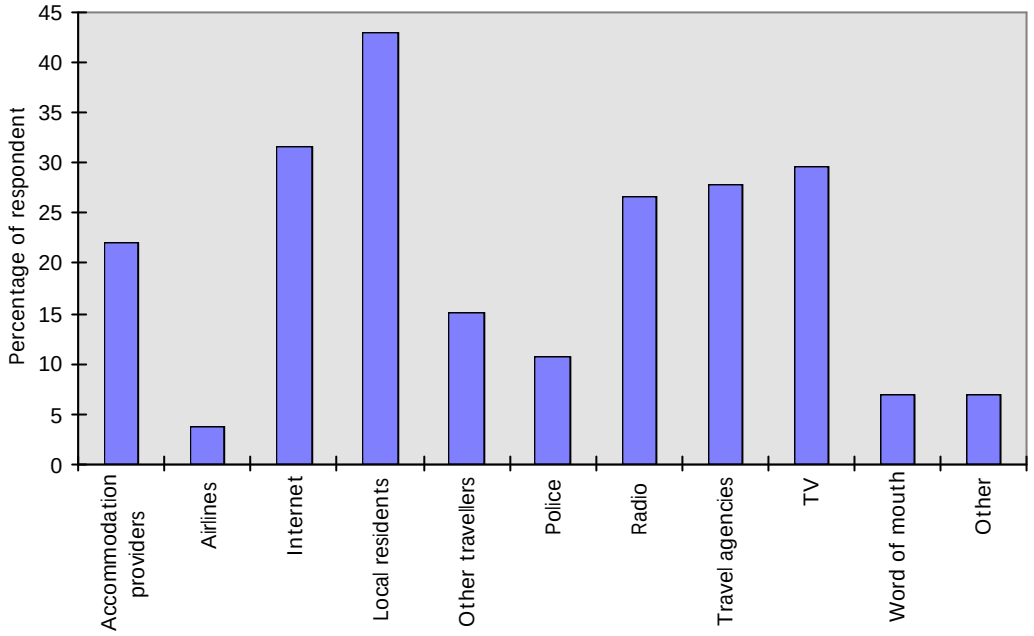
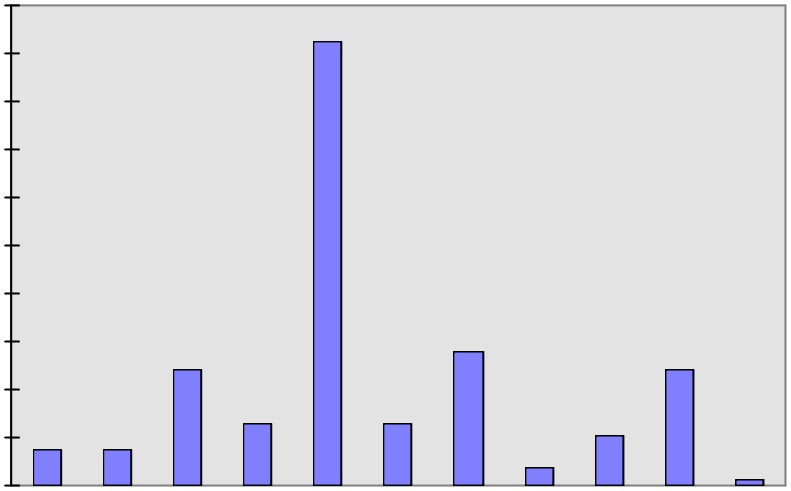


Figure 4.2.11: Source of up to date cyclone information

Nearly half of the respondents had not been informed at all about cyclones in Northern Australia (Table 4.2.12). The most frequent sources of information were media/news (14%), word of mouth (12%) and general knowledge (12%).

	Frequency	Percent
Have not been informed	73	46
Media/news	22	14
Word of mouth	19	12
General knowledge	19	12
Local residents	10	6
Guidebooks	10	6
tourguide/tourist information	8	5
Accommodation	6	4
Friends	6	4
other travellers	3	2
Other	1	1

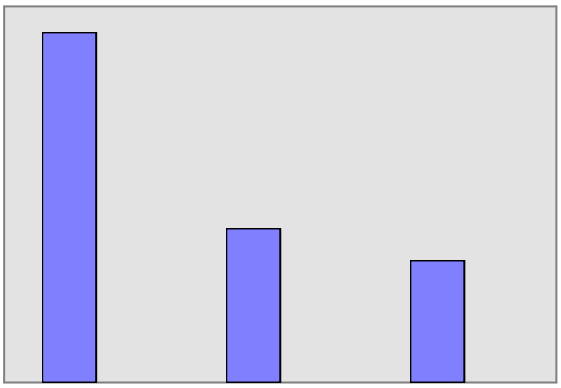
Table 4.2.12: Source of information about cyclones in Northern Australia



	Frequency	Valid Percent	Cumulative Percent
correct	6	4	4
partially correct	88	56	59
incorrect	5	3	63
Do not know	59	37	100

Table 4.2.13: Cyclone affected areas

	Frequency	Valid Percent	Cumulative Percent



	Frequency	Valid Percent	Cumulative Percent
Yes Yes, in cyclone season	32	21	21

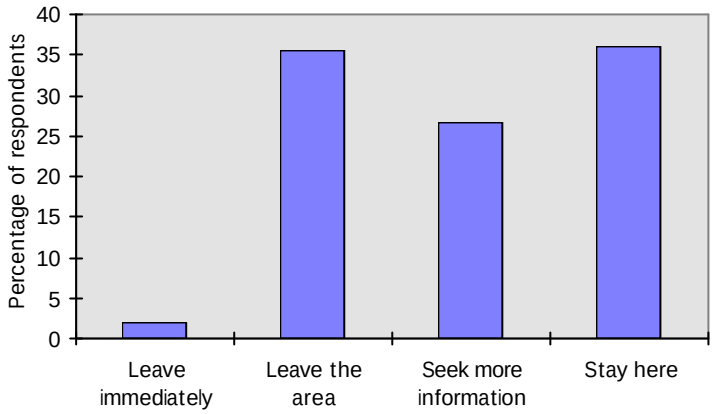


Figure 4.2.17: What to do in case of a cyclone?

5 DISCUSSION (ANALYSIS AND INTERPRETATION)

5.1 ACCOMMODATION PROVIDERS

Cairns is a very popular tourist destination with a high proportion of employees working in the industry of accommodation, cafes and restaurants (ABS 1996). The majority of accommodation facilities situated in the City centre participating in the survey were of small and medium size, i.e. they had less than 70 beds. The occupancy rate of the accommodation facilities in the cyclone season between November and May is relatively low in comparison to the winter months where tourism is at its peak. The reason for that is most likely the higher rainfall and the high temperatures in that period, which prevents people from visiting the area, rather than the occurrence of cyclones.

5.1.1 Previous experienc

transport system as the cause for less tourists visiting the area. Concerning direct effects, there were a few impacts such as damage to the building, cleaning up of debris after the cyclone, as well as power failure and flooding or water

Again, this might be explained by the minor impacts of cyclones the respondents had experienced so far. Many did not seem to take the danger of tropical cyclones extremely seriously. Again, the respondents were more concerned about the risks relating to reputation or financial loss rather than damage of building or injuries.

5.1.2 Preparedness

In order to develop an understanding of the safety status of the accommodation facilities in Cairns, it is important to determine their cyclone and associated hazard preparedness.

The majority of the accommodation facility management gets most of its information on cyclones during the cyclone season from general sources such as radio, TV and the Internet. Not even half of the respondents used the weather fax provided by the Bureau of Meteorology, which is updated at regular intervals. The status of information of the accommodation providers is still to be improved, and it is recommended that the management gets further educated about the existing possibilities and sources of information.

In regards to their actual preparedness, all of them have an emergency phone provided and most of them have an evening manager with key access to all rooms. These high percentages indicate a relatively high basic preparedness of the accommodation providers.

Ninety percent of the respondents already had some sort of cyclone emergency safety plan established, such as a designated responsible person or means of securing business records. Only sixty two percent of the respondents stated they had emergency supplies of water and food, and only about one third of the respondents provided an evacuation route and transport means or an alternate power source at the facility. This lack of preparation indicates that there is the apparent need of establishing a more detailed cyclone emergency safety plan.

The available cyclone emergency information in the accommodation facilities was mostly of a very simple nature, such as verbal advice through the management or the staff. Besides that, a few accommodation providers had information pamphlets provided or access to public media, news or the Internet. It might be assumed that there is either no serious concern about the risk of cyclones or that the managers do not want to inform the visitors in order to avoid a panic situation. Only a few accommodation providers stated they had already cyclone emergency information pamphlets available for the visitors. Most of the facilities providing cyclone safety information had them only available in English. This could cause problems considering the relative high percentage of 41% of the participating backpackers whose first language is not English.

However, according to most of the accommodation providers there was not a high demand for cyclone safety information from the visitors at all. If there had been one, this was only in the cyclone season. This might be explained through the visitors 'little knowledge and awareness about cyclones. The level of information and education of visitors is generally very low as well. Following from that, it might be assumed that the visitors do not tend to ask for information about a phenomenon they are not concerned about.

5.1.3 Interest in the improvement of the cyclone safety situation

The survey intended to find out whether the accommodation providers in Cairns would be interested to improve their natural disaster preparedness and emergency strategies in co-operation with the CLGCDC.

A high percentage of the accommodation providers considered pamphlets as the most valuable type of information and a high number of respondents stated they were willing to provide cyclone information pamphlets in their facilities. However, many respondents showed a sceptical attitude towards cyclone safety information. They were concerned about the nature the pamphlets were written in. Several accommodation providers stated they believed that the existing cyclone information pamphlets would cause unnecessary panic amongst guests

and scare them away from Cairns which would bring disadvantages for the business. However, they seemed interested in pamphlets which are suitable for backpackers and written in a more sensitive way.

Several accommodation providers stated their dissatisfaction with the treatment of cyclones in the media. They complained about the over-exaggeration through the media which apparently discourages the tourists from visiting the area. Moreover, a few respondents expressed their dissatisfaction with the cyclone warning system. According to them, it is not very reliable and causes unnecessary panic since a cyclone watch is announced 48 hours before the cyclone is supposed to hit.

Most of the accommodation providers seemed interested in an improvement of their existing emergency plans. Seventy one percent stated they would be willing to receive some assistance from the CLGCDC in the establishment or the reviewing of their cyclone safety emergency plans. About half of the respondents would be interested in participating in an informative seminar about cyclone safety, accessing assistance, warning systems, etc. . However, some respondents seemed afraid to make a commitment. It appeared that the accommodation providers were willing to develop their cyclone emergency safety plan, as long it would not be too time-consuming and they do not get too much involved. About two thirds of the accommodation providers would be willing to phone the tourism authority or the City Council to report the number of occupants at regular intervals. Many of them did not seem to understand the purpose of that or they were suspicious about the inconvience it brings with it. Some stated the distrust in the ability of the CCC to organise and control the situation. In general, about half of the participants thought their business would benefit from a documented and well-prepared cyclone safety emergency plan.

5.2 BACKPACKERS

5.2.1 Backpacker characteristics

The proportion of gender of the backpackers who were participating in the survey was quite equal amongst male and female, which corresponds with the proportion in the statistics (Haigh 1995). The age of the respondents varied between 16 and 40 years, with the majority between the age of 20 and 30. These results correlate with the data from the Queensland Backpacker Survey 1995 (Queensland Government 1995), where the majority of backpackers were also between 20 and 30 years old. Most of the participants were pretty well educated with a percentage of 70% who had tertiary education. This leads to the assumption that the backpackers contributing in the survey were mainly young people consisting of students or academic people.

The highest number of participants originated from the UK and Ireland, other frequent countries were Holland, Australia, Switzerland and Germany. Only a few backpackers contributing in the survey originated from Asia, and these were Japanese. These results correlate as well with the data from the Queensland Backpackers Survey 1995 (Queensland Government 1995), where the highest proportion was UK and Ireland, followed by 'other Europeans' and Australians. The proportion of Asians was very low as well. Amongst the backpackers participating in the survey, the most common first languages were English, Dutch and German. A relatively high percentage of the backpackers considered their level of competency of written and spoken English as good, only a few as poor. Following from that, it might be assumed that a percentage of 94% of the backpackers would be able to understand cyclone safety information.

More than half of the participating backpackers consisted of long-term travellers who were visiting the country between eight and twelve months. The large amount of time they spent in Australia indicates that there is a strong likelihood of them being in a cyclone prone area at some point in their travels.

Most of the participants spent between four and fourteen days in Cairns, which corresponds with the data from the statistics (Queensland Government 1995).

The backpackers participating in the survey used a broad range of transport means, which is typical for the backpacker population (Haigh 1995). The most popular means of transport for the backpackers were bus, plane or car. However, the plane contributed generally only to a small proportion of the time spent on the whole travel, whereas car and bus were used for a larger amount of time. It is to consider whether the relatively high number of backpackers travelling in a private car would get informed about an eventual cyclone warning. Since the access to and within Cairns can be very limited for extended periods during cyclones and consequent flooding, it would be interesting to investigate how they would expect to leave the area.

Most of the backpackers travelled in small informal groups or alone. Only 2% were part of an organised group. Tourists travelling in organised groups get most of their information from the tourguides, whereas individual travellers such as backpackers are much more independent and therefore more vulnerable to

of respondents stated that the level of cyclone preparedness of the accommodation facilities would influence their choice.

5.2.2 Experience, knowledge and awareness about cyclones

Since most of the backpackers originate from Europe (Queensland Government 1995; Haigh 1995), it was expected that the previous experience of cyclones is relatively low. Hardly anybody has ever lived in a cyclone prone area and only 25% of the respondents have ever experienced a cyclone, hurricane or typhoon before. Following from that, a relatively low level of cyclone awareness and knowledge resulting in a high vulnerability to natural disasters was expected.

Generally, a relatively high number of the respondents was aware that Australia is affected by cyclones. The reason for this high percentage could be that the respondents do not want to appear unaware and give answers they think are

One major factor which determines the cyclone awareness of backpackers is the provision of natural disaster information for visitors. Although a high percentage of the backpackers stated they were aware that Australia is affected by cyclones, only half of the respondents had been informed about cyclones in Northern Australia particularly. Most of the respondents who had been informed got their knowledge from media, i.e. news, word of mouth or general knowledge. Their low level of awareness and knowledge about cyclones indicates that the current information system is not sufficient. Tourist promoters apparently do not inform visitors sufficiently that the occurrence of cyclones is possible. In establishing a better cyclone information system the knowledge and awareness about cyclones could be increased as well as their interest and concern about cyclones sharpened and therefore their vulnerability diminished. For instance, the Internet was throughout the questionnaire one of the most important sources of information for the backpackers. As a possible solution it could be recommended to design a website designated for the natural disaster information of backpackers. Only a few backpackers using a guidebook travelling through Australia were aware whether there was information about tropical cyclones in the book. However, most of them considered the information provided as good general information. Concerning the accommodation facilities, only a very low number of the respondents could tell if there was cyclone safety information available in their accommodation facilities. This indicates that the backpackers are not very interested in or concerned about tropical cyclones, since they do not try to find more information about them, even if it was provided. However, it appeared that people who had been travelling in Broome or Darwin before, which are also cyclone prone areas, had a better knowledge and awareness about cyclones. This indicates again, that the cyclone information and public promotion in Cairns needs more attention. In conclusion, there is basically no efficient source of information in the Cairns region to inform the backpackers about the danger of cyclones and associated hazards.

5.2.3 Attitude, concern and reaction in case of a cyclone

As stated before, the respondents did not seem very concerned about the risk of cyclones in general. Only a few stated they planned their trip to Cairns with the cyclone season in mind, whereas several respondents mentioned they planned their trip more according to the wet season. The reason for that is again most likely the lack of information about cyclones, which results in a low level of awareness.

In order to get the most up to date information about cyclones, the majority of the respondents would ask locals, such as local residents or accommodation providers. According to previous studies, however, the Cairns community's demonstrated a low perception of risk towards cyclone hazards (Berry 1996). This involves the risk of the locals misinforming the visitors based on their misconceptions which emphasises the high natural disaster vulnerability of the backpacker community.

There was a strong agreement (over 80%) that cyclone safety information would be an asset in the accommodation facilities, whereas not even half of the respondents stated the level of preparedness would influence their choice of accommodation. This indicates again their low concern about being effected by tropical cyclones. Considering the case, a severe cyclone was heading straight for Cairns, nearly the same number of people would stay in Cairns as would leave. The rest of the people would seek more information and make a decision depending on this. This equal split of respondents indicates that there is no clear idea what to do in case of a cyclone.
Out of the 36% that stated they would stay in Cairns, many saw the possibility of a cyclone as an exciting experience they were looking forward to.

6 CONCLUSION AND RECOMMENDATIONS

The backpacker community is likely to be very vulnerable to the impacts of tropical cyclones. Backpackers have neither a lot of previous experience with cyclones, nor is there any efficient source of cyclone information available for them. Their concern about cyclones as well as their cyclone awareness and knowledge is therefore relatively poor. Significantly, almost half of the respondents had no prior knowledge of cyclones, and a little over half had only basic knowledge of cyclones. In case of a severe cyclone there is no clear idea what to do: one third of the backpackers would leave the area; one third would stay, looking forward to witness a tropical cyclone from a safe spot; and one third would try to seek more information. Most of them would talk to locals and follow their advice. This bears an alarming risk of misinformation since according to previous studies the community's cyclone awareness, preparedness and perception of risk is relatively low as well. For instance, an alarming high number of accommodation providers could not describe correctly the meaning of cyclone 'watch' and 'warning'; and many respondents noted storm surge as a cyclone impact of almost least significance, although it would likely be one of the most significant dangers in the area. Most of the accommodation providers were more concerned about financial or business risk rather than the risk of property damage or personal safety. Nevertheless, the willingness and interest of the accommodation providers in an improvement of their cyclone safety situation was relatively high.

Recommendations and Follow-up actions

It is recommended to provide some assistance through the CLGCDC for the accommodation providers concerning the establishment of cyclone safety emergency plans. Each accommodation facility's cyclone safety emergency plan could be listed and reviewed. In a seminar about cyclone safety, warning systems, etc. for the management and staff the accommodation providers could be further informed. Moreover the accommodation providers need to be

educated about the possible sources of up-to-date information about tropical cyclones and associated hazards.

The willingness of the accommodation management to ring up the tourism authority or the City Council to report the number of occupants when a cyclone watch is issued was relatively high (almost 2/3). Therefore further discussions concerning this hotline-system should be encouraged and formalised as soon as possible.

In regards to the backpackers, there obviously exists a substantial need in education of the visitors about the danger and risk of natural disasters. However, many of the accommodation providers mentioned their concern about the nature in which the current cyclone safety information is presented. It is therefore recommended that the information should be designed in a very sensitive way, with pamphlets especially suitable for backpackers that do not cause panic or unnecessary dissent amongst the visitors. Since the Internet is one of the most important sources of information for the backpackers, another possible solution could be the design of a website for this purpose.

7 REFERENCES

Berry, L., 1996 *Community vulnerability to tropical cyclones and associated storm surges: case study of the Cairns Northern Beaches townships*; Preliminary report to Queensland Emergency Services. Centre for Disaster Studies, James Cook University of North Queensland, Cairns

Blaikie, P., *et al.* (1994) *At risk: Natural hazards, people's vulnerability, and disasters.* Routledge London and New York

Buckle, P., 1995 A Framework for assessing vulnerability. *The Australian Journal of Emergency Management*, 10, 1, pp. 11-15

Buckle, P., 1998 Re-defining community and vulnerability in the context of emergency management In: King, D. and Berry, L., (eds.) *Disaster management: crisis and opportunity; Hazard management and disaster preparedness in Australasia and the pacific region.* Proceedings of the conference held at Cairns Nov 1st to 4th 1998, Centre for Disaster Studies, James Cook University of North Queensland

Chapman,

disaster 'held at James Cook University of North Queensland, July 16-18, 1979. Centre for disaster studies, James Cook University of North Queensland

Pearce, P.L., 1990 *The backpacker phenomenon; Preliminary answers to basic questions*, James Cook University of North Queensland, Townsville

Queensland Government; Department of Tourism, Sport and Youth, 1995 *Queensland Backpackers Survey* November 1995 Summary

Smith, K., 1996 *Environmental hazards: Assessing risk and reducing disaster.* Second edition, Routledge London and New York